In the Annals of Winemaking, 5000 B.C. Was Quite a Year

By JOHN NOBLE WILFORD

Oenophiles might toast it as the first step toward civilization.

Neolithic farmers in what is now Iran had just settled down to village life, cultivating fields of barley and tending herds of goats and cattle. At about this time, around 5400 to 5000 B.C., they also learned to make the best use of wild grapes growing in their midst, and so became the earliest known vintners.

Archaeologists have found evidence for this in a yellowish residue left in the bottom of a pottery jar, found in the mud-brick ruins of a Neolithic village at Hajji Firuz Tepe, in the northeastern Zagros Mountains near the modern town of Urmia. The residue contains the earliest chemical evidence of wine, a team of archaeologists said in a report being published today in the Journal of the American Ceramic Society.

And since the jar was produced 7,600 to 7,400 years ago, the researchers noted, the discovery has given wine-drinking an extra 1,500 to 2,000 years of history. Until now, the earliest evidence for wine came from similar residues examined at Godin Tepe, which had been a Sumerian trading post around 5,500 years ago and is some 400 miles south of Hajji Firuz. Traders at Godin could also order beer.

The ceramic jar was excavated over two decades ago by Dr. Mary M. Voigt, who is now an anthropologist at the College of William and Mary in Williamsburg, Va. She found the jar in what appeared to be the kitchen of a square mud-brick building at Hajji Firuz. Only recently was it retrieved from storage at the University of Pennsylvania and the residue analyzed by infrared spectrometry and related chemical tests. This analysis was conducted by Dr. Patrick E. McGovern, an archeological chemist, and colleagues at the University of Pennsylvania Museum.

The researchers detected two telltale chemical traces. The residue contained the calcium salt of tartaric acid, which occurs naturally in large quantities only in grapes. It also contained resin from a widely distributed evergreen tree in the Middle East, Pistacia atlantica. This resin was widely used in antiquity as an additive to inhibit the growth of bacteria and thus prevent the wine from quickly turning to vinegar.

So the Neolithic tipplers must have drunk a wine similar to the Greek retsina of today. But Dr. McGovern said that the chemical tests could not determine whether the wine had been red or white, or from wild or domesticated grapes.

In their journal report, the researchers noted that pollen in sediments revealed that wild grapes were plentiful in the region, but said that “the wine in the jar might well have been produced from a precursor of the highly successful domesticated type still used to make most modern wine.” In any event, they said, the new evidence shows that wine was being made at the time people were establishing their first permanent settlements, based on domesticated plants and animals.

Dr. McGovern said in an interview that the fact that the farmers at Hajji Firuz had learned to preserve their wine with resin indicated they had already had many years of winemaking experience. But 7,000 or 7,400 years ago, he said, “is about as far back as we’re going to be able to establish the origin of wine.”