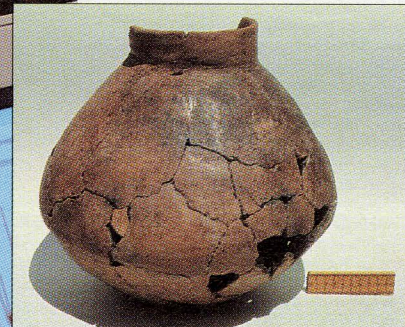


LEFT, PATRICK MCGOVERN OF THE UNIVERSITY OF PENNSYLVANIA WITH A SHARD OF POTTERY FOUND TO HAVE CHEMICAL RESIDUES OF WINE AT LEAST 7,000 YEARS OLD. BELOW, A RECONSTRUCTED VERSION OF THE JAR, FOUND IN IRAN, WHICH ONCE HELD THE WINE.



New Tests Find Evidence of Wine at the Dawn of Civilization

The oldest evidence for the existence of wine comes from at least 5000 B.C., or more than 1,500 years earlier than previously believed, according to a new research study published recently in the scientific journal *Nature*.

The earliest-known wine drinkers? They appear to have been neolithic villagers in the Zagros Mountains, in what is now northwestern Iran. Evidence of wine has been found in jars that were once placed along the kitchen walls of a mud-brick structure. The wine may have resembled Greek retsina.

Recent chemical and related tests of a yellowish residue found in the jars point to wine. First, salts of tartaric acid, found naturally in large amounts only in grapes, were identified. Secondly, resin from the terebinth tree, used in antiquity to preserve wine, was also discovered. Additionally, the jars had narrow necks and stoppers were found nearby, according to

Patrick McGovern, a research scientist in a branch of the University of Pennsylvania Museum, and one of the authors of the study.

The age of the site is based on charcoal samples taken and subjected to carbon-dating techniques. Their dating gives a range of 5000 to 5400 B.C. as the date when the wine was placed in the jars.

The jars were first excavated in 1968 and had originally been tested for milk products. The pottery was found in bits and pieces in the long-buried structures by Mary Voigt, who is currently an anthropologist at the College of William and Mary in Williamsburg, Va. They were kept in storage at the University of Pennsylvania Museum until McGovern, who has long been interested in the ancient history of wine, decided to take a second look. Five years ago, McGovern organized a conference at Robert Mondavi Winery in Napa Valley that presented

evidence, also from pottery, dating the first appearance of wine to about 3500 B.C.

Dating wine even further back will prove difficult, according to McGovern, because pottery-making in human culture has existed for only about 10,000 years. As it is, the Zagros villagers lacked the knowledge to make bronze or even copper. There's no doubt, however, that wine has been a key component of civilized life since man first began living in permanent settlements. The Zagros villagers at the site, called Hajji Firuz Tepe and set near the modern city of Urmia, were in the process of domesticating wheat and barley as well as cattle, sheep and goats when they made their wine. "Their houses were very well built and look much like what is there today. They are some of the earliest structures in the world," McGovern said.

What of the role of wine in the ancient culture?

"Presumably it entered into food preparation as an accompaniment for foods because of its location near the kitchen," McGovern said. "It may have also had some religious connotations because in later periods fermentation is seen as a magical process due to the bubbles and psychotropic effect. In this particular site we don't see any evidence of that but in later Egyptian culture we do see wine as part of religious rituals."

McGovern couldn't state whether the wine was made from wild or domesticated grapes or even if it was red or white. But the Zagros region does lie near the origin of *vitis vinifera*, the progenitor of European fine wine grapes, in the Caucasus Mountains of Georgia, Armenia and Azerbaijan. Museums in those three nations also have pottery that has yet to be analyzed for the existence of wine, according to McGovern.

—Kim Marcus