The Whey of the Curds – a history of cheese in Western Society in period.

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Prehistoric times

Legend has it that cheese was discovered by a travelling nomad. The nomad kept a quantity of milk in a skin (probably a stomach). As a result of his bumpy ride and hot conditions, the milk had turned into curds.

It is a nice legend but a problematic one. Why would a nomadic adult be carrying milk and where did he get it?

Neolithic people began harvesting milk around 6500 BC (give or take a few hundred years). Prior to this, goats and sheep are starting to be domesticated and it would take some time to adjust the breeds to produce surplus milk. More than just time, there needs to be a reason to do it. It is around 6500 BC in Anatolia that pottery shards with milkfat on them start to be found. There is also a shift to pastoralism, probably caused by population and climatic reasons. Lastly, high temperature generation methods come into play (kilns and such). So, we have clay, milk, herds, and ceramics. We can finally have butter and cheese.

The strata show that it is around 6000 BC that butter and cheese become common. And it is around this time that lactose tolerance starts showing in European and Near East populations. Not only can we make cheese, we (or at least some of us) can now eat it without disasterous results.

The cheeses that were likely made were heat- or acid-coagulated cheeses, like ricotta or Cokelek. These could also be salted and packed into jars for preservation. These jars could have been buried in the earth and help explain their commonness in the strata.

Neolithic people probably also discovered rennet from animal stomachs soon after. So, some rennet coagulated cheeses are also possible[i].

Our legend is unlikely because dairying is largely something that settled populations do, not nomads. You need pastures. You need the time and desire to breed animals that produce excess milk. You need a lactose tolerant population. You need ceramics. But either way, around 6000 BC, we have milk and milk products showing up frequently.

Even the Bible mentions cheese often in Genesis and the early chapters. It starts with Abel, a shepherd. And then the Lord appears to Abraham and Abraham sets out

> Genesis 18:1, 6-8 And he took butter, and milk, and the calf which he had dressed, and set *it* before them; and he stood by them under the tree, and they did eat. (sometimes the word translated as butter is translated as curds)

Ancient Era

In prehistoric times, fire and agriculture beget cheese. We need fire for ceramics and agriculture to stay in one place long enough to develop breeds of animals that produce an excess of milk.

It is another powerful invention that owes its existence to cheese.

In Sumerian and the early Near East civilizations, there is a legend about Inanna (who becomes Ishtar and Aphrodite over time). Inanna is looking to marry a mortal. She prefers Enkimdu, a farmer. Her brother Utu suggests Dumuzi, a shepherd. Dumuzi confronts Inanna as to why she prefers the farmer. Inanna lists off the various grains, beans, breads, etc that Enkimdu can provide. Dumuzi responses with the various milks, cheeses, yogurt, butter, etc that he can provide. He even claims that he produces so much of these things Enkimdu can live quite well off the leftover dairy products. Inanna ultimately chooses Dumuzi.

The Sumerian and these early cultures had a palace type economy. And Inanna was an important Goddess in these cultures. She demanded sacrifices of dairy products and it was normal for people to make frequent offerings. The temple priests would then store these offerings for redistribution at a later time. The priests initially made discs of clay to indicate how much of any offering were in a given location. These coins were then further sealed in a clay envelope. Want to know how much cheese is in a given vault? Break open the envelope and count the coins.

Over time, someone had the bright idea of making markings on a clay tablet instead of making clay coins. Hence, the need to track dairy offerings to Inanna gives birth to Sanskrit, the ancestor to the written languages of the Western world.

This is not to say that had Inanna chosen differently, the Sumerian would have also found the need to track those offerings instead. Undoubtedly, they would have. The rise of language in the Far East and Meso-America were not because of cheese. But, it is the case that dairy was the reason to keep track of offerings.[ii]

To verify that dairy was so important, there are numerous friezes in Sumerian temples showing pastural life, milking cattle, sheep, and goats, making cheese, and more.

By and large, these cheeses were still heat- or acid-coagulated cheeses. But we start to see other cheeses as well. Sumerian writings make reference to "white cheese." Another legend of Dumuzi talks about small cheeses piled in heaps and large cheeses laid on a rod. White cheeses and large cheeses might have been rennet-coagulated cheeses.

Rennet cheeses tend to be firmer than acid- or heat- cheeses. Compare feta to ricotta. A pastural culture probably will discover rennet cheeses quickly. It is not unusual to kill calves, lambs, and kids for meals, especially male ones. The stomachs of these animals make good vessels of containing liquids or cooking. When cleaning these stomachs, people would discover milk curds. So, this style of cheese is merely a matter of trial and error after knowing that[iii].

During the Hittite Empire, we see a reference to a cheese offering. The ritual we have has the words GA-KIN-AG GA-PA-AN. Hittite is closely related to Akkadian and scholars had to look to Akkadian to understand Hittite. GA-KIN-AG is cheese. That was known. But GA-PA-AN was not. GA-PA-AN might be related to gapnu, which refers to a fruit bearing tree like the fig tree. Initial translators dismissed this. After all, what do figs have to do with cheese? Another possibility was gaban or gabnu, which is not defined, but somehow relates to shape. We know now that fig sap contains a vegetable rennet so a cheese of the figs is not so far-fetched[iv].

Around the 2500BC to 2000BC, we now we have a variety of cheeses, acid-, heat-, and rennet-coagulated. Cheese was trade commodity. Packed in ceramic jars in brine, it travelled well, kept for a long time, and had a regional flavor based on the diet of the dairy animal.

Again, we can turn to the Bible to see how important cheese has become.

> 1 Samuel 17:18 - And carry these ten cheeses unto the captain of [their] thousand, and look how thy brethren fare, and take their pledge.

In this section, things like bread and meat are given to the soldiers but cheese in specific is to be given to their officer. Cheese is valuable.

It is possible that around this time, the various steppe peoples and those in the Himalayans also start making cheeses from horses, yaks, and goats. The Mongolians made a cheese-like drink called airag also known by other steppe peoples as koumiss (a variety of spellings on that). [v] Koumiss is a fermented mare milk and it is really more akin to a yogurt than what we think of as cheese. The Himalayan peoples (Nepal and Tibet today) make a small number of soft cheeses from yak or goat milk. They also do some hard cheeses that are essentially dried versions of these same soft cheeses. [vi]

Classical Era

We find evidence of cheese used in offerings in Classical Greece. Around 500 BC, two monuments on the Acropolis detail the amounts of cheese, barley, beans, sesame seeds, olive oil, and honey that were offered to the Eleusinian Cult[vii]. Bloodless offerings of cheese were made to Demeter and Artemis in

Sparta. In fact in Sparta, theft of the sacred cheeses were expected. Young Sparta boys, training to be warriors, were fed a meager diet. They were expected to raid the community for more food if they wanted it. Punishment was given out for getting caught, not for the theft itself. It became a competition for the boys to steal as much cheese from Artemis as possible without getting caught.[viii]

Some gods expected specific kinds of cheese. Cybele was offered something called "female cheese." We don't know exactly what this is as cheese must come from a female animal. There is a "female cake" in the shape of a breast so perhaps this "female cheese" was also shaped thusly.[ix] Strabo reports that Athena was not allowed to touch native green cheese (fresh cheese; not green in color). So, one could only offer imported cheese to Athena. [x]

Basins found in the temple of Askelepios, the god of healing, may have been cheese vats and Homer makes reference to the healing of Ares as being like the coagulation of milk to make cheese. Homer also makes reference to cheese in the Odysesesy when Odysseus enters the Cyclops cave and is impressed with his cheese making operation. This is one of the earliest written examples of the cheese making process. From Homer, we see that rennet (either fig or animal) is added to milk, the cheeses were lightly pressed (due to the strength of wicker baskets), and dried. So perhaps the Cyclops was making something like a pecorino.

We then start to see harder cheeses coming from Sicily and other Greek colonies. Various cookbooks including *mithsikos* and *herakleides* feature grated cheeses in sauces. Grated cheese was even included in a victory drink for Olympians. These cheeses were likely an aged pecorino type cheese. Gastronomical excesses, including imported cheeses, become a sticking point of Plato in his Republic.[xi]

Meanwhile in Rome, Romulus and Remis are suckled by a she-wolf. And dairy would be important here too. Ricotta type cheeses are an early product of bronze age Italy. The resulting whey would feed pigs. Cato in *De agri cultura* recommends one pig for every two ewes to feed off of the whey from cheese making. Cato and Columella give us reference to two types of cheese, caseus aridus (dry cheese) and caseus mollis (soft cheese). The dry cheeses are aged, hard cheese and in much demand.

Cato also tells us of various cheesecakes used for food and sacrifice to the gods. One such cake is a the placenta, a cheese cake about 1 foot wide, 2 foot long, and about 2 inches high. It calls for 14 pounds of cheese and 4.5 pounds of honey.

About 130 years later, Varro would write his manual of agricultural maintenance, *Rerum Rusticarum*. Varro gives us our first detailed instructions on rennet coagulation. Previously, authors talk about it but do not give us the same level of detail. Varro tells us that 1.5 gallons of milk should be coagulated with an olive-sized piece of rennet from a kid or a hare. He also explicitly mentions fig sap with vinegar as an alternative rennet coagulatant. While he doesn't mention the amount, he says to use rock salt over sea salt for salting a cheese.

Around 60AD, Columella writes his work, *Res Rustica* and gives us more detailed thoughts on cheese. Admittedly, it is only a few paragraphs but it is the most direct discussion of the subject so far. He talks about quality control, to make sure to use "pure" milk and as "fresh as possible." He talks about the

exact amount of rennet needed to coagulate and to make sure not to use too much. He talks about temperature control. He talks about alternative sources of rennet (thisle, safflower, and fig). He talks about controlling moisture losses and salting to encourage whey expulsion. He talks about adding flavorings (pine nuts and thyme) and smoking (applewood) for different markets. He also talks about adding hot water which might have produced a gouda type cheese.

We also start to see evidence of large cheeses. So far, the cheeses are on the small size. Moisture needs to be removed so that the cheese doesn't rot. Surface salting is fine for a "small" cheese to accomplish this. But according to Pliny, a type of cheese called "Luna" could weigh up to 1000 pounds. Martial says that Luna cheese was large enough to "afford your slaves 1000 lunches." So far, Cato, Varro, and Columella haven't discussed anything that could possibly be this size.

Columella suggests some experimentation with hot water. We also know that Romans had large olive presses. There is some evidence that the Alpine regions of the Roman Empire were starting to use both heat and pressure to more quickly remove moisture to make large cheeses.

Additionally, these large cheeses might have been the beginning of what will be known as the cheddaring process. The cheese we call Cheddar is because of the English town of Cheddar. Salt is mixed uniformly with the curds and made very fine. This allows for more uniform expulsion of whey from the curds and thus a larger cheese can be made.

There is no way to be sure which method was really being used as we don't know what this "Luna" cheese and its descendents were. However, it would not be long before both methods would find common use in Central Europe.

Medieval Era

With the Fall of Rome, new cheeses come out of monasteries and small manors. Of course, during the Classical Era, small manors made cheeses too. But as the large, slave-driven economy falls into smaller, free and serf driven manors, it is here and in monasteries that new innovations take place.

Especially in France, the different climate than Classical Mediterraen encouraged a different type of cheese. These smaller manors and tenant farmland first meant fewer livestock and therefore less milk per milking. The cooler climate though allowed for the possibility of milk staying good overnight and combined with the next day's milk. Salting the surface of such small cheeses results in a something like a brie and other soft cheeses that France is known for. The use of natural "refridgeration" also allows for higher acidity in the "stored" milk. Trial and error and experimentation leads to expertise in making a variety of cheeses in the region.

Three classes of soft cheeses develop around this time: bloomy-rind cheeses like Brie de Meaux, acid/rennet cheeses like Crottin, and washed rind cheeses like Muenster. The basic processes are similar to the Columella methods from the Classical era but factors like cooler climate, pooling milkings together, aging in root cellars, and washing rinds with growing yeast and bacteria produce a variety of cheeses.

The washed rind cheeses fit really well in to monastic culture well.[xii] One, they tend to require more milk than the other types and monasteries would be better suited to having enough livestock for it. Two, the structured labor of monastery life is suited to the "work on the cheese/let it sit for a bit" needed to produce the cheese. And these types of cheeses don't travel well so again, produced locally and eaten locally makes more sense.

These types of cheeses are in existence by the 9th century for sure as illustrated by the Customs of Corbie and by Charlemagne's biography.[xiii]

England however did not see the break up of land to the same extent as France. While it is true that an individual chorl or thrall might only have a small number of livestock, the Earl would have large herds. England was major source of wool in the Classical Era as well and therefore had lots of sheep for the milking. Also, as a Roman frontier, many Roman soldiers were stationed in England and cheese was part of the typical Roman diet. After Rome, England remained an important sheep culture.

English cheeses tended to still be the larger, aged, cheeses. The Law Code of King Ine specified that every 10 hides of land had to provide 10 cheeses per year. As time goes on, tributes could become higher. A region in Kent provided 9000 pounds of cheese to Ethelbert of Kent in the 9th century.

As the Medieval period goes on, large cheeses occur on the Continent as well.

According to the *Rectitudines Singularum Personarum* (Rights and Ranks for People) written around 1066, it is clear that the primary cheesemaker on a manor is likely a woman and she was due ~100 cheeses per year as part of her compensation. Given the milking season, this is about 1 small cheese per day.[xiv]

In England particular, as we approach the 12th and 13th century, agriculture becomes focused on profitability and commerce. We see from the *Senechaucy*, a treastise of farm management, that was a "head" dairymaid who was to supervise "under" dairymaids and was responsible for output of cheese and butter. We also see that the old techinques didn't scale up as well as needed. Making a 10- or 15-pound cylinder of cheese was just not enough surface area to promote proper drying. Wheel shaped cheeses are developed to maximize surface area.

The processes are not all that different all over the Continent by this point. The differences in cheeses tended to be ratio of the various milks, aging time and conditions, climate of the region, characteristics of the grasses the livestock ate, and amount of salt used. Over the next few centuries is where we start to see the wide variety of regional cheeses that are often still produced today.

Major Impact of Cheese

This History of Cheese is quite Euro-centric and there is a good reason for that. It is primarily in Europe that we find a dairying culture that is interested in preserving the food value of the milk. There are few native cheeses found in the East or in the pre-colonial Americas. I will admit I don't know much about Africa either.

The need to preserve this food value gave rise to language. The desire to have cheese gave way to innovation on how to make it. The culinary delight in eating cheese gave way to trade networks and variety.

It was important enough for religions and nobles to track how much there was and to demand some as payment. It is varied enough that it can serve as a drink, a snack, a garnish, a main course, and a dessert. It can be as thin as water or as dense as a stone. It can be hardy enough to serve as a traveler's or soldier's meal. It can be delicate enough that a few shavings can be missed from a dish. It can travel the world.

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[i] Kindstedt, Paul, Cheese and Culture, p 9 - 14 (Kindstedt)
[ii] Kindstedt, Paul, Cheese and Culture, p 23-33 (Kindstedt)
[iii] Kindstedt, Paul, Cheese and Culture, p 33
[iv] Kindstedt, Paul, Cheese and Culture, p 46
[v] Parks, Michael, Mongolia: Land of Milk and Horses, The Atlantic, Oct 27, 2009
[vi] http://www.cheese.com/by_country/?c=CN&per_page=20#top China section
[vii] Kindstedt, Paul, Cheese and Culture, p 68
[viii] Kindstedt, Paul, Cheese and Culture, p 69
[ix] Kindstedt, Paul, Cheese and Culture, p 69
[x] Kindstedt, Paul, Cheese and Culture, p 70
[xi] Kindstedt, Paul, Cheese and Culture, p 79-80
[xii] Kindstedt, Paul, Cheese and Culture, p 130
[xiii] Kindstedt, Paul, Cheese and Culture, p 131-132
[xiv] Kindstedt, Paul, Cheese and Culture, p 138-139