



Beer, Pottery, Society and Early European Identity

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ABSTRACT

Beer is not only a favourite drink for many archaeologists, but is increasingly the subject of their research. Brewing and beer consumption have played a significant role in prehistoric human cultures around the world. Beer was a tasty, nutritious food, a substance affecting the mind, medicine, a religious symbol, as well as a social medium and an accelerator. Alcohol relieved the pain and prevented the spread of infection. Beer was a safe and healthy drink compared to contaminated water. At the time when our ancestors began to domesticate agricultural crops, they commonly produced not only bread but also beer. It is probable that the first ceramic vessels in the Near East were created precisely out of the need to more effectively control the technological process of beer production. Similarly, in the Central European Copper Age, beer production and its growing social significance influenced the emergence of the set *Ceramic complex* that lasted continuously for more than three millennia. Beer has entered almost all aspects of social life, from everyday consumption and social interactions to initiation ceremonies and major religious celebrations. The study of beer and other fermented beverages sheds light on many aspects of the biocultural development of humans on this planet.

Résumé de recherche: Archéologies: La bière n'est pas seulement la boisson favorite de nombreuses archéologues mais elle devient de manière croissante le sujet de leur recherche. Le brassage et la consommation de bière ont joué un rôle significatif dans les cultures humaines préhistoriques à travers le monde. La bière était un aliment savoureux et nourrissant, une substance altérant l'esprit, un médicament, un symbole religieux de même qu'un outil et un accélérateur social. L'alcool soulageait la douleur, empêchait la propagation de l'infection. La bière était une boisson sans danger et saine contrairement à l'eau contaminée. À l'époque où nos

I would like to dedicate this paper to my parents Jarmila and Miloslav on the occasion of their 60th wedding anniversary.

ancêtres ont commencé à maîtriser l'agriculture, ils ont couramment produit non seulement du pain mais aussi de la bière. Il est probable que les premiers récipients en céramique du Proche Orient ont été créés précisément en raison de la nécessité de contrôler plus efficacement le processus technologique de production de bière. De même, au cours de l'Âge de cuivre en Europe centrale, la production de bière et sa signification sociale croissante ont influé sur l'émergence de l'ensemble du *complexe céramique* ayant perduré de manière continue pendant plus de trois millénaires. La bière a été intégrée à presque tous les aspects de la vie sociale, qu'il s'agisse d'une consommation quotidienne et d'interactions sociales ou de cérémonies d'initiation et de célébrations religieuses importantes. L'étude de la bière et d'autres boissons fermentées apporte un éclairage sur de nombreux aspects du développement bioculturel des humains sur cette planète.

Resumen: Arqueologías: La cerveza no solo es una bebida favorita entre muchos arqueólogos, sino que cada vez más es el tema de su investigación. La elaboración de cerveza y el consumo de cerveza han jugado un papel importante en las culturas humanas prehistóricas de todo el mundo. La cerveza era un alimento sabroso y nutritivo, una sustancia que afectaba la mente, la medicina, un símbolo religioso, así como un medio social y un acelerador. El alcohol aliviaba el dolor, prevenía la propagación de la infección. La cerveza era una bebida segura y saludable en comparación con el agua contaminada. En el momento en que nuestros antepasados comenzaron a domesticar los cultivos agrícolas, comúnmente producían no solo pan sino también cerveza. Es probable que los primeros recipientes de cerámica en el Cercano Oriente se crearon precisamente por la necesidad de controlar más eficazmente el proceso tecnológico de producción de cerveza. Del mismo modo, en la Edad del Cobre de Europa Central, la producción de cerveza y su creciente importancia social influyeron en la aparición del conjunto del *Complejo de cerámica* que duró continuamente durante más de tres milenios. La cerveza ha entrado en casi todos los aspectos de la vida social, desde el consumo diario y las interacciones sociales hasta las ceremonias de iniciación y las principales celebraciones religiosas. El estudio de la cerveza y otras bebidas fermentadas arroja luz sobre muchos aspectos del desarrollo biocultural de los seres humanos en este planeta.

KEY WORDS

Beer, Neolithic, Copper Age, Social interaction, European identity

Beer and Society

The festivities associated with drinking of alcoholic beverages entered the social life of the European farming communities some times during the 5th millennium BC as a new cultural phenomenon and continued to the present day. We can reconstruct the ancient celebrations according to occurrence of specialized drinking vessels. In different phases of the Eneolithic period, the ancient Europeans inserted the drinking vessels into their graves and collectively buried them as a feast for ancestors and votive offerings. These feasts were not just drinking opportunities without any deeper meaning. Such rituals were important for the functioning of society and reinforcement of collective identity.

Beer production has a much earlier pedigree. The rise of drinking rituals in Europe is documented in material culture since the beginning of the Eneolithic Period (4500–2300 cal. B.C.). It is also possible that the surplus product of barely made it possible to commonly brew the beer.

The evidence of alcohol in archaeological record is rather problematic. Alcohol is highly unstable substance and cannot be identified in archaeological contexts. Recently, the methodology has been developed for experimental analysis of starches transformed through fermentation during processing and brewing of beer (Wang et al. 2017). However, in the archaeological record we are still dealing only with indirect evidence of beer brewing. These are mainly the remains on pottery that are presumed to be materials for beer production. They are remains of barely, fruits or even milk (Guerra-Doce 2006; Cramp et al. 2014; McGovern 2009).

Despite the evidence of cereals and milk lipids residues in Late Eneolithic pottery, it is not a clear evidence of alcohol consumption. However, the overall nature of the drinking sets in the graves of this period and the current knowledge of the structure of society lead us to believe that the consumption of alcoholic beverages produced by fermentation of cereals or milk is more likely than that milk and cereal slurries were stored in the pots and cups.

For the Proto-Eneolithic Period, we can also trace certain shape and volume groups in the collection of the tulip-like beakers that represent a specific type of Michelsberg drinking vessel. Beakers of the early phase of the Michelsberg Culture occur in both large and small volume categories. Beakers of the later phase occur in several types, and according to them, they are divided into two size groups. The volume distribution of the Michelsberg beakers, regardless of their type, confirms the division of these

ceramic shapes into two size groups. However, we do not have data that could help to interpret the structures found more accurately (Křišťuf and Turek 2019).

Beer and Beginning of Agriculture and Pottery

Brewing beer is a cultural phenomenon of very old pedigree. Progressive changes in farming and an increase in the production of cereals (especially barley) since the Early Neolithic enabled more or less common beer production. Beer production was an effective way to turn excess barley into a higher value commodity. This does not mean the sale of beer, and this certainly did not happen in prehistoric times, but an invitation to a beer party can be a way to reciprocally acquire a workforce that again has its economic significance (Neustupný 1998). Drinking festivities have thus become part of the cult and social communication of our ancestors.

Already Vere Gordon Childe (1939, 213; Guerra-Doce 2015) assumed the connection between drinking beer and the rapid spread of Bell Beaker phenomenon in Europe during the 3rd millennium BC and their widespread social adoption. Brian Hayden (Hayden et al. 2012) recently introduced his theory that agriculture, especially the cultivation of cereals, spread from the Near East more than ten thousand years ago, mainly due to drinking beer. The locals learned to make this drink from the wild ancestors of today's cereals, which, according to Hayden, led to the domestication of these crops. In other words, agriculture was created so that our ancestors could drink beer. Andrew Sherratt, a specialist in prehistoric psychoactive substances (Sherratt 1991), also argued that: “the discovery of fermentation did not necessarily have to be the result of growing cereals, because it also requires knowledge of malting and yeast use” (Sherratt 1995, 24).

The prevailing view is still that beer emerged as a side effect of the domestication and cultivation of cereals (Vencl 1994). However, the transition to agriculture does not seem to have been triggered by the effort to obtain better and more accessible food; it was more of a response to population growth amongst the late Palaeolithic communities of south-east Anatolia and Levant. The earliest farmers had to pay for this revolutionary change by a deterioration in health and more demanding subsistence strategy. A number of diseases of civilization, such as tooth decay, were related to the retreat from the hunting and gathering way of subsistence and to the consumption of cereals. Drinking beer was one of the more pleasant consequences of the demise of the world of Palaeolithic hunters and gatherers.

Wild varieties of Neolithic cereals have their natural range not in the valleys of the large rivers of Mesopotamia, but on the slopes of the Zagros Mountains (present-day Kurdistan) and south-eastern Anatolia (present-day south-eastern Turkey). Discoveries in south-eastern Anatolia in the area between the upper Euphrates and the Tigris (Heun et al. 1997; Hauptmann 1999; Schmidt 2006; Sagona and Zimansky 2009) even suggest that the area of earliest Neolithic domestication can be greatly narrowed. The Zagros Mountains in Kurdistan with early Neolithic sites such as Jarmo (Matthews et al. 2013) and the Jordan Valley with Jericho have also been considered as sites of earliest Neolithic cereals, but it appears that the first grains have been domesticated and managed within an area delimited by sites of Göbekli Tepe, Nevali Çori and Çayönü.

However, the natural occurrence of suitable plant and animal species and optimal climatic conditions would probably not be enough to trigger a change of such considerable impact. It was mainly increasing population density within the hunter/gatherer Natufien Culture with long-term stable settlements, which meant a significant development of social relations, as well as contact with neighbouring and perhaps to some extent intrusive migratory populations. Lewis Binford (1968) characterized this situation as an adaptive tension and motivation leading to the application of more efficient technology, or in this case a new subsistence strategy in the domestic and incoming population. Thus, by neolithization, man did not solve his own struggle with nature for survival, or for its control, but for competition within the growing population of his own species.

The cradle of the European Neolithic and, in fact, of the whole of European civilization, was the area of the so-called Fertile Crescent, which included a narrow strip of land from northern Mesopotamia through the Zagros Mountains and eastern Anatolia in Turkey and along the Mediterranean coast to the south of Levant. As mentioned above, the key was the very limited area between the sites of Göbekli Tepe, Nevali Çori and Çayönü around the “black mountain” of Karaca Dag in south-eastern Anatolia. People in this area subsisted on the collection of rich sources of wild ancestors of wheat and barley (double-row barley, single-grain wheat and double-grain wheat), which naturally led to their deliberate sowing and active cultivation. At the same time, in some Neolithic centres, the first domestic animals (cattle, sheep, goats, pigs) were also domesticated, while other localities testify to cereals supplemented by hunting. In the area of today’s western Iran, south-eastern Turkey and Israel, there are a number of important sites with evidence of the first agricultural production. The need for change of subsistence arose from the population growth in increasingly settled Late Palaeolithic communities, already living in the fully postglacial climate. The declining mobility of the population had the effect of increasing the fertility rate, and the increase in the population

gradually required the stabilization of subsistence, i.e. ensuring a constant food supply and the possibility of building up stocks. Such a way of subsistence strategy certainly meant a much more labour and, as a result, a reduction in the quality of nutrition and a deterioration in the health of the population.

In order to maintain the path of population increase, people needed a kind of “Neolithic strategy for sustainable development”. It was no longer possible to get off this train of increasing reproduction and development of social interaction. This development triggered a real population boom, which further enabled the emergence of new and larger communities with a higher degree and complexity of social relations and the growing need for civilization. For the Neolithic population, the domestication of animals and agricultural crops meant, above all, the stability of food supplies and the shortening of the distances they had to cover in securing it.

The motives for the transition to a sedentary lifestyle and agriculture have been debated for many years (Bellwood 2005). So what compelled humans to leave the affluent society (Sahlins 1974, 139) and to begin, in many ways a painful, journey to civilization and the overpopulation of its kind? I believe that this was not primarily an attempt at civilizational progress, but a kind of instinctive imperative to the reproduction of human species and control of nature. Whether it was an evolutionarily inevitable development or a divine inspiration, the result was not only a change in the way of life, but also the new ideology and cosmology of the first farmers. There are even theories that suggest that it was the new ideology and collective creation of monumental shrines (Göbekli Tepe, Nevali Çori) that led communities in south-eastern Anatolia to domesticate grain (Mithen 2003, 67). This hypothesis, which is still difficult to verify, assumes that a large number of proto-Neolithic hunting and gathering communities get involved in the construction of the stone monument in Göbekli Tepe. They had experience with the natural occurrence of single-grain wheat originating in this area. In view of the large accumulation of the population during the construction of the monument, there was a need to intensify and control the availability of this harvested crop, which in turn could lead to the original domestication of grain and the spread of this crop and knowledge of its reproduction to more distant communities. The celebration of the deity could thus stand at the very beginning of agriculture (Lewis-Williams and Pearce 2005).

Klaus Schmidt (2006) believed that Göbekli Tepe (see Figure 1) was the central sanctuary of the cult of the dead and death. Although no funerals have been found here yet, Schmidt was convinced that they can be hidden in the niches and walls of sacred circular structures. The location of the site within the region, which was most likely the area of primary domestication of single-grain wheat, is also significant. These are the findings from



Figure 1. Göbekli Tepe, south-eastern Anatolia. More than 11,000-year-old circular sanctuary with monolithic pillars (photograph by M. Bárta)

Mount Karaca Dag, just 32 km from Göbekli Tepe, which geneticists consider based on the DNA analysis an evidence of the first breeding of domestic single-grain wheat in places where its wild ancestor naturally occurred (Heun et al. 1997, 1312–1314). Beer consumption could thus be part of special religious gatherings in which more or less distant communities hosted each other and, following the example of the Indian “pipe of peace”, affirmed alliance and cooperation (Dietrich et al. 2012; Dietrich and Dietrich 2020). It is therefore possible that the domestication of grain did take place mainly in connection with a large population accumulation, a shared ideology and the construction of multi-communal shrines (cf. Mithen 2003).

Domesticated Brewer’s Yeast as Living Artefact

Saccharomyces cerevisiae, also known as brewer’s yeast, has been used to make beer for thousands of years and is genetically distinct from the wild yeast. One can almost say the beer yeast was domesticated by people in the similar way as many other wild species plants and animals, during more than the last 10,000 years. Fay et al. (2019) attempted to reconstruct the pedigree of brewer’s yeast by analysing its genome. They discovered that the genome of brewer’s yeast is actually derived from a combination of the

yeast strains used to make European grape wine and the yeasts used to produce Asian rice wine. Brewer's yeast is known for its strong fermentative characteristics that, in the presence of oxygen, allow it to convert sugars from carbohydrate into alcohol. It has the ability to competitively dominate other species in high-sugar and low-nutrient environments. One could say they kill all the bad bacteria and control the overall process of fermentation. Most beers, especially Western beers, are one of the two types: ales or lagers. Cell division within the yeast (and the temperature) is essential in determining the beer's flavour. Fay et al. further state that: "Genome changes that occurred during cell divisions have had a clear impact on subsequent beer strain diversity and have likely played an important role in specialization to various brewing styles" (Fay et al. 2019).

Wild yeast strains work in different ways than domesticated brewer's yeast, from the temperatures at which their mitochondria undergo fermentation to the ways their cells stick together, determining whether the yeast will rise to the surface or sink to the bottom during fermentation (the upper or bottom brewing method). While tracing the origin of brewer's yeast has several unique characteristics that allowed it to remain relatively isolated from other species, Brewer's yeast is polyploidy, meaning it has three or four copies of the genes in its genome. Because it is polyploidy, brewer's yeast does not easily combine naturally and exchange genetic material with its wild ancestors. Fay et al. suggest: "Polyploidy provided the yeast strain with a means of remaining isolated from other populations and provided us with a living relic of its ancestors". The modern brewer's yeast is derived from a melting pot of fermentation technology, resulting from an East–West transfer similar to the spread of domesticated plants and animals by way of the Silk Route, thousands of years ago (Fay et al. 2019). In the chemical quest for beer production traces in prehistoric pottery vessels, we have not many clues to analyse. The hop can leave bitter acids (Vladimír Filip, VŠCHT, Prague, personal communication 2020), but in the European beer tradition the hop was not in use until the High Middle Ages.

Beer and the Invention of Pottery Vessels

With the discovery of pottery and the beginnings of brewing beer, it's a bit like a question of what occurred first, whether eggs or hen? It is generally believed that the invention of ceramics in the Near East enabled the common brewing of beer (Turek 2005). However, we have to bear in mind that evidence of malting and the oldest brewing dates back to the late Palaeolithic Natufian period (Raqaefet Cave, Israel 13,700–11,700 BP, Liu et al.

2018; or Shubayqa 14,600–11,600 BP, Arranz-Otaegui et al. 2018). The whole argument can therefore be reversed and it can be assumed that the development of beer brewing in the Levant initiated a technological innovation of the introduction of ceramic vessels. The innovation was mainly related to the malting process, i.e. the recovery of sugars from cereal starches, which is a process that is very demanding to maintain at a precise temperature of 45–70 °C for up to one hour (Guerra-Doce 2020, 66). Here, the method of using an organic container and inserting heated stones into the infusion seems less effective than bringing the ceramic vessel closer to the fireplace. Perhaps it was the production of beer that could have been the impetus for the beginning of Neolithic ceramic production.

Pottery Complex and Drinking Ceremonies

The famous Beaker pottery is part of much greater artefactual symbolic system that was dominating the pottery production in central Europe from 4500 BC till at least 700 BC. Evžen Neustupný presented this concept as the Central European Eneolithic-Bronze Age pottery complex (cf. Neustupný 1995). Such a complex consists of: large storage jars, amphorae, pots, handled pots, jugs, beakers, one handled cups and bowls (see Fig-

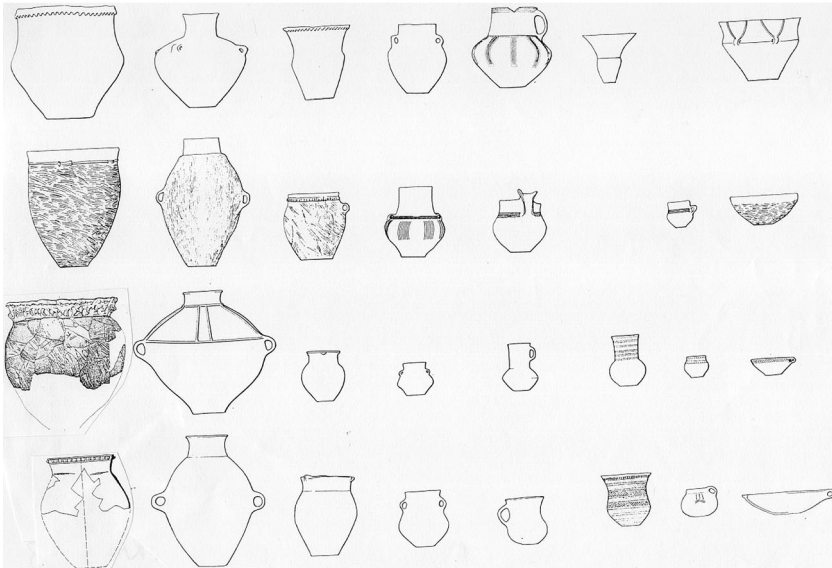


Figure 2. Central European Eneolithic-Bronze Age Pottery Complex introduced by E. Neustupný (after Turek 2005)

ure 2). These types of pottery were created for specific purposes, but at the same time they became a distinctive cultural phenomenon. People in the earlier Neolithic period, as well as later in the Iron Age, Roman period and early Middle Ages did not use all such pottery types, especially jugs, amphorae and beakers were unknown. Also looking through the Copper Age/Bronze Age pottery assemblages of Western or Eastern Europe we would hardly find a matching set of pottery types. This makes the pottery complex specifically Central European phenomenon.

Some pottery types were specifically used for storing and drinking alcoholic beverages, namely beer. The collective consumption of alcohol played an important role in social communication and the creation of hierarchies at the time of early European farming (cf. Sherratt 1987; Vencel 1994). Therefore, it is possible to assume that some of the drinking pots were also used as the attributes of particular social status and represented differences between social categories.

Also the perfect finish and rich design of bell beakers differentiate this luxurious (and perhaps ceremonial) pottery from the rest of the pottery production (see Figure 3). In most cases, the beakers are covered all over their surface. It may be significant that the decoration is always arranged in horizontal bands that might have marked the levels of drink inside during some collective drinking ceremonies. Andrew Sherratt (1987) considered the possibility of ritual consumption of alcoholic or narcotic beverages. Such an interpretation is not exceptional in the context of Cen-



Figure 3. Decorated Bell Beaker from Bohemia (photograph by J. Turek)

tral European Copper Age. The ceremonies involving consumption of alcoholic beverages became an integral part of social communication in Europe the beginning of the Eneolithic period (after cal. 4500 BC) and to a certain extent it survived as a cultural phenomenon of Western society till the present day.

The evidence of drinking rituals and feasts may be seen already in the pottery drinking sets of the Proto-Eneolithic (after 4500 cal. BC). Such events played an important role in creation and reinforcement of collective identity within communities, as well as communication with other communities. The first jugs were used in the Jordansmühl Culture in Central Europe and later the very specific tulip beakers of the Michelsberg Culture. As I suggested earlier, brewing of beer was a very effective way to turn excess barley into a commodity of a higher value. As the nature of beer brewing leads to large volumes, people used to invite the family and kin to collective beer drinking feasts, expecting a certain reciprocity. Neighbours invited for such a beer feast might as a reward offer their work power or the accept the social and economic superiority of the host. Ceremonial drinking had great potential in social communication within prehistoric communities, including strengthening social ties within the community, as well as emphasising its collective identity.



Figure 4. Michelsberg Culture tulip-like beaker (photograph by J. Vrabec MMP)

Considering the pottery production of the Bell Beaker period, there are certain types of pots suitable for direct drinking, such as one handled cups and small jugs, but the shape of bell beakers does not seem to be suitable for the consumption of liquids. Bell beakers, as well as for example earlier Michelsberg Culture tulip beakers (see Figure 4), have sometimes extremely everted rims, that make direct drinking almost impossible. Such pots may have been used as containers or vessels for manipulation of liquids prior to their consumption, or they were designed for drinking using a straw, such as it is known from beer drinking scenes of ancient Mesopotamia or Egypt.

Therefore, I believe that the impetus for the creation of the ceramic complex may have been the growing social importance of beer production and drinking ceremonies. Looking at the new ceramic shapes in the range of vessels of Eneolithic agricultural communities, it is clear that they are containers for liquids and their handling (including brewing): large storage jars, amphora, small amphorae and containers for pouring and consuming liquids: jug, cup and mug with handle. These containers are probably related to a certain degree of specialization in beer production, but also to the formalization of its consumption.

Better understanding of some of the functions of the new ceramic shapes can be made the mashes possible by reconstruction of traditional technological methods of beer production. After the grain germinated, the raw material was shredded, i.e. lightly ground on a grinding stone. In the next stage, a large open ceramic vessel enters the production process, probably the so-called storage jar (hopper), in which wiping is first performed (mixing with water creates slurry) and then cooking at a controlled temperature. Whether the cooking temperature was maintained by inserting heated boulders into the brine or by an external heat source through the wall of the vessel has not yet been clarified. This is followed by draining, probably through a sieve with textile filtration, to form wort, which is further boiled in an open container and hopping can then take place (beer flavouring, not necessarily using hops) to form wort, which needs to be cooled and then “bottled” and fermented. Here, it is possible to imagine the use of amphorae, into which the cooled wort was fused to ferment for at least a week. Of course, fermentation could also take place in open tanks, so-called fermentation with an open cellar. However, the amphorae, with their bulbous shape and narrow neck, seem to be an ideal container for fermentation, suspended transfer, or possible cooling by hanging in a stream, but also for pouring and dosing. The covering of the mouth of the amphora at the time of fermentation may be related to small lugs on the neck of some amphorae known from the period of the Funnel Beaker (TRB) and Corded Ware Cultures. This could be related to the fastening of the mouth cover, or to the fastening of the cooling wrapping, as was per-



Figure 5. Corded Ware amphora from Slaný, Central Bohemia (photograph H. Toušková)

haps the case with the amphora from the sanctuary of the Bell Beaker Culture in Brodek near Prostějov (Grömer et al. 2017), where the amphora was wrapped in textile.

At least on the basis of the funerary assemblages of the Corded Ware Culture in Bohemia, it can be assumed that amphorae (Figure 5) are not a gender-specific artefact, in contrast to typically female egg-shaped pots (Turek 1990). Thus, amphora manipulation and use appear to have been available to both men and women. The fact that amphorae also appear in children's graves (Turek 1990, 2011) suggests that the placement of an amphora in a grave may not have been a reflection of the practical use of the artefact in the living culture, but mainly an expression of the importance of the vessel and even more of the beverage in relation to the ancestors. Thus, it seems that the drink (perhaps beer) was an important part of the symbolic system and social organization. All this would fit quite well into the model of social significance of beer production, drinking festivals and their transfer to the ceremonial level of social and religious rituals.

What does the volume range of the Corded Ware amphorae tell us? As Filip Laval (2001) demonstrated, the volumes of amphorae recorded in

Corded Ware cemeteries in the Czech Republic range from 4.3 to 28 L for adults and up to 7.85 L for children. Most amphorae have a content of 11–13 L and another not quite clearly defined cluster is around the content of 15 L. In the case of beer, this volume could well correspond to one batch. Amphorae occur in 36% of the graves of men, 21% of women and 17% of children. It is therefore a vessel that is in the funerary context associated with all gender and age categories. However, it should be borne in mind that the amphorae volumes are different for children and adults. Children's amphorae reach a median of up to 5 L, while in graves of adult men and women it is around 17 and 15 L, respectively (Dzbynski 2010, Abb. 2, 2004). The size of the amphorae seems to be related to the fermentation, storage and transport of the beverage rather than to its brewing production. It is also more likely that the volume of the drink corresponded to certain customary norms of consumption and hospitality (in the case of the analysed funerary ceramics in terms of ancestral hospitality in the afterlife), rather than individualized capacity depending on the person buried.

The so-called storage jars could probably be related to beer brewing, which we know only very sporadically, especially from the period of Corded Ware (due to the absence of settlement contexts), and we do not even know their possible gender connections, because they do not occur in the burial assemblages. One of the most complete specimens of this vessel from Bohemia comes from a natural sanctuary on the Bacín hill (Vinařice cadastre, Beroun District), which probably represented a sacrifice thrown into a rock fissure (Matoušek and Turek 1998).

Beer as a Part of Social Status

We have already mentioned the importance of beer as a commodity, which since the Neolithic Period has helped to obtain an economic product from the surplus of cereals and has thus become an important means of economic and social communication of the first farmers. However, at least since the beginning of the 4th millennium BC, there was a further development in the social significance of beer (and alcoholic beverages in general). Drinking beer, which had been a collective activity since its inception, became one of the most important ceremonial activities of Eneolithic farmers. The drinking of alcoholic beverages began to be considerably formalized not only by the introduction of specific brewing and drinking vessels (the pottery complex), but probably also by the institutionalization of the feasting itself. Alcohol as a valuable commodity in itself proved the social

status of a member of the community, but it also became a kind of symbol of social status. We can assume that the drinking vessels in the burial assemblages of the 3rd millennium BC Beaker cultures were to some extent associated with the demonstration of the social category of man as warrior, and are thus symbolically as important as Eneolithic formalized warfare (Turek 2017). These elements of the burial rite clearly demonstrate the masculine ideals of the Eneolithic period, which is often characterized as patriarchal (Neustupný 1967). This demonstration of male drinking is manifested in the archaeological record precisely in the period of individualized funerary rites of the Beaker cultures, but the origin of this idea must probably be traced back to the very beginning of the Eneolithic Period. The so-called tulip-like beakers (Figure 4) and other drinking vessels are repeatedly found in the Michelsberg causewayed enclosures (see Křišťuf and Turek 2019 with further references). Another proof of the ceremonial drinking ceremonies is the hoard deposits of ceramic drinking sets. A remarkable find of this type is a ceramic hoard of the Baden Culture (3500–3300 BC), which consisted of twelve smaller drinking jugs with a highly extended handle, so that they can be easily used for dosing the drink from a large storage vessel of the same shape (Figure 6), which apparently



Figure 6. Baden Culture drinking set from Dřevčice, Prague-East District (photograph by V. Daněček, old exhibiton of the National Museum in Prague)

originally contained a drink that people consumed collectively and probably ceremoniously, and eventually sacrificed the entire ensemble to the gods or spirits of their ancestors by burying it underground.

Gender Differentiation of Prehistoric Beer Drinking

It follows from the above that alcohol consumption has traditionally been related mainly to the male world. However, it is necessary to address the question of the extent to which this is an ideological declaration of gender differences in prehistoric society and whether drinking alcohol was really an exclusively male activity. It should be borne in mind that in most pre-industrial societies, it is women who monopolize the production of alcoholic beverages and dominate their distribution systems (Heath 1991; Guerra-Doce 2020, 71).

It is probable that the manner and level of alcohol consumption were also defined by social norms, which could be formally expressed in the gender-specific decoration of ceramics. Some of the cups of the accompanying pottery of the Bell Beaker Period were decorated with small nipple-like protrusions, which are usually placed in pairs on either side of the root of the handle. A kind of male counterpart of this female motif can be plastic “moustaches” growing directly from the root of the cups handle, or there is also a motif of an inverted letter “Y”. Both (male and female) motifs usually do not appear on the same vessel, which underlines their symbolic opposition. It is possible that this is really a representation of sexual attributes and thus a kind of pictogram of the male and female element, denoting gender-specific ceramic individuals. In cases of the known burial gender context of these cups, the relationship of the moustaches and Y motifs to the male gender position of the skeleton in the grave was documented and, conversely, nipple-like protrusions were on vessels in women’s graves (Turek 2002, 222–223, Figs. 1–2).

As we have noticed in the case of amphorae and jugs of the Corded Ware Period or in the case of cups of the Bell Beaker Period, drinking vessels occur in both male and female burial assemblages (Turek 1990; 2008). Differences are, however, evident in the capacity of bell beakers in the graves of women and men in Great Britain and Ireland (Case 1995; Brodie 1998; Turek 2006). The largest beakers came from the graves of men, the medium size came from the graves of women, and the smallest beakers were in the graves of children. The reflection of alcohol consumption in the burial rites of the 3rd millennium BC therefore probably included both main gender categories, including children, but this speaks more about the relationship to the ancestors and the world of the dead and it is not clear

to what extent public drinking by women and children in the living society can be expected.

It is therefore possible that even in European prehistory women commonly consumed alcohol, but perhaps not publicly and ceremoniously, like men. It is reminiscent, for example, of a public demonstration of the faith by Muslim men and the rather intimate, domestic prayer of Muslim women. Similarly, for example, Yemeni men chew the kata stimulant in public, but women only in the privacy of their home. And as for the traditional consumption of alcohol in our society, even in the generation of our grandmothers and especially in rural areas, it was not appropriate for a woman to attend pubs and consume alcohol in public, but this did not mean that she did not drink alcohol alone or at home with other women.

When we emphasize the link between drinking and the male gender role in society (Figure 7), it should be remembered that in many traditional cultures of the world the consumption of alcohol and stimulants is mainly related to the male world and these substances are available to women only to a limited extent and often only under male control. This sexist archetype survived in Western civilization until the time of female emancipation in the last century. In this context, it is worth mentioning the old Babylonian motifs on documents related to pubs (which also acted as brothels, see Damerow 2012), which depict a copulating couple, in which a woman simultaneously drinks through a reed straw from a beer jar (Figure 8). The



Figure 7. Bell Beaker beer drinkers (photograph by J. Turek, courtesy of Museo Arqueológico Madrid)



Figure 8. Old Babylonian motif with erotic beer scene (after Damerow 2012)

whole motif, which formally depicts a socially intelligible scene for the Babylonian society, can also be interpreted as a symbol of male, phalocratic dominance, which includes the “right” to sex and beer.

Variability of Consumption Volumes

A metric analysis of 122 Bell Beaker cups and jugs from north-western Bohemia (Turek 1998, 108–109, Fig. 5) showed the division of these containers into at least three capacity groups (0.1–0.2 L, 0.3 L and 0.6–0.8 L). Such division may, on the one hand, reflect the function of the container or the type of beverage for which it was used. At the same time, the capacity of the vessels could take into account the age and gender category of the person who used it and was buried with it. As already mentioned,

studies by H. Case (1995, 58) and N. Brodie (1998, Fig. 2) suggest differences in the contents of British and Irish bell-shaped cups found in the graves of children and adults, but also men and women.

Differences in the size and content of German bell beakers were explained by Sangmeister (1989) by regional variability. In comparison, the Central German beakers appear larger than those from the Rhine region. Sangmeister commented with some exaggeration on this finding, saying that more beer is still drunk in Saxony and more wine in the Rhineland. Although Rhine wine in the 3rd millennium BC cannot be expected, the essence of Sangmeister's reasoning is correct. Although the style of the beakers and the canon of their decoration in both regions are based on the same roots, the social norms of their use may have been different. Thus, the different capacity of the containers could be related to regional differences in the type of beverage or to differences in cultural norms of consumption.

Ceremonialization of Drinking

Collective consumption of beer and alcoholic beverages in general has become part of social interaction and as such has been transferred to the relationship with ancestors and probably also to communication with the gods. Deposits of individual vessels (Bacín–cord ceramics, Matoušek and Turek 1998) or even sets of drinking vessels (Dřevčice—Baden drinking set, Figure 6) are probably related to religious practices in the form of sacrificing alcohol. Bell beakers are also thought to have been used for ceremonial drinking, and their archetype has been transferred to later gold wrought cups of the Early Bronze Age known from England, Brittany, Switzerland, the Rhineland and Lower Saxony (Needham 2006; Turek 2013). It seems that although the use of ceramic bell beakers has disappeared from material culture, these archetypal “beakers” of precious metal have still been used for ceremonial purposes of the highest importance. As we know from the Christian liturgy, the consumption of wine from a ceremonial drinking vessel—a chalice—is an important symbolic act, and religious wars were fought for the right to receive from this vessel in the Middle Ages.

Ancestral Feasts: The Social Phenomenon of European Drinking Festivals

With the evolving culture of drinking alcohol, forms of feasting with different levels of social significance also developed. An invitation to a beer feast could help to recruit a workforce, which has its economic significance,

especially in terms of building community solidarity (Celebratory Feasts; see Hastorf 2017, 197). Of course, drinking alcohol was tied to various social events and ceremonies, such as bridewealth or sealing the peace in the manner similar to an Indian pipe of peace. Such a feast could also have an alliance-binding significance between patrons and their clients (Alliance Building Feasts; see Hastorf 2017, 199). The complexity and time-consuming procedure of beer production (and production of other alcoholic beverages) meant the creation of prestigious goods, which in some societies became a symbol of power (Sherratt 1987). Beer production, a demanding and lengthy process, has always led to batches of larger volume. The produced drink did not have a long life, so it is quite natural that its consumption took place collectively, with relatives and kin taking turns in organizing the festivities and inviting each other to them. Here, we can seek for the roots of why drinking alcohol is still a social event even today.

Banquets could have a number of functions; they strengthened relationships within the community, strengthened its group identity or functioned as a gift or binding attention. The generous invitation to an alcoholic beverage party was intended to demonstrate the economic or even political power of some members of the community. With the growing social stratification of the Iron Age, there was a deliberate formalized demonstration of power in the form of gigantic feasts with large amounts of alcohol (1100 L “wine” fit in the “Princess” crater of Vix), such feasts can be classified as clearly socially competitive (Competitive Feasts; see Hastorf 2017, 203).

In the Iron Age, a system of so-called gift and debt can be observed at various levels, in which important warriors consolidated their social position and committed the other members of the community to themselves. This social practice developed especially in the Iron Age, when nobles built their military retinue in a similar way, which in the fourth and third centuries BC plundered important centres of the ancient Mediterranean world. But rich banquets with lots of beer did not only serve to strengthen relations between the living. The nobles of the Early Iron Age were buried in timber tombs (most important nobles on funerary chariots) under burial mounds, which contained a large funerary feast. Who was the feast for? Mourners like a funerary banquet? To the deceased on his/her long journey to the underworld? In the Iron Age (and likely even earlier), people apparently believed that when entering the world of the dead, they would meet their ancestors and heroes, to whom they wanted to present themselves with the richness of a funeral feast, which would prove the social status and prestige of the deceased.

Tradition of European Drinking Identity

Apart from the undeniably devastating effects of alcohol addiction, it can be said that alcohol is still an important cultural and communication phenomenon in many societies of the world. We drink at weddings and funerals; we drink to celebrate the birth of child, the completion of construction or studies, but also the conclusion of a business contract. It is no exaggeration to say that the production and drinking of alcoholic beverages is part of European identity as an integral element of cultural behaviour. Alcohol is part of social communication and helps structure our world.

But why is drinking a European tradition (Figure 9)? As demonstrated above, two closely related answers are offered. On the one hand, Europeans have the physical potential to break down alcohol and not be intoxicated by consuming it in terms of reasonable doses. This ability was not always available to the people of the Old World; it was probably acquired only during the last 10–12 millennia, precisely in connection with the use of wild cereals and later with the transition to cereal farming. The second premise of drinking culture is related to this long-term “training” in alcohol consumption: the social aspect. As we have already indicated, the ancient Europeans and their Near Eastern ancestors used not to drink alone. Larger volumes of beer batches required a certain degree of cooperation and reciprocity. An important part of their drinking festivities was social communication. They have therefore developed a certain, age-tested ability to estimate how much alcohol needs to be prepared and how much they can bear to drink. They created social norms that shaped a kind of European drinking etiquette. In contrast, for example, the original inhabitants of America, Australia or Siberia were not physically or socially prepared for alcohol consumption. Although most Native Americans had experience with various stimulants, their metabolism was not prepared for the breakdown of alcohol.

For hunters and gatherers, the consumption of fermented beverages was fully seasonally linked to the growing season of wild plants, and any products had to be consumed immediately, even solitarily. So most of hunters and gatherers did not even know the concept of safe social alcohol consumption. Only agriculture has made it possible to fully develop stockpiling and year-round production and consumption of alcohol (Guerra-Doce 2020, 70). Aboriginal reserves in Australia are still banned from bringing alcohol. When alcohol occurred in their vicinity, Aborigines tend to drink themselves as much alcohol as possible, and sharing alcohol with other members of the community usually did not make sense to them (personal statement by Garry Jackson, Flinders University, Adelaide 2007).



Figure 9. Beer as a reflection of the European Identity: replica of a Salzmünde jug of the Funnel Beaker Culture (photograph by J. Turek)

It should be recalled that until the Industrial Revolution, the European cultural norm was exclusively collective drinking, and it was not until the time of capitalism that this custom began to disintegrate with the new phenomenon of solitary worker drinking.

Thus, drinking alcohol is to some extent a natural cultural expression for today's Europeans and parts of the world colonized by their ancestors. In some cultures of the world, inhalation of narcotics or chewing kata, betel, coca and other stimulants is a similar phenomenon. For Europeans, however, it is precisely alcohol that has also become an essential part of the Christian liturgy in the form of consuming wine as the blood of Christ.

Acknowledgements

My thanks go especially to Elisa Guerra-Doce (Madrid), Alex Gibson (Bradford, UK) and Patrick McGovern (Philadelphia, USA) for valuable consultations and discussions on the topic of prehistoric brewing. I am grateful to John Carman (editor of *Archaeologies*, Birmingham, UK) for his kind help with editing my text. Last but not least, I thank my wife Magdalena, who brews her own beer in the best tradition of prehistoric European identity and explained to me a number of technological aspects of traditional beer production.

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