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The Beverage of the Ages:
The Role and Function of Beer in Sumerian Society

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“He who does not know beer, does not know what is good”

Sumerian Proverb¹

Beer is an alcoholic beverage typically brewed from cereals such as wheat and barley. As a global phenomenon, beer is the world’s most widely consumed alcoholic beverage and the third most widely consumed beverage behind water and tea.² Beer experienced a convergent evolution developing in many geographically diverse areas such the Far East, the Americas, and the Middle East. In China, a beer brewed from rice, grapes, honey, and hawthorn fruits known as “*kui*” emerged around 7,000 BCE.³ The Inca Peoples of the Americas brewed a similar drink from maize known as “*Chicha de jora*,” traces of which have been found at sites such as Machu

¹ Stephen Bertman, *Handbook to life in ancient Mesopotamia*. (Oxford: Oxford University Press, 2005), 292.

² Jason Treat and Ryan T. Williams. "Our 9,000-Year Love Affair With Booze." National Geographic. January 17, 2017. Accessed February 07, 2019. <https://www.nationalgeographic.com/magazine/2017/02/alcohol-discovery-addiction-booze-human-culture/>.

³ Mark Patterson and Nancy Hoalst-Pullen. *The Geography of Beer: Regions, Environment, and Societies* (Berlin: Springer Science & Business Media, 2014), 25; Patrick McGovern, Juzhong Zhang, et al., *Fermented Beverages of Pre-and Proto-Historic China* (Washington D.C.: Proceedings of the National Academy of Sciences of the United States of America 101, no. 51, 2004).

Picchu⁴. Current research indicates the genesis of beer occurred as an accidental discovery around 10,000 BCE by Natufian peoples of the Levant, the ancestors of the Sumerians. The discovery occurred when wild barley, which was collected in jars, was accidentally moistened by encountering wild yeast, thus allowing the process of fermentation to occur.⁵ The Natufians continued this process as they sought the psychopharmacological effects of alcohol and the social and nutritional benefits the infusion provided.⁶ The discovery of beer was revolutionary and spread throughout the world, and it eventually led to the drink which is consumed today. This article will explore the fundamental role beer had on Sumerian civilization and the broader implications the drink had for the civilizations which succeeded Sumer.

Beer as a Precursor to the Neolithic Revolution

The desire for beer was fundamental in the decisive rise of the Neolithic revolution and the development of human civilization. In 1953, in what has come to be known as the Braidwood Symposium, a debate emerged if beer, and not bread, was the first processed item to be made from domesticated grains.⁷ Prior to the symposium, Robert Braidwood's research on the emergence of the Neolithic revolution at the site Qal'at Jarmo in modern day Iraq found evidence of early cereal and legume domestication. Jarmo villagers grew two varieties of wheat (einkorn

⁴ Bethany Turner, George D. Kamenov, et al. *Insights into immigration and social class at Machu Picchu, Peru based on oxygen, strontium, and lead isotopic analysis*. (Amsterdam: Journal of Archaeological Science 36, no. 2, 2009): 317-332.

⁵ Patterson and Hoalst-Pullen. *The Geography of Beer*, 23.

⁶ Solomon Katz and Mary Voigt, *Bread and Beer* (Philadelphia: Expedition 28, no. 2, 1986), 27-28.

⁷ Robert J. Braidwood, Jonathan D. Sauer, Hans Helbaek, et al., *Symposium: Did Man Once Live by Beer Alone?* (Hoboken: American Anthropologist 55, no. 4, 1953), 515-526.

and emmer), lentils, and a primitive form of barley.⁸ As a result, Braidwood published an article in *Scientific American* that assumed a cause and effect relationship between the domestication of cereals in the Near East and the production of flour in order to produce breads.⁹ This closely linked relationship was challenged by archaeo-botanist Jonathan Sauer of the University of Wisconsin, who questioned if domestication of cereals occurred to produce beer rather than bread, leading to the symposium "Did man once live by beer alone?" for the journal *American Anthropologist*. The symposium considered the question of whether the discovery of fermentation served as a precursor to targeted selection and the domestication of cereals. The symposium participants ultimately came to the consensus that the cultivation of early cereal crops in the near East would have been better suited to produce beer as opposed to bread.

This hypothesis has been supported by numerous experts in the time since the Braidwood Symposium including Charlie Bamforth, the Chair of the Food Science Department at the University of California Davis, and Solomon Katz of the University of Pennsylvania as an explanation for the domestication of cereals.¹⁰ This hypothesis has been bolstered in recent years following emergent archeological findings. Chemical analyses have been conducted of trough-shaped stone vessels that could hold 160 liters of fluid at the Göbekli Tepe, the current oldest known temple in the world (approximately 11,600 years old). The analysis conducted by Dr. Martin Zarnkow of the Technical University of Munich-Weihenstephan found substances testing positive for calcium oxalate, a constituent that develops following the mashing, soaking, and

⁸ Ehud Weiss and Daniel Zohary. *The Neolithic Southwest Asian Founder Crops: Their Biology and Archaeobotany*. (Chicago: University of Chicago Press - Current Anthropology 52, no. S4, 2011): S244. doi:10.1086/658367.

⁹ Braidwood, et al. *Symposium*, 515.

¹⁰ Steve Mirsky. "Ale's Well with the World." *Scientific American*. May 01, 2007. Accessed February 10, 2019. <https://www.scientificamerican.com/article/ales-well-with-the-world/>; Katz and Voigt. *Bread and Beer*, 23-34.

fermentation of grains.¹¹ In 2009, Dr. Patrick McGovern, the Scientific Director of the Biomolecular Archaeology Project at the University of Pennsylvania, found chemical evidence of tartaric acid that accumulates during the production of alcoholic beverages in stone vessels at the Neolithic site of Körtik Tepe. Archaeologists suggest that these vessels were used by nomadic peoples to brew beers from harvested wild grasses. As a result of these findings, it has been forwarded that hunter-gathers congregated at religious sites for ceremonies and were enticed to undertake communal work and as a result settle in order to worship more regularly and experience the mood-altering effects and nutrition beer had to offer.¹² This hypothesis has been bolstered by a team from the Norwegian University of Life Sciences in Oslo who, following the conclusion of genetic testing, determined that the earliest domestication of grain occurred in the area of Karacadağ very close to the Göbekli Tepe, which provides additional evidence that the production of alcohol and the domestication of grain were intimately interrelated.¹³

The desire to consume alcohol and engage in rituals is what led to long term human settlements. For the Natufians, the consumption of alcohol had social benefits like immediately elevating emotions, but it also contained perception-altering qualities. As a result, it was important in both secular and non-secular events such as in marriages and in social gatherings. Throughout the world individuals often appear to invest colossal amounts of energy and in many cases risk their safety in the pursuit of a food with mind altering or psychopharmacological

¹¹ Oliver Dietrich, Manfred Heun, Martin Zarnkow, et al. *The Role of Cult and Feasting in the Emergence of Neolithic communities. New evidence from Göbekli Tepe, south-eastern Turkey*. (Cambridge: Cambridge University Press: *Antiquity* 86, no. 333, 2012): 687,

¹² Patrick E. McGovern. *Uncorking the Past: The Quest for Wine, Beer, and Other Alcoholic Beverages*. (Berkeley: University of California Press, 2009), 81; Michael Dietler and Brian Hayden, eds. *Feasts: Archaeological and Ethnographic Perspectives on Food, Politics, and Power*. (Tuscaloosa: University of Alabama Press, 2010), 240-264.

¹³ Manfred Heun, Ralf Schäfer-Pregl, Dieter Klawan, et al., *Site of Einkorn Wheat Domestication Identified by DNA Fingerprinting*. (Washington D.C.: *Science* 278, no. 5341, 1997), 1312-1314.

properties. According to archeologists Solomon Katz and Mary Voight, this desire often led to fierce competition over scarce resources causing conflicts to emerge. As a result, ritual practices often became intertwined with these foods. Religion imposed restraint by reserving these foods only for ritual and social practices. The perceived need for the psychopharmacological and social properties of alcohol would be an adequate catalyst in prompting changes in society's behavior. In the context of beer, this growing need would have encouraged people to settle and produce cereals as the harvesting of wild cereals was not efficient enough to support the consumption of beer by all people. The importance of alcohol for both social and religious events, which likely served as a prompt for the Neolithic revolution, continues today. Amongst the Luhya people of Kenya, beer maintains both an important religious and social role for the Triki Tribe.¹⁴ This pattern is present in the Judeo-Christian culture where alcohol is often used for social events and plays an important role in rituals including the Jewish *metzitzah b'peh*, its consumption as a precursor to the Shabbat, and its importance in the Christian rite of the Eucharist.

The desire to brew beer resulted in a transition from a Stone Age hunter-gatherer nomadic lifestyle to an agrarian lifestyle characterized by sedentism on the lowland alluvial planes of Mesopotamia. The region of initial settlement contained rich soil thanks to its position between the Tigris and Euphrates rivers. Stable settlements began to arise with the cultivation of soil because of stability a coevolution occurred with the domestication of animals. This established the precursors of modern agricultural sciences as the Sumerians engaged in practices of artificial selection, animal husbandry with livestock, and the selective breeding of crops.¹⁵ Around 4,000 BCE, significant shifts in the climate resulted in a drier landscape and a lower

¹⁴ Katz and Voigt, *Bread and Beer*, 27, 28.

¹⁵ Lynn Hunt, Thomas R. Martin, Barbara H. Rosenwein et.al., *The Making of the West: A Concise History, Combined Version: Peoples and Cultures* (New York: Macmillan Higher Education, 2010), 3-7.

water table leading to the concentration of people in smaller spaces and serving as a precursor to the development of the large cities of Sumer.¹⁶ The cities which emerged in the first half of 3,500 BCE saw the birth of the Sumerian culture which we know today. In cities the technology of record keeping emerged where clay tokens, numerical tablets, seals, and the evolution of proto-cuneiform writing became a fully-fledged writing system. These progressions were all fundamental for the development of accounting to note exchanges and maintain records in a society that was becoming increasingly complex. In this time period we see the emergence of some of the earliest writings. Among these is the first recipe for beer on a tablet dating back to 1800 BCE. The recipe is part of a poem entitled *Hymn to Ninkasi*, which praises Ninkasi, the Sumerian goddess of beer, and contains a recipe to produce beer from barley via bread.¹⁷ Settlement was necessary for the processing of cereals for beer which enabled the necessary developments that brought forth the Neolithic Revolution.

Sumerian Culture and Beer

Beer was instrumental in influencing the economic structure of Sumerian society. Sumerians understood beer could be used as a currency as it had an intrinsic value, was easily divisible, could serve as a unit of account, and as a result could be used as a medium of exchange. Around 3,500 BCE, in the Sumerian city of Uruk, there is evidence of residents bartering with beer, trading the beverage for more scarce and precious resources such as precious

¹⁶ Hunt, Martin, Rosenwein, et.al . *The Making of the West*, 8.

¹⁷ John Dyneley Prince, *A Hymn to Ninkasi* (Chicago: The American Journal of Semitic Languages and Literatures 33, no. 1, 1916), 40-44.

stones, timber, and metal.¹⁸ This period of city settlement saw group stratification and the rise of social classes and wage labor. This is seen from a cuneiform tablet uncovered from the city of Uruk, which explains the rations of beer one is to receive in payment for their labor.¹⁹ Temple laborers would receive 1.75 liters for a day's worth of work while those of a higher class, such as senior dignitaries, would receive approximately five times that level.²⁰

Beer played a significant role for women as it provided economic opportunity in a heavily patriarchic culture. Mesopotamia was a dominantly patriarchal society where women retained significantly less rights than men as many families often sold daughters into slavery or prostitution.²¹ The primary economic avenues for women were prostitution, becoming a temple priestess, or becoming a baker/brewer. Sumerians saw brewing as synonymous with food preparation and therefore a female role/chore. As a result, women regularly brewed beer in preparation for their meals and were responsible for providing a household with bread and beer.²² The brewing of beer and the baking of bread provided an egalitarian economic venue for Sumerian women who were excluded from most professions. Women could sell excess products, and many established bakeries and taverns. Brewing was a well-respected profession as distinguished Assyriologist Adolf Leo Oppenheim notes, "The Brewer's craft is the only profession in Mesopotamia which derives divine protection and social sanction from a goddess -- in fact from two female figures of the pantheon: Ninkasi and Siris."²³

¹⁸ Johan F.M. Swinnen, *The Economics of Beer* (Oxford: Oxford University Press, 2011), 4.

¹⁹ Charles Singer, Eric J. Holmyard, Alfred R. Hall, et al. *A History of Technology: From Early Times to Fall of Ancient Empires, Vol. 1*, (Oxford: Clarendon Press, 1956), 279.

²⁰ *Ibid.*

²¹ Gerda Lerner. *The Creation of Patriarchy*. (Oxford: Oxford University Press (1986), 215.

²² Swinnen, *The Economics of Beer*, 6.

²³ Fred Minnick. *Whiskey Women* (Lincoln: Potomac Books, Inc., 2013), 1.

The importance of beer to Sumerians cannot be understated as its importance permeates all aspects of Sumerian culture notably spiritually, religion, mythology, and literature. Beer is central to a Sumerian creation myth noted in the poem “Inanna and the God of Wisdom.”²⁴ Inanna, the tutelary deity of Uruk, attempts to increase the city’s glory by bringing them the *mes* (The sacred laws of civilization). However, the laws are guarded by her father, the god Enki, who uses them to govern his city of Eridu. Enki becomes very drunk one night off beer, and when Inanna asks for the laws, he concedes while inebriated. When Enki becomes sober, he searches for the laws but realizes he is too late to recover them. Inanna successfully delivers wisdom and the tools of civilization to humans causing irreparable damage to men, which is responsible for man’s imperfections today. Beer had a fundamental role in the religious practices of Sumerians. It was believed that beer was a drink and a gift from the gods that had the goal of promoting human well-being and happiness.²⁵ In worship to the gods and goddesses, the Sumerians would present beer as offerings in their respective pantheons and temples of worship.²⁶ In addition, there are four deities in the Sumerian polytheistic religion who have a close association with beer. First, Siris, a goddess whose name is often metonymically used to refer to beer, Siduri, the goddess who covers the enjoyment of beer, Nisaba, the goddess of harvest—the primary product being that of barley, and Ninkasi, the tutelary goddess of beer and daughter of Inanna, the goddess of heaven.²⁷ Outside of a religious context, beer is commonly mentioned in Sumerian literature, highlighting the reverence people had for the beverage. In the

²⁴ Samuel N. Kramer and John R. Maier, *Myths of Enki, the Crafty God*. (Oxford: Oxford University Press, 1989), 160-162.

²⁵ Samuel Noah Kramer. *The Sumerians: Their History, Culture, and Character* (Chicago: University of Chicago Press, 1963), 214.

²⁶ Geoffrey Dobson. *A Chaos of Delight: Science, Religion and Myth and the Shaping of Western Thought* (Abingdon: Routledge, 2016).

²⁷ Mikhal Dayagi-Mendeles. *Drink and be Merry: Wine and Beer in Ancient Times*. Vol. 417 (Jerusalem: The Israel Museum, 1999), 100; Charles Russell Coulter and Patricia Turner, eds. *Encyclopedia of Ancient Deities* (Abingdon: Routledge, 2013), 332, 346-347, 430.

Sumerian work the *Epic of Gilgamesh*, the character Enkidu is created by the gods to prevent Gilgamesh from oppressing the people of Uruk.²⁸ Before Enkidu can complete this task, he must be educated in the ways people live. In the book, there is a passage that details how Enkidu “did not know how to eat bread,/ nor had he ever learned to drink beer!” This passage suggests knowing how to properly drink beer was an important quality of civilized people.²⁹ Enkidu was later educated in the ways of civilization by a temple harlot named Shamhat who taught him how to properly drink beer amongst a variety of other lessons.³⁰ Beer was consumed often for intimate occasions and often went hand in hand with sexual intercourse as evidenced by erotic scenes, which often contain beer or references to beer.³¹ Furthermore, in Sumerian erotic poetry, references to beer are common. One such poem creates the comparison of the sweetness of one’s beloved to “the sweetness of honey and dates” and the “sweetness of butter and beer.”³²

Health Benefits of Beer in Sumerian Society

In the context of the modern world, it seems oxymoronic to discuss the health benefits of beer, however in Sumerian society beer was often one of the most nutritionally dense items an individual could consume. The beer consumed by Sumerians varied significantly from the commercially available beers consumed throughout the world today. Beer was not brewed with

²⁸ Andrew George, *The epic of Gilgamesh: the Babylonian epic poem and other texts in Akkadian and Sumerian* (London: Penguin, 2002), 1.

²⁹ *Ibid*, 14.

³⁰ *Ibid*, 9.

³¹ Peter Damerow, *Sumerian Beer: The Origins of Brewing Technology in Ancient Mesopotamia* (Berlin: Cuneiform Digital Library Journal 2, 2012), 18.

³² Bertman. *Handbook to life in Ancient Mesopotamia*, 180.

hops as is common today, and it included the fermentation of “*bappir*” or a hard twice baked bread and the addition of crushed grains, not involved in the fermentation process.³³ Sumerian beer contained a diverse array of additives for flavoring including fenugreek, coriander, dates, safflower, lupine, mandrake, grape pips, and orange skins.³⁴ As a result, Sumerian beer was thick with a viscous consistency much like that of porridge or gruel.³⁵ The alcohol content of this beer was somewhat low ranging from 2-5% alcohol by volume.³⁶ As a result of its dense consistency and low alcohol content, beer was often featured centrally as part of meals rather than as an accompaniment. Beer was considered more of a foodstuff, and individuals consumed approximately one liter per day.³⁷ Beer was considered to be preferable to bread as bread was often used to produce beer, and many avoided eating breads altogether except in instances of famine.³⁸

The consumption of beer provided a selective advantage for individuals who consumed it and their offspring as compared to those who abstained from its consumption. The cereals most commonly used in the Sumerian brewing of beer were barley and wheat which had a high degree of nutritional potential at 13-20% protein and contained a small source of fat.³⁹ Despite its prospective nutritional profile, it was significantly limited in many ways including: containing low levels of lysine, insufficient B-vitamin content, and containing a percentage of phytic acid.⁴⁰ The inadequate levels of lysine in barley and wheat made it difficult for the human body to

³³ Damerow, *Sumerian Beer*, 6.

³⁴ Charles Bamforth. *Grape vs. Grain: A Historical, Technological, and Social Comparison of Wine and Beer* (Cambridge: Cambridge University Press, 2008), 28.

³⁵ Ian S. Hornsey. *A History of Beer and Brewing*. (London: Royal Society of Chemistry, 2007), 86.

³⁶ William K. Stevens. "Does Civilization Owe A Debt to Beer?" *The New York Times*. March 23, 1987. Accessed February 09, 2019. <http://www.nytimes.com/1987/03/24/science/does-civilization-owe-a-debt-to-beer.html>.

³⁷ Charles W. Bamforth, *Beer: Health and Nutrition* (Hoboken: John Wiley & Sons, 2008), 32.

³⁸ Sewell. *The Geography of Beer*, 23.

³⁹ Katz and Voigt, *Bread and Beer*, 30.

⁴⁰ *Ibid*, 30.

synthesize the grain's amino acids into proteins usable by the human body. The grains contained only trace amounts of vitamin B, notably thiamine, riboflavin, and niacin; however, the amounts present were not enough to meet daily nutritional requirements. A major shortcoming of the cereals was high phytic acid content. Phytic acid binds to essential minerals such as calcium creating phytates that prevent mineral absorption in the digestive tract. The procedure of brewing contains the antidote for the pitfalls of wheat and barley through the process of fermentation. Fermentation promotes the growth of yeast bacteria cells which are high in lysine and B-vitamin content. Furthermore, the process of fermentation converts starches into sugars and activates phytase enzymes that break down phytic acid.⁴¹ As a result, less phytates are present in the digestive tract, allowing humans to process more nutrients from what they are consuming. Producing Beer was preferable to the processing of cereals to make bread as bread was typically unleavened, preventing the growth of yeast. The baking of bread requires heat, which kills yeast and stops the enhancement of protein content.⁴² The process had tremendous benefits, and most importantly, fermentation could occur almost anywhere throughout Mesopotamia as yeast was abundant and wild yeast strains would begin to ferment a simple mixture of cereals and water. After this process has occurred once, it was easily replicable as cultures can be obtained from existing brews and used as starters for the baking and brewing of future batches, speeding up the process of fermentation. As a result, beer was likely the food source with the greatest nutritional inputs in the Sumerian diet, with the exception of animal proteins.

While the nutritional effects of beer were likely not immediately apparent to its consumers, the social effects were. The immediacy of the social effects likely created a greater

⁴¹ Mattias Fredrikson, Thomas Andlid, A. Haikara, et al., *Phytate Degradation by Micro-Organisms in Synthetic Media and Pea Flour* (Hoboken: Journal of Applied Microbiology 93, no. 2, 2002), 199.

⁴² Katz and Voigt, *Bread and Beer*, 31.

perceived value of beer above that of bread for many people. This higher perceived value of beer based on its social effects is reflected in the fact that most early grains from Mesopotamia were likely consumed as a cooked gruel or as beer as opposed to bread.⁴³ Beer with a low alcohol content was a nutritionally valuable food source and has added social benefits. The desire for the social effects of beer as part of a foodstuff can be seen in the Kofyar community of Nigeria where the processing of a millet beer makes up a significant portion of the communities' total caloric intake and is consumed by men, women, and children.⁴⁴ The process of brewing afforded greater nutritional benefits than the consumption of bread or unprocessed cereals. The fermentation of beer in Sumer provided a nutritional and social advantage to those who consumed it as fermentation made the grain easier to digest and increased the nutritional value inherent in wheat and barley.

Beer after the Sumerians

Following the Sumerians beer culture was assumed by the Akkadian peoples and later became a worldwide phenomenon. The Babylonians, who conquered the Sumerians, inherited brewing culture as a consequence of their actions. Beer continued to play a fundamental role in Babylonian culture and society. Women continued the tradition of brewing and received kits for beer brewing as bridal presents, and the traditions of paying people in beer continued as palace employees received beer rations in exchange for their work ranging from a gallon to quart per

⁴³ *Ibid*, 27.

⁴⁴ *Ibid*, 28.

day depending on their social status and rank, with administrators and high priests receiving the greatest allotment per day.

Beer's importance is reflected in the Code of Hammurabi, one of the earliest known set of codified and published laws established by the sixth Babylonian king, Hammurabi. The law code contains a handful of statutes (codes 108-110) in regard to beer that often imposed harsh penalties for violators. The code calls for the penalty of death for tavern keepers who water down beer/ short changed patrons, do not report criminal wrongdoings in their tavern, and for the execution of a "sister of god" should she choose to open a tavern or enter a tavern for a drink.⁴⁵

Following the Babylonians, the beverage continued its important role in Assyrian times where it maintained a high status in society. Following the completion of King Ashurnasirpal II's palace at Kalhu, he organized a 10-day festival where nearly 70,000 people were invited and 10,000 barrels of beer were consumed.⁴⁶ The Assyrian king Shamshi-Adad called for a consistent maintenance of a royal beer stock for his consumption, and a 2,000 BCE Assyrian tablet states that beer was among the list of foods Noah provisioned for his ark.⁴⁷

The beverage spread to Egypt as a result of Babylonian trade where a fondness for the beverage was immediate. Beer became a staple of Egyptian culture as Egyptians claimed the brew was invented by the god Osiris, and a new hieroglyph was invented for "brewer."⁴⁸ In

⁴⁵ "Code of Hammurabi." The Avalon Project: Documents in Law, History and Diplomacy. Accessed February 10, 2019. <http://avalon.law.yale.edu/ancient/hamframe.asp>.

⁴⁶ Bertman, *Handbook to life in Ancient Mesopotamia*, 23.

⁴⁷ *Ibid*, 29; "The History of Beer." All about Beer -- History. Accessed February 11, 2019. <https://people.cs.pitt.edu/~mehmud/cs134-2084/projects/Team4/history.html>.

⁴⁸ Patterson and Hoalst-Pullen, *The Geography of Beer*, 24.

Egyptian tombs, beer recipes and the infrastructure to brew beer were discovered as the Egyptians held it was important to consume beer in the afterlife.⁴⁹

However, beer was not valued by all ancient peoples. As beer spread from Egypt to Greece, but the Greeks preferred wine,⁵⁰ and the Romans after the Greeks considered beer to be the lower-class drink of barbarians. The Roman writer Tacitus stated, "To drink, the Teutons have a horrible brew fermented from barley or wheat, a brew which has only a very far removed similarity to wine".⁵¹ The Roman emperor Julian the Apostate went so far as to compose a poem entitled the 'Two Dionysi' which conflates the scent of wine to that of nectar, while making a comparison of the smell of beer to that of a goat.⁵² In modern times, a fondness for the substance has prevailed and as a result market research estimates that by 2022 the global beer market will reach the size of \$750 billion USD.⁵³ This figure would be larger than the combined market value of the gold, silver, copper, and iron combined in 2016.⁵⁴

Conclusion

⁴⁹ Garrett Oliver, and Tom Colicchio. *The Oxford Companion to Beer* (Oxford: Oxford University Press, 2011), 437-438.

⁵⁰ *Ibid*, 437.

⁵¹ Patterson and Hoalst-Pullen, *The Geography of Beer*, 25.

⁵² Swinnen, *The Economics of Beer*, 3.

⁵³ *Beer Market by Product (Light Beer and Strong Beer), by Production (Micro Breweries and Macro Breweries), by Category (Premium, Super Premium and Normal) and by Packaging (Canned, Bottled and Draught): Global Industry Perspective, Comprehensive Analysis and Forecast, 2016 – 2022* (New York, Zion Market Research, 2017), 1-110.

⁵⁴ Jeff Desjardins. "This Infographic Shows How Gigantic the Energy Market is Compared to the Metals Market." Business Insider. October 17, 2016. Accessed February 11, 2019. <http://www.businessinsider.com/comparison-between-oil-and-metals-markets-2016-10>.

Since the time of the Sumerians, beer has maintained an important role, which can be seen by its mention in all texts of the Judeo-Christian tradition (Torah, Bible, and Quran).⁵⁵ Today, rather than regarded as a gift by the gods meant to be consumed by all, the beverage holds a rather complex place in society. Beer is the third most commonly consumed alcoholic beverage in the world. However, the drink is simultaneously vilified. Many do not enjoy the fondness of the beverage due to the public health externalities including complications with childbirth, birth defects, liver disease, kidney damage, alcohol dependency, and accidents resulting from the operation of machinery while inebriated. Thirty-three countries around the world have mandatory health warning labeling requirements for alcoholic beverages warning consumers of what they are ingesting.⁵⁶ In addition, beer is banned in many countries or by their subnational authorities. This ban occurs most notably in countries with a high Muslim population including states in the Fertile Crescent whose history relates to the origins of beer.⁵⁷ Despite the negative perception held of beer by many today, the beverage is likely responsible for modern civilization. Beer likely enticed our ancestors to forgo the nomadic lifestyle in favor of adopting an agrarian lifestyle and settling in permanent/ semi-permanent establishments. As some scholars suggest, the mind-altering effects of the beverage likely served as a catalyst and lubricant that propelled the Neolithic revolution in Mesopotamia. In Sumer, it was responsible for making society function. The beverage provided nourishment for the adults and children of the society, maintained a prominent economic role, and was deeply embedded into Sumerian mythology. The

⁵⁵ Beer is mentioned multiple times in the texts, in the Bible and Torah it is seen in Leviticus 10:9, Judges 13:4. In the Qu'ran it is seen in verses 2:219, 4:43, 5:90.

⁵⁶ "Health Warning Labeling Requirements - Data by Country." International Alliance for Responsible Drinking. Accessed February 11, 2019. <http://www.iard.org/policy-tables/health-warning-labeling-requirements/>.

⁵⁷ Alcohol illegal in Afghanistan, Brunei, Iran, Libya, Kuwait, Mauritania, Saudi Arabia, Somalia, Sudan, and Yemen. Prohibitions exist on Muslim alcohol consumption in Bangladesh, Pakistan, and the Maldives. Subnational provincial restrictions on alcohol exist in India and the United Arab Emirates.

beverage retained its importance in later Mesopotamian societies, and the beverage remains with us today.

About the author

Jared Kelly studies both geography and political science at Berkeley. His favorite subjects are history and game theory. In his free time he enjoys surfing and hiking.

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