A civilized drink

Beer deserves to be treated as a civilized drink; it may even have been the cause of civilization. Although wild grapes and grain were probably both turned into drinks before either was cultivated, the latter seems to have been the beginning of farming, between 13,000 and 8,000 years ago. Humans ceased to be nomadic hunters and gatherers, and settled in organized communities to grow grain, but why?

In the Museum Magazine of Archæology and Anthropology produced by the University of Pennsylvania, Professor Solomon Katz in 1986 described as “the world’s oldest recipe” a series of tablets in the Sumerian language. These early accounts, with pictograms of what is recognizably barley, show bread being baked, then crumbled into water to make a mash, which is then made into a drink that is recorded as having made people feel “exhilarated, wonderful and blissful.”

The baking rendered the barley soluble, and was employed before man knew how to turn the grain into malt. Was the bread never eaten, but always made into beer? Did a diet of bread come first, or did man live by beer alone?

Katz points out that it is difficult to make appetizing bread out of barley. Perhaps the bread was never intended as anything other than an intermediate step in the production of beer, a nutritious and pleasant drink. By baking the grains into hard loaves, the ancients had created a partly processed resource that could be conveniently stored for later use, and easily transported, whereas fruits were edible only when they had been freshly picked, during their short season. The fruits could be turned into wine, but that lacks the protein value of beer.

Remnants of breweries, or relics showing or describing in detail the making and drinking of beer, sometimes listing a selection of different types, have been found in several parts of the fertile crescent that stretches around the converging valleys of the Rivers Euphrates and Tigris, between which lay ancient Mesopotamia, the region of Sumer and city-states such as Ur and Babylon. Similar relics have been found in other areas of ancient civilization, from the Nile Valley to Mount Ararat, and from modern Egypt to Iraq and Iran.

A seal around 4,000 years old is a hymn to a goddess of brewing, called Ninkasi (translated by Miguel Civil, of the Oriental Institute of Chicago), and suggests that the Sumerians by then knew how to make malt. Much of the evidence concerns beer as a drink of the gods and priests. A collection of these items is on show at the University of Pennsylvania Museum.

Work there by Patrick McGovern and others identified as traces of beer the residue found on a clay jar more than 5,000 years old. The vessel had been unearthed at a site in Iran by archeologists from the Royal Ontario Museum of Toronto. The site was a Sumerian outpost on the ancient trade route that became the Silk Road between East and West. This research was described in the British magazine Nature in 1992. Similar evidence 4,000 years old has been found on the western Scottish island of Rhum.

The hymn to Ninkasi has been used by the Anchor brewery of San Francisco for an essay into Sumerian
Each month, a new beer is left for the deity at this shrine at a brewery in Japan. All Japanese breweries and distilleries have such shrines. Beer's close links with religious belief echo through the ages. The word "ale" is thought to derive from "alu", an Old Saxon invocation of religious ecstasy.

In most of the traditional brewing countries, beer is seen as a part of the national identity. Royal courts assumed brewing rights in medieval times as a means of raising revenue, and some noble families are still in the business. Farmers and private brewers served their own taverns, then formed trade guilds. Finally, industrial capitalism gave the brewing business the shape it has today.

During this long history, wine and beer had no competition in Europe until the spread of tea from Asia and coffee from the Arab world between the 15th and 17th centuries.

The first extensive written work on brewing was produced in 1585 by the Bohemian Thaddeus Hajek, physician to the German Emperor Rudolf II. Most of the subsequent advances were in Bohemia, Germany, France, Belgium, the Netherlands, Denmark, Britain and Ireland.

The last major style of beer to be introduced was Pilsner, in Bohemia (then a part of the Austrian Empire), in 1842. The greatest milestone since has been the isolation of a pure-culture yeast, in Copenhagen in 1883. As an agricultural industry, and a form of cooking, brewing remains a craft and an art, as well as a science, despite technological developments.
Water

Once, every community in Europe’s beer belt brewed for its own use. In the days when much water was not safe to drink, beer had the health benefit of having been boiled.

No community can live without water, but it requires a far greater, and constant, supply to brew beer in any quantity. In the days before mains water, the availability of a very clean river or of springs, or the possibility of sinking boreholes into a reliable underground source, was essential if a town was to produce beer worthy of a reputation, and in sufficient volume eventually to trade. This was one reason why, from the 12th and 13th centuries, some towns began to be known for their beer.

Most of the oldest-established famous brewing towns were the sites of monastic communities, in or near regions where barley (and sometimes hops) grew well, but they were also distinguished by the availability and quality of their water. Long before the influence of different waters in brewing was understood, they were contributing to the evolution of these cities’ brewing styles.

This is true of České Budějovice (Budweis), Pilsen, Munich, Dortmund, London, Burton, Dublin and many other great brewing cities. Many breweries still have their own private sources, usually boreholes. I have encountered only one brewery, Lapin Kulta in Lapland, that takes its water from a river. In Belgium, the Rodenbach brewery pumps its supply from a lake that is filled by underground springs. On the Mediterranean island of Malta, where water is in short supply, the Farsons brewery has reservoirs on the roof to catch rain. At least one brewery in the Caribbean desalinates sea water.

A brewery is very happy if it has a private supply of water that is ideal for its style of beer, but that is no longer essential. Available water may have helped shape particular styles, but today, minerals can be removed from, or added to, the municipal water to produce any style of beer. Sadly, even some breweries with their own supplies are switching to town water. Wells and springs are being polluted, especially by farmers who use fertilizers. Some breweries take the precaution of filtering their water to neutrality, or even boiling off any minerals, then adding back such salts as they require.

Underground springs feed this ornamental lake, which in turn supplies the Rodenbach brewery, seen peeping through the trees.

The softness and delicacy of Bohemian lagers, and to a great extent those of Bavaria, are enhanced by the very low percentages of dissolved salts in the waters of those regions. The firmness of some Dortmunder lagers may be due to harder waters. Waters do differ greatly. The total salts in Pilsen’s water amount to 30.8 parts per million. At the opposite extreme, the figure for Burton-upon-Trent is 1,226.

Among salts that often occur in water, calcium, sulfate and chloride are of the most positive interest to brewers. Calcium increases the extract from both malt and hops during mashing and boiling, reduces haze, and decreases color. Sulfate enhances hop bitterness and dryness. Calcium sulfate in the water of Burton helped to shape pale ale as a style.

Chloride makes for a fuller texture and enhances sweetness. Chlorides are relatively high in London and Dublin, the original porter and stout capitals.