



THE FIRST VINTAGE

A molecular archaeologist traces the prehistory of our most celebrated beverage

By J. MADELEINE NASH

LONG BEFORE GRAPES GREW ON TRELLISES in Napa and Sonoma, long before vineyards flourished in Bordeaux and Bourgogne, a sophisticated wine industry arose along the banks of the Nile. From tombs, temples and palaces that date as far back as 5,000 years ago, archaeologists have uncovered clay amphorae

stamped with seals that name not only the contents (*irp*, or wine) but also the region in which the grapes were grown, the year in which the wine was produced, the owner of the estate and often some indication of quality, such as “good” and “very, very good.” And who is to say that wines like these cannot be made again someday, asks Patrick McGovern, a molecular archaeologist at the University of Pennsylvania Mu-

seum, including perhaps the mysterious elixir that supposedly drove Cleopatra mad.

Yet the ancient Egyptians were relative newcomers to the wine industry, says McGovern, whose new book, *Ancient Wine: The Search for the Origins of Viniculture* (Princeton University Press; 365 pages), traces the long prehistory of our most celebrated beverage. The earliest phar-

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Our Stone Age ancestors probably fermented wine by accident at first. Later they started making it on purpose

6000 B.C. ? ► EURASIA

Domestication of the Eurasian grapevine spurs the foundation of the world's first wine industry. Archaeologist McGovern thinks this occurred in Transcaucasia, eastern Turkey or northwestern Iran. This 18th century print shows three varieties of domesticated grape: red, white and blue



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Wine is produced in the Zagros Mountains. The oldest known wine-containing jar, from a site called Hajji Firuz, was identified by McGovern's team in 1996

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COURTESY METROPOLITAN MUSEUM OF ART NEW YORK

TRAINING THE VINE Grape growing and winemaking predate this 1400 B.C. Egyptian tomb painting by thousands of years

old jugs that hailed from the Zagros Mountains of present-day Iran. A few years later his lab identified some of the key constituents in a funerary feast held in about 700 B.C. in honor, some think, of King Midas. The feast, as re-enacted at a gala hosted by the University of Pennsylvania Museum, included a modern re-creation of Phrygian grog, a concoction McGovern's lab determined was part wine, part beer and part mead.

Now McGovern is hoping to solve the biggest mystery of all, which is where and when the Eurasian grapevine—the species from which 99% of the world's wine is derived—was first taken under cultivation. For unlike the ancient ancestor of modern corn, which has been traced to a valley in southern Mexico, the wild Eurasian grapevine grows across a broad geographic range. It is therefore possible, though McGovern thinks unlikely, that it was domesticated by several cultures independently. What will eventually help resolve the question, McGovern says, are ancient snippets of DNA from wine residues and shriveled raisins that have been excavated from archaeological sites throughout the Middle East.

There's no question that grapes would have made an attractive target for domestication by our Stone Age ancestors. As food, they are densely packed with

sugar and valuable for that reason alone. But in addition, McGovern thinks, ancient people were probably well aware of the fermentation process whereby yeast turns the sugar in grape juice into alcohol. Indeed, wild grapes frequently carry a dusting of yeast on their skins, probably transported by wasps and other flying insects, and will occasionally ferment right on the vine (birds sometimes become so inebriated eating wild grapes that they fall from their perches).

Still, it wasn't until about 10,000 years ago, when people began settling into permanent agricultural communities, that winemaking could turn into an extensive enterprise. Through trial and error, experts speculate, the world's first vintners would have learned to manipulate both the yeast that turns grape juice into wine and the bacteria that turn wine into vinegar. Among the key ingredients in the fight against the latter were

aromatic compounds found in certain tree resins. In the 7,500-year-old wine residues McGovern's lab identified in 1996, for example, was the clear chemical signature of resin from the terebinth tree, a type of pistachio that grows throughout the Middle East. Today only the Greeks still drink resinated wine, but the practice could become more widespread if McGovern's interest in re-creating ancient beverages catches on.

The reconstructed Phrygian grog was a lovely drink, McGovern dreamily recalls, "with a saffron taste that caught at the back of the throat and drew you back for more."

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PHOTODISC

aohs imported wine from the southern Levant, and before the occupants of that region became winemakers, about 6,000 years ago, they no doubt imported wine from their neighbors. In such stepwise fashion, McGovern suggests, viniculture (a term he uses to encompass both the growing and the processing of grapes for wine) spread from its point of origin in the uplands of eastern Turkey or northwestern Iran, eventually crossing the Mediterranean to fill the goblets of the ancient Greeks.

Just how and when this happened is still a mystery, but no one is better qualified to sift through the widely scattered clues than McGovern, a skilled scientific sleuth who wields the most powerful tools of modern chemistry in his search for the roots of ancient wines. In 1996, for example, his lab created a stir by finding dried traces of wine in 7,500-year-



3000 TO 2700 B.C. ▼ THE NILE DELTA

Egyptian pharaohs have "wine labels" stamped on amphorae that indicate the year, provenance and quality of their contents



3000 TO ► 2500 B.C. NEAR EAST

Winemaking is established in the vicinity of Shiraz, Iran. Among the buyers are the Sumerians, whose artifacts, like this bull-headed lyre, often depict scenes of wine ceremonies



2500 B.C. ► CRETE AND GREECE

Viniculture arrives in Crete and spreads north to the mainland. This Greek drinking cup, from the 6th century B.C., shows the god Dionysus bringing grapes across the Mediterranean

900 TO 600 B.C. ▼ MEDITERRANEAN

The Phoenicians and Greeks ship grapes and wine to their outposts. This ram-headed vessel, found in Turkey, was used to serve Phrygian grog



200 TO 100 B.C. CHINA AND NORTHERN EUROPE

General Zhang takes grapevine cuttings from Central Asia to the Chinese Emperor. The Roman Empire exports winemaking to the Provence region of France and up the Rhone and Rhine valleys

LEFT TO RIGHT FROM WINE: JAR, UNIVERSITY OF PENNSYLVANIA MUSEUM (3); ANCIENT ART AND ARCHITECTURE COLLECTION; UNIVERSITY OF PENNSYLVANIA MUSEUM



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