

Cannabis in the Ancient Greek and Roman World

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Alan Sumler

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Dedication

In memoriam patri

Robert Lee Sumler 1945–2017

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Acknowledgements

The cover of this book features an image of a cannabis plant from an illuminated manuscript. This copy of the *Herbarium* dates to the 11th c. CE. It contains medical recipes for treating illnesses. The recipes are organized alphabetically around the main plant used for each multi-ingredient prescription.

Cannabis is introduced here. The Latin manuscript translates: “Wild cannabis grows in the wilderness, along the roads, and in ditches.” The section has two recipes, one for breast pain and the other for cold sores. For breast pain wild cannabis is first ground up, mixed with animal fat, and applied to the chest. The second recipe asks that the cannabis fruit be ground up with nettle and mixed with sour wine.

The entry in this manuscript ends with an interesting remark: *miraberis effectum bonum* “you will be surprised at its good effect.” The image is under copyright by Oxford, Bodleian Library (all rights reserved 2017). This edition has never been translated into English. There are many other manuscripts sitting in museums which have cannabis entries and are still yet untranslated and unfound. Accordingly, I want to thank the staff at the Bodleian and Ashmolean libraries, Oxford University, for helping me find this rare manuscript.

There have been many books written about the general history of cannabis, but never one on ancient Greece and Rome in particular. My hope is that this book will become a starting place for future research and discoveries. Soon, the number of scholarly works on cannabis will increase exponentially.

I wish to acknowledge readers and experts who gave me input on various stages of the book. My wife Sarah Sumler and colleague Mary Deforest (CU Denver) both read different versions. Ethan Russo, MD and Barney Warf (University of Kansas) gave early input and showed enthusiasm for

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Chapter 1

Hemp or Cannabis in the Ancient and Modern World

The ancient Greeks and Romans used hemp fiber for their boat sails, ropes, wicker-work, clothes, and shoes. Although no piece of Classical scholarship has focused on hemp in ancient Greece and Rome, it is generally agreed that hemp was an everyday item.¹ Did the ancient Greeks and Romans use psychoactive cannabis in their everyday life, for instance in medicine, religion, and for recreational intoxication?

The Classics community is undecided on this topic and very few articles have been devoted to it. Scholars, who write about psychoactive plants in the Greek and Roman world, admit that there exists a bias in the scholarly field against such topics. In the parallel academic fields of ancient medicine, religion, archaeology, and ethnobotany, the bias is less, and psychoactive plant usage among the ancient Greeks and Romans is generally more accepted.²

Some recent discoveries have tipped the scales. Most importantly, the research of Patrick McGovern (2003 and 2009) has presented new evidence that ancient wine contained different psychoactive plants.³ His main approach is molecular archaeology and the evidence comes from scientific analysis of residue found in ancient pottery. These psychoactive plants themselves are, at the same time, well attested in the ancient world in their magic, botany, and medical texts. In addition to medicine, McGovern found molecular proof that these ingredients were commonplace at the symposium, the funeral banquet, and in the household.

The bias is not so much against psychoactive cannabis, but against the idea that the ancient Greeks and Romans were pro-intoxication. This image of an intoxicated ancient world goes against the idea that moderation was the key to life, something Plato and Aristotle covered in their philosophies, as well as the Romans. This false assumption of a sober ancient world, dominated by moderation, threatens to cover up the everyday reality each ancient faced

and how they coped with it. Ancient Greek and Roman socialization taught moderation as an important virtue. What happened in real life may have been a different story.

Ancient medicine and magic both demanded an instant result, an outcome of good health or divine experience. Psychoactive plants were an important part of treating the sick patient or client of magic. Ancient writings on magic and medicine devoted space on how to pick these plants or buy them, prepare them, and administer them. Although the ancient Greeks made fun of the Scythian style of intoxication, i.e. smoking psychoactive herbs, the Greeks themselves were using these same items and even more potent ones in their wine, medicine, and everyday lives. The plants, after all, had medicinal benefits and are still used today in their synthesized forms.

Just as McGovern makes clear the truth about the properties of ancient wine, so I will make clear the role which cannabis played in the Greek and Roman world. Unfortunately, there is no archaeological “smoking gun” concerning cannabis in ancient Greece and Rome, although cannabis remains have been identified. Continuous habitation of these lands has made physical remains of food, drink, and burnt plant residue almost impossible to find. The many terracotta cups, displayed in museums around the world, have been cleaned and wiped of their molecular stories.

This journey begins with the textual sources, including ancient Greek and Roman writings about botany, medicine, pharmacology, and literature. These ancient sources assume that their audience was familiar with psychoactive cannabis, including the idea that cannabis was grown on local farms and wild in every wilderness. It appears on the comic and tragic stage, at the symposium, and even in dream interpretation.

The cultures surrounding the ancient Greeks and Romans used psychoactive cannabis in their medicine, religion, and recreation.⁴ The plant was commonplace as far away as China and India. It was traded throughout Asia, the Middle East, and Africa.⁵ I use scholarly findings from these other ancient cultures to inform my opinion about the ancient Greeks and Romans.

Just as wine is not merely wine, so I wish to show that hemp is not merely hemp, but also psychoactive cannabis. An ancient culture, which cultivated and used hemp on a regular basis, also cultivated and used cannabis. The shift is needed in Classical scholarship to see the role of cannabis among the Greeks and Romans. Previous scholarship on the topic was unable to fully express this truth.

We begin with the idea that hemp and cannabis are the same plant by turning to modern medicine, botany, and pharmacology. Our modern world is shifting back to a pro-cannabis stance and there has accumulated an abundance of scientific analysis of the plant, its properties, its applications, and history.⁶

Cannabis has been cultivated and used by humans since at least the 12th to 10th millennium BCE and the plant itself has been propagated by the elements of nature for a much longer time. Humans have a natural relationship with the plant, using some variants for fiber and others for medicine and intoxication.⁷

Modern day botanists disagree about the classification of the plant as to whether it is three distinct varieties or one very diverse “polymorphic” species. The three candidates or main species of the plant are *cannabis sativa*, *cannabis indica*, and *cannabis ruderalis*.

There are morphological and behavioral differences between *cannabis sativa* and *cannabis indica*. *Indica*, which the ancients called wild cannabis, has wide fingered leaves which are a darker green than *sativa*. *Indica* is a shorter and bushier plant whose dense flowers mature earlier than *sativa* flowers. *Sativa*, which the ancients called cultivated cannabis, is taller with less dense flowers. Its leaves are thinner fingered and lighter in color. The maturation time of *sativa* flowers is longer than *indica*. The maturation of a cannabis flower concerns the period of time when the THC glands or trichomes are ripe, psychoactive, and most potent.

Science further differentiates cannabis plants based on their phytochemical properties, here the make-up of their secondary metabolites. Primary metabolites are organic compounds important for the sustainability of the plant, its health and growth. Secondary metabolites are important for the plants defense and survival, but not necessarily important for the primary functions of the plant.

The flowers and leaves of the cannabis plant are covered with a very sticky substance called trichomes, or THC glands, which look like tiny mushrooms with a stalk and bulbous head. They can only be viewed with magnification.

When extracted, they look like a heap of brown dust to the naked eye. These trichomes protect the plant against its natural predators, like insects. The stickiness discourages pests from making contact with the plant and the psychoactive properties of the substance, like an animal’s venom, discourage the predator from coming back. At the same time, the stickiness helps the flower catch male pollen.

The trichomes covering the plant are classified according to human biology and chemistry as cannabinoids. Cannabis contains over a hundred different cannabinoids. The two most abundant cannabinoids in the cannabis plant are THC (Tetrahydrocannabinol) and CBD (Cannabidiol). Both cannabinoids have positive medicinal effects on human physiology. THC is most famous for causing the “high” and intoxicating properties for which cannabis is known.

Cannabinoids interact with and are metabolized through the human cannabinoid system, a set of cannabinoid receptors in cells throughout the body.



Figure 1.1 Pictured here is the psychoactive THC gland of the cannabis plant as seen at 450x magnification. The image was generated using a Scanning Electron Microscope made by Hitachi (SU3500). I used the microscope and made this scan at the Nanomaterials Characterization Facility at the University of Colorado, Boulder. All rights are reserved 2016.

See caption, third sentence

This system is similar to the way that opiates (medicines derived from the opium poppy) affect the human body through opioid receptors located in the brain and central nervous system. Our bodies produce cannabinoids and we also receive them through plants. Not all cannabinoids have psychoactive or mind-altering properties. Cannabinoids are part of human biological evolution and micro-nutrition.⁸

Today, cannabis strains that are low in THC, but high in CBD, are used to make fibers for clothes and other necessities. These tend to be sativa dominant strains with long stalks for harvesting fiber. Strains that are high in THC, like indica, are used for medicine and recreation because the greater THC content produces a powerful “high” or mind-alteration in the user. The ancients described this “high” as something affecting the head like wine, as drying or warming, and as medicinal.

Cannabis grown for fiber is called hemp and, through selective breeding, produces very little THC content (less than 3 percent). Besides hemp fiber,

hemp flower is processed for its CBD cannabinoids (used as medicine) and protein properties (called hemp protein and used for its amino acid profile).

The cannabis plant grown for medicine and recreation is also a product of selective breeding. Even sativa strains can have high THC content, but these breeds are solely used in medicine and recreation. Today, cannabis sativa and cannabis indica typically refer to designer psychoactive cannabis strains with different effects or “highs” on the user and distinctive characteristics of the plant, i.e. how it grows and when it matures. Demand from medical and recreational markets are characterizing which strains are bred and selected.

The most popular ingestion method today and through the ages for cannabis is to dry and smoke its flowers. The cannabis flower is technically called inflorescence and does not look anything like a typical plant flower as we might imagine a rose. It is bushy and hairy and grows along the tops of the plant (cola) and along its side shoots. The flower consists of dense plant material covered with different cannabinoids, as well as pistils (hairs which turn red when ripe and collect male pollen), and other metabolites like terpenes. Terpenes are responsible for producing the memorable potent smell of the plant, typically described as the smell of a skunk. They have their own medicinal properties in addition to the cannabinoids.

When the female cannabis flower is impregnated by male pollen, the efflorescence fills with seeds. The ancient Greeks and Romans referred to cannabis efflorescence as seed or flower, without any preference to one term or the other. This tendency has more to do with their rationale of plants and their understanding of botany. When their medical recipes instruct to use cannabis seed or flower, they are referring to the efflorescence with seed inside.

We do not commonly refer to the psychoactive part of the cannabis plant as efflorescence; it is merely a technical term from botany. The product sold in medical and recreational markets is known by its various slang or colloquial names: flower, weed, pot, bud, marijuana, ganja, dank, herb, and other terms. In addition, cannabis is known by its designer name, typically the cross of two popular designer strains.

When a female cannabis plant goes unfertilized, the flowers do not produce seed and the THC potency is much greater. Designer cannabis is grown under controlled conditions indoor or outdoor to assure the plant goes unfertilized. This most potent cannabis is called *sensimilla*, a Spanish word meaning without seed. The medical and recreational markets solely trade in unseeded cannabis and THC extractions from the same.

The ancient Greeks and Romans were familiar with smoking or fuming cannabis.⁹ They also used other preparations which are still standard in today’s markets. Here I am referring to the different extraction methods for concentrating the THC and producing strong medicinal effects.

THC must be activated to affect the human body. Drying it out and heating it are ways of decarboxylating the THC glands, converting them from inactive to active. This process is called “decarbining” because, when heated, it loses a carbon atom and activates.

The most basic extraction of THC from cannabis flower is through cooking the dried and crushed up flower in butter or vegetable oil over a period of time, then cooking food or deserts with the psychoactive butter or oil. After the flowers cook, they are strained out and the oil or butter is stored away, so that it coagulates. The cannabis metabolites are most active when low heat has been applied for an extended period. The ancients and moderns both knew that eating infused cannabis snacks produces deeply felt medicinal effects, including sleep. The effects of eaten cannabis can last up to twelve hours and still be felt after twenty-four hours.

When the flowers are smoked or fumigated (the ancients threw them on hot coals), only about 25 percent of the THC is absorbed and activated in the body. This produces a mellow “high”, medicinal in strength, which goes away after a short period, an hour or two. Besides cooking or smoking, there are other methods of extraction which produce higher concentrations of THC.

THC can be extracted with water, alcohol, butane, propane, compressed carbon dioxide, and by compression of the flowers (heated or sifted). The oldest methods, besides smoking and cooking, are water extraction and compression. Before describing these methods, it should be known that butane, propane, and carbon dioxide extraction produces products upwards of 65 percent THC content. The ancients did not have such conveniences of extraction as modern-day processing facilities.

Cannabis may be extracted simply by means of water, either iced or hot. Hot water extraction would be a variant on butter or oil extraction. The water is warmed up with the crushed flowers, just like tea, and the patient drinks it. The ancients used this method.

With cold water extraction, the cannabis flowers are mixed with ice and water and agitated. A watery icy pulp is formed, but the THC does not dissolve in water as it does with other agents (like butane, carbon dioxide, and alcohol). The pulp is then sifted several times, first removing the plant materials, then finally sifting out the THC in concentrate. The leftover water is also psychoactive and can be ingested as such. We will see that the ancients made infusions with water, although they only sifted the plant from the water and they did not have ice.

The products of these extraction methods are generally called hash or concentrates. The oldest method of making hash goes back to the ancient Middle East; the more commonly used term is hashish (*charas*).¹⁰ The plants are dried and kept intact (stems, stalks, and flowers). The dry plants are beaten repetitively over large sifters. Under the sifters, THC and tiny plant

materials accumulate into a fine powder and ultimately are turned into sticky balls or bricks. This cannabis gum or resin may have been imported into ancient Greece and Rome.

There are a range of health benefits from THC and CBD. The ancients used cannabis in many of the same ways as we do today and for the same medical conditions. Their extraction methods are less refined than ours, but they felt the power of this plant and often wrote about its “high” in their medical texts.

According to the ancient Greek and Roman sources, ancient cannabis was of two kinds: wild (*indica*) and cultivated (*sativa*). In Pliny the Elder, a 1st c. CE Roman naturalist, we read about harvesting cannabis. The stalks are sheared for fiber and the flowers are dried and used for other purposes. The same usage appears in Dioscorides, a 1st c. CE Roman doctor, who describes cannabis as being used for fiber and for medicine. The most interesting understanding appears in Artemidorus, the 3rd c. CE Roman dream interpreter, who distinguishes between cannabis as fiber (hemp) appearing in a dream and cannabis (psychoactive flower) appearing in a dream. He further mentions that hemp and cannabis have an industry around them, since these symbols in dreams mean something different, if the dreamer is in the business of them.

It is likely that ancient cannabis *sativa* was high in THC, used for fiber, but not as potent as the wild version. The selective breeding process was already occurring, but the ancient cannabis for fiber was more potent in THC than today’s so-called hemp plant. For them, the wild and cultivated were medicinal and there is no reason to doubt the ancient testimony. It is at least safe to assume that the ancient Greeks and Romans did not have three plants, as we do today, a hemp low THC, *sativa* high THC, and *indica* high THC.¹¹

Classical scholars have not yet fully realized psychoactive cannabis in the ancient Greek and Roman world. The first Classics scholar to cover the topic was Brunner (1973), “Evidence of marijuana use in ancient Greece and Rome?” who helped develop the *Thesaurus Linguae Graecae* (TLG), a searchable digital library of all ancient Greek texts.

More than three decades later, Butrica (2010), “The Medical Use of Cannabis Among the Greeks and Romans,” covered psychoactive cannabis in ancient Greek and Roman medicine. His chapter appears in a book on cannabis science and history. His approach, like Brunner’s, is philological and scientifically informed.

Butrica concludes that the Greeks and Romans knew about and used cannabis in medicine, but does not make clear the larger picture, and, as other scholars (such as Arata 2004 “Nepenthe and Cannabis in Ancient Greece”), concludes that cannabis was not very popular in these cultures.

Other scholarly debates have revolved around the account of cannabis usage by the Scythian tribes described in Herodotus, a 5th c. BCE Greek

historian. The most popular conclusion is that, although popular with other cultures, it was not popular in Greece and Roman and not mentioned very often in their texts.

Within certain fields of Classical scholarship, different opinions have emerged. Three scholars, each with their own emphasis, write that cannabis and other psychoactive plants were extremely commonplace in the ancient Greek and Roman world. Luck (2006), *Arcana Mundi*, wrote about these substances in ancient magic and religion, Hillman (2008), *Chemical Muse*, about intoxication in the Greek and Roman world, and Rinella (2011), *Pharmakon: Plato, Drug Culture, and Identity in Ancient Athens*, about intoxication in Classical Greece.¹²

These scholars describe how the ancient Greeks and Romans used psychoactive plants in their medicine, recreation, religion, and everyday lives. McGovern, who examines the molecular evidence in *Uncorking the Past: The Quest for Wine, Beer, and other Alcoholic Beverages* (2009), supports these conclusions about drug usage among the ancients. McGovern (2009) also speculates that the ancients consumed cannabis in alcoholic mixed drinks, either grog or *kykeon*.

Moving out of the field of Classical scholarship, parallel fields like ethnobotany, history of pharmacology, and paleo-archaeology, provide a very different story altogether and hold their own conclusions about psychoactive cannabis in the ancient Greek and Roman world. Russo (2007), “History of cannabis and its preparations in saga, science and sobriquet,” takes his approach from pharmaceutical, archaeological, and textual evidence. He covers history, preparation, and usage throughout the ancient and modern world including the Greeks and Romans. Merlin and Clark (2013), *Cannabis: Evolution and Ethnobotany*, take a similar approach and focus on the botany and world propagation of the plant throughout history, covering many ancient cultures up to the present. Similar conclusions have been set down by Warf (2014), “High Points: An Historical Geography of Cannabis,” who writes on the propagation and usage of cannabis throughout the globe. Each of these scholars considers cannabis usage in nearby cultures like Babylon and Egypt alongside the Greek and Roman civilizations.¹³

I focus on the Greeks and Romans, setting these other ancient cultures in the background. Besides medical usage, my analysis also covers religious and recreational usage of cannabis. I am interested in its ancient preparations, applications, rationale behind it, and import or trade of it.

In the next chapter, I cover the evidence of cannabis usage in ancient cultures that are not Greek and Roman, while setting them within the context of Greece and Rome. In chapter 3, I delve into the ancient Greek and Roman rationale of medicine, pharmacy, magic, botany, and intoxication. In chapter 4, I focus on cannabis in Greek and Roman medicine and pharmacy.