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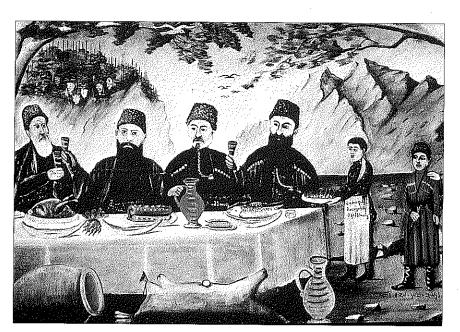
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CONSPICUOUS CONSUMPTION:

ANCIENT FEASTING AND DRINKING

BY PATRICK MCGOVERN



[KIKOS PIROSMAKASHVILL, "PRIMITIVIST" PAINTING OF

THROUGHOUT HUMAN HISTORY, PEOPLE OF ALL STRATA OF SOCIETY HAVE USED SPECIAL FOODS AND BEVERAGES

to mark major life events—including births, deaths, marriages, military victories, auspicious events attributed to the gods, harvests of major food crops, and the building of palaces and temples. The rich and famous were particularly drawn to feasting on a grand scale, featuring expensive, exotic cuisines and embellishments of music, art, dance, and attire. In their most developed form, these celebrations were formalized into secular or religious ceremonies. Today, archaeological and molecular archaeological

research is shedding new light on what foods and beverages in the ancient world were considered fit for the elite and their gods, and how their predilections set the course for the rest of society and later history, up to the present.

Feasts Fit for a King

Two particularly elaborate feasts, commemorating quite different events, are prime examples of how food and drink have long been important to human culture. In the first example, the year

was 714 B.C., and the place was Dur-Sharrukin, the Assyrians' newly-built capital along the Euphrates River in northern Mesopotamia (today the site of Khorsabad in present-day northern Iraq). Sargon II—the Assyrian king, who did not shrink from calling himself "ruler of the universe"—had just completed a successful military campaign and he and his entourage were ready to celebrate.

Stunning stone reliefs lined the rooms of Sargon's palace at Khorsabad, depicting a grand celebration. They showed (probably male) attendants dipping finely made lion-headed buckets into a large, ornate cauldron. The beverage was then duly delivered to the king's noblemen and high officials, who sit atop beautifully carved, backless chairs and hoist their lion-headed cups to the victorious king.

These wall decorations depict a great event for the Assyrians. Artifacts found in a tumulus (burial mound) at Gordion are similar in style to those depicted in the Assyrian palace. At about the same time, less than 300 miles away in the Phrygian capital Gordion (in today's central Turkey), there was another celebration: a funeral feast and burial of a king of ancient Phrygia. Gordion is where Alexander the Great is said to have cut the Gordion knot and become the ruler of all of Asia.

The burial chamber of the Phrygian mound was made of a double wall of logs and timbers, and is the earliest intact wooden structure in the world. Located deep in the center of the enormous accumulation of soil and stones that formed the tumulus, it was excavated in 1957 by a team from the University of Pennsylvania Museum under the direction of Rodney Young.

When the Penn excavators broke through the wall, they found an amazing display. At their feet was the body, laid out in state on a thick pile of dyed textiles inside a log coffin. These textiles showed how remarkable the preservation conditions were inside the tomb. Although the body had disintegrated, patterns of purple and brown dyes could be seen on the textiles, which unfortunately began to fade as soon as the tomb

was opened to light and air. A sample was brought back to Philadelphia, though, where analysis in my laboratory in the University of Pennsylvania Museum's Applied Science Center (MASCA) showed that the textile had been dyed with indigo blue. And, of course, blue and purple are the colors of royalty.

Aside from textiles, the chamber also contained one of the best-preserved and finest collections of furniture from antiquity. The size of the tumulus itself—the largest of the many in the vicinity of Gordion—and the sheer numbers and splendor of burial goods assure us that no ordinary person was buried here. The burial mound might have been for King Gordius, or it may have been for his son and successor—known to the Assyrians as Mita and to us as Midas. Nearly everyone has heard of the legend of Midas and his reputed golden touch, but most people don't realize that there was a real King Midas.

As they unearthed the tomb, the excavators also found what is considered the largest, most comprehensive Iron Age drinking set ever found—some 157 bronze vessels. In light of Midas's legendary touch, it might be surprising that these vessels were made of bronze, not gold. Yet once the accumulated layers of oxidation were removed, the bronze gleamed-like the precious metal. Also found was a marvelous lion-headed *situla*, a tangible mate to the Assyrian buckets depicted in the stone relief scenes in Sargon's palace.

The focus of this celebration—whether for Midas or Gordius—was not a military victory, but a departure from this world into a more glorious afterlife. Elizabeth Simpson, of the Bard Graduate Center for Studies in the Decorative Arts, has made a special study of the furniture and has hypothesized that the king lay in state outside the tomb before burial. Much like an Irish wake, a celebration of feasting and drinking honored the king's popularity and successful reign. Finally, his body was lowered into the tomb, along with the elaborate drinking set and the remains of the feast, which might sustain him in the afterlife. The wooden chamber

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was then piled high with clay, stones, and soil, and lay undisturbed for 2700 years.

By using modern scientific techniques to study these ancient artifacts and their residuesteasing out the ancient molecules and determining what natural products they derived from-my colleagues and I were able to reconstruct what people ate and drank at a royal funerary feast around 700 B.C. Contrary to legend, Midas-if this was indeed him-does not appear to have starved as a result of his golden touch or to have poisoned himself, as legend would have it. If his funerary feast reflects what he ate and drank in life, Midas benefited from an excellent diet. Obviously, the ancient Phrygians didn't have available the array of foods that we have today. Still, they made the most of what they had, relying on local fruits and vegetables in season, as well as game and herd animals.

There is no substitute for actual physical remains of an ancient meal, even if the food has decayed and the beverage evaporated. Our investigation showed that the beverage was a kind of Phrygian grog, a highly unusual mixture of wine, barley beer, and honey mead. The presence of wine was marked by the principal organic acid in grapes—tartaric acid—together with its salts; barley beer by calcium oxalate, or beerstone; and honey by beeswax, which, unlike the simple sugars in honey, does not degrade and can never be completely filtered out.

We determined that the entrée was a spicy stew of lentils and barbecued lamb or goat. Specific fatty acids, triglycerides, and cholesterol show that the meat was goat or sheep. And just as when you grill meat at home, the barbecuing produced what are called polycyclic aromatics. Since no bones were recovered from the residues, the meat must have been cut off the bone. Lentils were the predominant vegetable in the stew, as revealed by chondrillasterol, a plant steroid. Wine, olive oil, and honey gave added flavor or were used in the marinating and basting process. The stew was then finished off with anise or fennel and other spices (possibly native bitter vetch or wild fenugreek). Some part

of the meat and vegetables might have been sacrificed before the funeral banquet, as the Homeric epics and other ancient texts tell us about rituals. But it's clear that the lion's share of the ingredients were homogenized into the royal banquet stew: All of our analyses, no matter which pottery jar the sample was taken from, yielded almost identical chemical results.

A stew washed down by a strange mixed drink might not seem that festive. Yet for the people of central Turkey in 700 B.C., that ancient royal feast represented a high-protein diet (the meat and lentils), with a bonus. Besides the pleasant psychotropic effects when not drunk in excess, fermented beverages actually preserve and enhance the nutritional content of foods. More important, since the alcohol and antioxidants killed harmful microorganisms, people in antiquity who drank fermented beverages rather than water had a better chance of surviving, and thus reproducing.

Beer, Wine, and Civilization

Fermented beverages and special foods were not a new development of the Iron Age. We can trace the centrality of good foods and beverages in human culture back to prehistoric times. Indeed, feasting and drinking were very likely a major impetus for the domestication of plants and animals, and for the development of human civilization itself. As secular and religious leaders consolidated more and more wealth, permanent towns and cities grew up, giving rise to craftsmen (including chefs and beverage-makers), who were needed to satisfy the demand for greater ostentation and grander feasting—whether for the gods or their human counterparts.

Anthropologists once speculated that barley beer was the earliest fermented drink to be produced, and that it, rather than bread, provided the main incentive for domesticating the cereal. But in fact, you can make a good case that making wine (using grapes or other sugar-rich fruit such as berries) and mead (using honey, which has the highest simple-sugar content of any natural source) precede the producing of beer.

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[WALL RELIEF FROM THE PALACE OF THE ASSYRIAN KING SARGON I (722-705 B.C.) AT KHORSABAD IN NORTHERN IRAQ]

For one thing, beer is not that easy to make. Domesticated barley requires considerable processing, from sowing and winnowing to milling and malting the grain. More important, to make beer you need to supply yeast from another source. And that's where wine and mead win out.

What wine and mead have going for them is that their ingredients ferment naturally and can produce alcoholic contents in excess of ten percent by volume. The wine yeast (Saccharomyces cerevisiae) lives on the skins of some sweet fruit (especially grapes), and a related variety can tolerate the high osmotic pressures of honey. When the juice is exuded from fruit or the honey is diluted with water, yeast becomes active and begins digesting the sugars into carbon dioxide and alcohol.

I first became attuned to the importance of fermented beverages in the development of human culture in 1991, when I organized a conference on the "Origins and Ancient History of Wine" at the Robert Mondavi Winery. One idea that was bandied about during that conference was the so-called Palaeolithic Hypothesis.

It is not difficult to imagine a Palaeolithic people foraging in a river valley a million years ago. They spy brightly colored wild berries, and are enticed by their fragrance and their sugary,

even tart taste. They gather up as many as possible into an animal hide, a woven grass textile, or a crudely hollowed out wooden or stone container. Depending on the grapes' ripeness, some of the skins rupture under the weight of the gathered mass and the fruit exudes its juice. If the grapes are left in the container, gradually being eaten over the next day or two, the natural yeast on the skins of some grapes will cause the juice to ferment and become a low-alcoholic wine. Reaching the bottom of their primitive "barrel," our caveman or woman might dip a finger in the concoction, lick it, and be pleasantly surprised by the aromatic and mildly intoxicating liquid. More intentional squeezing and tasting might well ensue.

The likelihood of finding preserved organic residues to confirm this hypothesis is very small. Moreover, whatever wine was made must have been produced only in the fall, when the grapes matured. And this prehistoric Beaujolais Nouveau would have to have been drunk quickly before it turned to vinegar. It wasn't until the Neolithic period—from about 8500 B.C. to 4000 B.C.—that all the pieces fell into place for a momentous innovation: the intentional fermenting of beverages on a large scale.

Neolithic villages were the first, permanent, year-round settlements. These villages, composed of multi-room mud-brick structures much like

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rst, permanent, lages, composed ures much like those you would see in the Near East today, were a direct result of humans taking control of their food resources by domesticating a variety of plants and animals. As people gained a stable base of operations and an assured supply of food, what might be termed a Neolithic cuisine emerged, with the development of a variety of food processing techniques: soaking, heating, spicing, and fermentation.

Fermented beverages were a crucial part of why humans gave up their itinerant hunting and gathering ways in favor of a more sedentary way of life. The invention of pottery around 6000 B.C. enabled beverages (and food) to be stored for a protracted period of time in sealed containers, decreasing the need to hunt, gather, and be on the move to find new food sources.

Pottery was a boon not just for the Neolithic beverage-maker but also for the modern molecular archaeologist. The material is virtually indestructible and is recovered in huge quantities at most archaeological sites. Plus, it absorbs ancient organics, especially liquids, and holds them relatively intact for centuries, even millennia.

In 1968 at Hajji Firuz Tepe, a typical Neolithic village high in the northern Zagros Mountains of Iran, a University of Pennsylvania Museum expedition under the direction of Mary Voigt excavated sherds of six pottery jars, which they dated to 5400-5000 B.C. A yellowish deposit on the inside of one of the jars suggested that the contents had been a milk product, but analysis at the time of excavation proved inconclusive. Twenty-five years later, we were able to analyze the sherds with more sophisticated techniquesinfrared spectrometry, liquid and gas chromatography-and demonstrate that the residue was from a resinated wine. (More recently, chemical evidence of resinated wine was found in even older pottery-around 6000 B.C.—from Georgia in Transcaucasia.)

If all six jars contained wine—each jar holding some nine liters—and that was an average amount for a household in that village, then it would seem that wine was already being produced on a large scale. That, in turn, implies that the wild grapevine (*Vitis vinifera sylvestris*) had been taken into domestication. The domesticated vine (*Vitis vinifera vinifera*) is hermaphroditic, so it produces much more fruit on a predictable basis.

But was the vine domesticated in only one place and transplanted from that place elsewhere? DNA studies of ancient and modern grapes are under way, but even without knowing the final outcome of these investigations, an excellent case can be made for the single domestication hypothesis. Historical and archaeological evidence clearly shows that a wine culture spread out from Transcaucasia and the northern mountainous regions of the Near East to points south, east, and west-reaching the Jordan Valley around 4000 B.C., then Egypt by 3000 B.C., Greece by 2300 B.C., and so forth. And wherever that culture migrated-to Europe, to China, to the New World—fermented beverages assumed a prime role in the local customs, religions, cuisines, pharmacopoeias, and economies.

The Trickling Down of Culture

What gives a fermented beverage—or any special food, spice, or herb—its allure? It might be its physical appearance, its mind-altering effects, or simply its rarity, especially if it had to be imported at great expense from a distant, exotic place. Fermented beverages and the culture surrounding them held a special fascination for the wealthy. Used in both religious and secular feasts, fermented drinks allowed the wealthy to flaunt their social standing and importance.

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We see evidence of this at every turn in the Old World. Part of the Royal Cemetery of Ur's famous Peace Standard—an intricate shell and lapis lazuli mosaic that dates to about 2600-2500 B.C.— depicts a king being toasted by six generals to the accompaniment of harp music and song. And a cylinder seal from the tomb of Queen Pu-abi in the Royal Cemetery shows a king and queen drinking barley beer through tubes from a wide-mouthed jar. (This seal, incidentally, is on display in Copia's exhibition Forks in the Road.)

[BRONZE LION-HEADED SITULA (BUCKET) FROM THE MIDAS MOUND AT GORDION, TURKEY, CA. 700 B.C.]

Even the special vessels used to serve and drink beverages proclaimed grandeur. For example, the muzzle and eyes of a spectacularly carved bull's head rhyton (funnel vessel), dating to ca.1600-1400 B.C. and found at Knossos on Crete, were accentuated with inlaid shell and stones. A long-spouted Phrygian jug from the eighth century B.C. featured a painted geometric design and a stepped "waterfall" along the inside of its spout. From glass and ivory to semiprecious stones and precious metals, the sheer amount of luxury materials that went into making drinking vessels is astounding.

Of course, only royalty or upper-class individuals could afford the real thing. But as soon as the vessels could be produced in cheaper materials, there were plenty of takers. First, though, a new, prestigious beverage with all of its symbolic associations and special vessels was introduced to the elite through trade or ceremonial exchange. Once it had assumed a major role among the cultural movers and shakers, it could then work its way into the society at large.

The establishment of a royal winemaking industry in the Nile Delta around 3000 B.C. stands as a perfect example of how a special food or beverage can take captive a culture. We know that the earliest kings of Egypt imported their wines from the southern Levant. More than five thousand years ago (ca. 3150 B.C.), one of

the first kings of Egypt, Scorpion I, was buried at the southern religious capital of Abydos with some seven hundred jars containing forty-five hundred liters (almost a thousand gallons) of resinated wine. Analysis of the pottery showed that the jars were made from clays local to the Jordan Valley, the southern hill country to its west, and the Transjordan to the east. Assuming that the jars were made in the same place as the wine, it is clear that the wine in the tomb at Abdyos was transported some five hundred to seven hundred miles, overland by donkey caravans and then probably by boat up the Nile.

In these early stages of Egyptian history, the ruling class had begun to import wine as a prestige item. Even though it must have been like importing liquid gold, they had no choice but to procure the beverage from the southern Levant, where a winemaking industry had been in existence for at least one thousand years.

But once wine gained a social and economic foothold in Egypt and became incorporated into religious rites, the next logical step was to transplant the Eurasian grapevine itself to Egypt. This would ensure a more steady supply of wine, tailored to local tastes, at a lower cost. Since the wild grape had never grown in ancient Egypt, Levantine winemakers were brought in to speed the process. Within probably a century around 3000 B.C., extensive tracts of the Nile Delta were planted with the vine. Sunny days

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and a short rainy season guaranteed an abundant crop. Soon people of every station in life were able to enjoy wine.

The royal wine industry prospered for the next 3000 years. The wines of Tutankhamen of the New Kingdom (ca. 1330 B.C.) were stored in amphoras that have labels almost as detailed as those on modern wine bottles. These labels indicate where the vineyard was located, sometimes the vintner's name, the production date according to the year of the Pharoah's reign, and the quality of wine ("sweet," "good," "very good," "very, very good"). This is an archaeological chemist's dream come true: an ancient vessel whose date of manufacture, place of origin, and contents are known.

What happened in early Egypt—the importation of wine and then the establishment of viniculture in the Delta—marked one of the first stages in the migration of the wine culture around the world. From its beginnings in Georgia and the mountains of the Near East, wine extends out in time and space. Egypt's network of trade and political connections probably led to the further spread of the Near

Eastern wine culture to Crete in Greece around 2500 B.C. The domesticated grapevine and winemaking was eventually carried to many other parts of the world: to Rome where select wines (especially whites) were produced in the first century B.C.; to southern France and up the Rhone and Rhine Rivers; and eventually to the New World, including, only recently, the Napa Valley. It is a remarkable story of a remarkable plant and its product intertwining itself with customs, religion, medicine, and economics throughout the world.

In the Final Analysis

Feasting and drinking do not stand alone, and we should never lose sight of how they were coupled with other human arts—music, art, dance, fashion, even athletics. We don't need to read Claude Lévi-Strauss or Mary Douglas to understand that special foods and beverages are fraught with symbolic meanings—social standing, religious beliefs, sexual significance. Marcel Proust was probably not far off the mark when he wrote in *Remembrance of Things Past*: "At the end of our lives, all we remember are the great meals we ate." To that we would add: also the great wines and other potables we have enjoyed.

Bibliography

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Dietler, Michael, and Brian Hayden, eds. Feasts: Archaeological and Ethnographic Perspectives on Food, Politics, and Power. Washington: Smithsonian Institution Press, 2001.

Katz, Solomon H., and Mary M. Voigt. "Bread and Beer: The Early Use of Coreals in the Human Diet." Expedition 28 (1986): 23-34.

McGovern, Patrick E. Ancient Wine: The Scientific Search for the Origins of Viniculture. Princeton: Princeton UP, 2003.

McGovern, Patrick E., Stuart J. Fleming, and Solomon H. Katz, eds. The Origins and Ancient History of Wine. New York:

McGovern, Patrick E., Donald L. Glusker, Robert A. Moreau, Alberto Nuñez, Curt W. Beck, Elizabeth Simpson, Eric D. Butrym, Lawrence J. Exner, and Edith C. Stout. "A Funerary Feast Fit for King Midas." Nature 402 (1999): 863-864.

McGovern, Patrick E., Ulrich Hartung, Virginia R. Badler, Donald L. Glusker, and Lawrence J. Exner. "The Beginnings of Winemaking and Viniculture in the Ancient Near East and Egypt." Expedition 39 (1997): 3-21.

McGovern, Patrick E., Mary M. Voigt, Donald L. Glusker, and Lawrence J. Exner. "Neolithic Resinated Wine." Nature 381 (1996): 480-481.

Patrick McGovern, PhD, is Senior Research Scientist and Adjunct Associate Professor of Anthropology at the University of Pennsylvania Museum. He has directed major excavations in Jordan, and has collaborated on projects throughout Europe, the Middle East, and Asia and produced seminal studies on the earliest chemical evidence of grape wine (ca. 6000 BC), barley beer, and Royal Purple. McGovern has recreated the "King Midas" funerary feast, the first time that a historic meal has been reconstructed from the chemical analysis of ancient organic residues. His books include Ancient Wine: The Scientific Search for the Origins of Viniculture and The Origins and Ancient History of Wine (first editor).

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