

FOOD AND DRINK IN EUROPEAN PREHISTORY

Abstract: There is a wealth of archaeological evidence, from bones excavated in prehistoric middens, piles of fruit stones and sea shells, that give us concrete indications of food consumed at various prehistoric sites around Europe. Added to this information we have pollen analysis from settlement sites and charred plant macrofossils. Wetland archaeology informs us in much more detail not just which foods our prehistoric forbears were eating, but also their cooking techniques in some cases. This paper will explore whether or not a popular misconception about the daily diet in prehistory has its roots in the analysis of stomachs contents of various bog bodies found in Europe.

Keywords: ethnology, cooking techniques, salt production, bog bodies, fogou's, prehistoric Europe.

INTRODUCTION

To interpret cooking in Ancient times is not as difficult as one might imagine. There are various quotations by the Classical Historians, that lead us to believe that food tastes, and traditions were as varied in Ancient Europe, as they are today. If one visited an Iberian Celtic Chief, one might expect to be served a chunk of bread, and the best cut of some spit roasted meat, so the Greek Historian Diodorus Siculus 50 BC tells us (Siculus Vol. 5, Chapter 11 :212). However, if one were to visit Ancient Cyprus at the time of Herodotus 450 BC, you might have been served a dish containing fish cakes made of minced sun dried fish (Herodotus Vol. 1: 200). There is also a wealth of Archaeological evidence, such as the bones of animals found in ancient middens, or piles of discarded fruit stones, or sea shells (Andersen 1985: 54). We can study pollen analysis from ancient sites, and charred plant macrofossils (Straker 1991 : 161). Also, evidence from the stomach contents of various well preserved bog bodies, give us an insight into their last meal (Turner and Scaife 1995 : 81). So the pieces of the puzzle are there. Yet, it is important as I said earlier to take account of regional tastes. Just as a person undertaking a, survey of European food might do today.

ETHNOLOGY

I would like to begin this paper with a quotation from Herodotus (Herodotus Vol. 2 book 4: 61) about the Sythian people:

‘Now the Sythian land is wondrous bare of wood: so this is their device for the cooking of flesh. When they have flayed the victims, they strip the flesh from the bones and throw it into the cauldrons of the country, if they have such: into these they cast all the flesh, and cook by lighting a fire beneath with the bones of the victims. But if they have no cauldron, then they cast all the flesh into the victims stomachs, adding water thereto, and make a fire beneath with the bones which burn finely: Thus the Ox serves to cook itself, and every other victim likewise.’

Ethnographic studies of primitive cultures today teach us that, adaptation to the environment one lives in, is essential to survival. Therefore, if there is no wood to cook with, then simply use the bones of your prey for fuel. If there is no cooking pot, then use the animal's stomach. There is an example of this self-sufficient practice in the lives of the Siriono tribe of Bolivia today (Holuberg 1997: 159).

'Little care is taken in dressing game, which is done either by men or women. Animals with hair, such as monkeys and peccaries, are first singed whole in the fire, and the burned hair is then scraped off with the fingernails or with a small section of a midrib of a motacu palm leaf. The animal is then gutted with a sharp piece of bamboo, after which the whole carcass is sometimes (but by no means always) perfunctorily washed before it is cooked. Birds are hastily plucked and then singed in the fire and gutted. If an animal is small it is usually cooked whole, but if it is too large for a pot (or too large to roast rapidly) it is quartered or cut up into smaller pieces with a bamboo knife. Armoured animals like the armadillo and tortoise are usually thrown in the fire and left there to roast in their shells.'

In much the same way as the Sythian people in Herodotus's time used the natural resources available to them to prepare and cook their quarry, this insight into the practices of the Siriono people today are I feel comparable. Minimum of effort being the pivot around which the hunter-gatherer culture past and present function. The need to travel light on a hunting expedition would have been fundamental, as the carcass of the quarry would have to be carried home to camp. Therefore a makeshift cooking pot or utensil would have been needed to cook meals while travelling away from camp on hunting expeditions.

COOKING TECHNIQUES

Cooking techniques in ancient times must also have varied quite considerably throughout Europe. In Ireland, Britain and Sweden there is evidence for a type of cooking method using heated stones and water pit. In Ireland these sites are called Filachta Fiadh (O'Drisceoil 1990:157) where more than 4,000 sites of this type have been identified. They appear as mounds of fire cracked stones usually in a crescent or a horseshoe shape. In the centre of this horseshoe is a typical watertight through or pit when excavated, in which the heated stones were dropped into during use. There is a reference to this practice in 'History of Ireland'. (Keating 1908:326).

'it was their custom to send their attendants about noon with whatever they had killed in the mornings hunt to an appointed hill, to kindle raging fires thereon, and put in them a large number of stones; and to dig two pits in the yellow clay of the moorland,

and put some meat on spits to roast before the fire: and then to bind another portion of it with grasses in bundles. And set it to boil in the larger of the two pits, and keep plying with stones that were in the fire, making them seethe often until they were cooked. And these fires were so large that their sites are seen today in Ireland burnt to blackness and these sites are called *filacht fian* by the peasantry meaning cooking places'

Athenaus quoting Posidonius also mentions the Celts in Europe cooking meat in water (Tierney 1960: 247) 'Their food consists of a few loaves of bread, but large quantities of meat prepared in water or roasted over coals on spits.' This account mirrors the Irish one very well I feel. Last year at Biskupin in Poland (a substantial Iron Age lake dwelling reconstruction), I was demonstrating this particular technique amongst others, to the general public there. It is a very effective method of cooking any joint of meat. The basic principles for cooking meat in this way are the dropping of red-hot stones into a water filled, wood lined trough. There has been some research by Victor Buckley (Buckley 1990: 170) into the most effective types of stones to use and re-heat in the fire.

'A number of tentative conclusions can be drawn from the combined evidence gleaned from the experimental testing of shatter variation in different rock's and the random analysis of samples from two sites in different geological areas. Firstly, drift-derived material was most commonly used and, though the type of drift material was different, sedimentary rocks were preferred. Secondly, igneous and some metamorphosed rocks are very reusable and may present a problem for archaeologists, particularly in northern areas, who may find a different morphology for *fulachta fladh* owing to this lithic longevity.'

Although burnt mounds are widespread in Ireland it is interesting to observe the absence of *fulachta fladh* in Counties Galway, Limerick and Clare. This is probably due to the limestone strata as Prof. O'Kelly observed in his paper (O'Kelly 1954: 144). Limestone on contact with heat and water would turn to calcium hydroxide. So although this is an efficient way to cook meat it probably did not merit the carrying of stones long distances to cook with. Doubtless, only if rocks in the local geology were suitable was this method of cooking used. The size of the meat joints that I used in my experimentation at Biskupin averaged 5 kilos each. Each day we were plied with three such joints of Beef or Pork to cook, and on two occasions a whole Lamb was supplied. The stones my team and I found in the locality were fine-grained granite, similar to the ones that I had used previously in Cornwall. These stones were heated in a fierce fire for about one hour until they were red hot. About a dozen were then dropped into the water trough and the ensuing sizzle and whistling noise was quite deafening. It takes approximately 15 minutes for red-hot stones to release most of their heat into the water, consequently the water gradually came to the boil as a pan might

on a conventional cooker. The meat was wrapped in long fresh wayside grasses, in the fashion described by Keating in his description from Irish folklore. These grasses had to be tied tightly with string, on this occasion spun nettle fibre. Linen string is a good alternative but it tends to not have the elasticity of the nettle fibre, and on some occasions goes slack in the water. Once the water was boiling, the grass wrapped meat was ready to drop into the trough. Every so often over the course of two hours hot stones were added to the trough just to keep the water simmering. At the end of this time the meat was taken out, and the grasses removed to reveal on each occasion consistently well cooked meat. All that was required was to crisp up the sides on some hot stones taken out of the fire, and it was ready to eat. This left the water filled trough full of meat juices and fat from the meat, and it occurred to me that this could have been considered by our prehistoric forbears as too good to waste. So I undertook to see what could be done with such fat rich water. The most logical and easiest solution was to mix a little bread dough, and drop it into the trough half way through the meat cooking. This dough dumpling takes on the flavour of the meat from its juices and fat. When the meat is taken out, the dough dumpling provides tasty bread to eat with it. This dough required no extra effort or stones than was needed to cook the meat. I feel it would have been a logical utilisation of this finite heat source. In the seventeenth century herby dough dumplings cooked in cauldrons with boiling meat was common practice (Masson 1974: 120). This fat rich pudding would have been savoured I feel if it had been made, especially as most of the flavour of meat is usually released from its fat and juices during cooking. The festival at Biskupin that I was demonstrating these techniques at lasted 9 days, so my team were also able to demonstrate how raw materials might have been utilised on a daily basis. One member of my team made the bones of the previous day's joints into bone needles. The other two members made platters and serving baskets out of local grasses, and sewed them together with the bone needles.

Another cooking technique that was demonstrated was the clay baking of fish. There are some archaeological indications for the cooking of food in clay in stone lined pits. At Woolley Barrows, in North Cornwall an excavation was undertaken in by E.A.K. Higgenbotham (Higgenbotham 1976: 10) at a Neolithic longbarrow and a Bronze age round barrow. The excavation of the longbarrow exposed a large stone area extending up to 9m from the edge of the mound. Resting upon this stone surface was a small hearth, 0.60m by 0.70m, bounded by siltstone blocks, at the centre of which the soil had been scorched to a light red colour. On top of this contemporary stone surface were small fragments of amorphous, slightly burnt and reddened clay. These were suggested by Mr Higgenbotham to be contemporary with the Neolithic flint in the barrow. Another example of these peculiar lightly fired clay fragments, can be found

at an excavation on Bodmin moor at the Bronze age cairns at Stannon. This area of Bodmin moor is rich in prehistoric monuments. Within two kilometres there are three stone circles, innumerable hut circles and enclosures including a Bronze Age Settlement. (Harris, Hooper, Trugian 1976,1977: 141). Cairn one exposed at its centre a pit that had been dug into the subsoil to a depth of 35cm. The pit was round and 1 metre in diameter. Its sides sloped to the bottom rather like a cauldron and was lined with small stones. The bottom of the pit contained large carbonised chunks of wood which were reasonably preserved due to the wet conditions. This pit had been back filled with soil and a flat stone had been placed on top. Around the edge of the carefully infilled pit eight stones were placed. These acted as supports for eight larger stones, which were, placed leaning against them. This was repeated several times in what appeared to be a spiral pattern. Over this structure was piled a large number of small moorland stones. In cairn two there were two pits one was long and rectangular the other was a small round pit next to it. The rectangular pit had a soil infil and the small round one contained traces of charcoal. However, between these two pits was a piece of soft shapeless lightly fired clay. The third pit was a typical cairn burial containing a decorated biconical urn. This suggests that as only one cairn contained a burial, that the other two were in some way part of a ceremony connected with it. Especially cairn one, which was so carefully covered by a flat stone supporting the petal like structure of stones on top. It could be possible that some sort of wake meal at the burial was consumed. The small fragment of soft anomalous clay found between the two pits in cairn two suggests that some food might have been baked in it, as it was not comparable to any typical ceramic find. One would have expected quite a considerable amount of this partly fired clay, if this were the case. It is impossible to suggest why there was only one piece, maybe the relations took home a piece of the clay from the wake of the deceased, as a memento of their farewell meal. This is pure conjecture, but plausible I feel as a hypothesis. Ceremonial earth ovens associated with funerals are well documented by anthropologists studying the Maori peoples of New Zealand and in Polynesia. In the Maori whakau ceremony the oven was large enough to cook a meal for the entire funeral party. In other ceremonies, such as those connected with exhumation and the tohi rite over children, a number of ovens were prepared to provide a meal for all present (Buck 1974: 501). On Tikopia Island in Polynesia the earth oven was also used, and described as a pit in the ground in which food is cooked by being laid on hot stones and covered with leaves. (Firth 1957: 94). I have reconstructed the Stannon cairn one pit and found the cauldron shape had a spectacular effect on the ferocity of the fire within it. This being due to the smooth airflow in and out of the pit. When reconstructing this pit it became apparent that the stone lining in the pit was there for a specific purpose as the base for possible northern European earth oven. (See Fig 1). The fire can be lit directly on top of the stones in

the pit to be clamped a second hearth nearby can heat the other half of the stones needed for the top. During my experimentation I found that because of the fierce fire in the pit induced by the free flowing air, the stone lining in the pit became red hot in half the usual time. A joint of meat wrapped in a few giant burdock leaves (*Arctium minus*) was placed onto the hot stones, after the un-burnt wood was taken out. The stones from the second hearth were added to the top and turf was layered on this to keep the heat in. After three hours the meat was taken out of the pit cooked to perfection and the original stone lining left in tact for use on another occasion. This cairn pit when reconstructed proved to be a very efficient earth oven base that indicates it could have been used for culinary purposes.

A indication that food was clay baked in a settlement situation was found a Trethellan Nowakowski 1991: 57,140) a Bronze Age lowland settlement.

In house 142 the description strongly suggests the remains of a clay baked meal.

'The most significant feature about this hearth was the amount of burnt clay it produced; the only context within the entire settlement which produced burnt clay fragments in this quantity. Much of the clay was found as hard baked amorphous lumps many of which displayed surfaces apparently smoothed and moulded by hand and through the careful piecing together of some fragments it was discovered that some originally formed parts of a shallow clay dish also found in pit 3046 similar pieces of clay a deep red in colour. Very friable pieces of fired clay of which only two pieces join to form the edge of what appears to be the triangular rim of a larger flat based object.'

This interpretation is quite plausible, but the triangular shaped pieces do not suggest a dish on closer inspection (See Fig 2). During my research into the possible methods of clay baking foods I have found that when a joint of meat is wrapped in river clay it is very difficult to carry to the fire to dry before baking. If however, a piece of wood is placed underneath it it makes the task much simpler. This wooden plank enables one to move and turn the clay covered joint around the fire before baking. When the clay is dry the joint is dropped on top of the fire and the wooden plank is burnt away during the cooking process. The clay at the end of the allotted cooking time usually two hours for a 3 kilo joint, has to be broken apart. But is always soft and friable because river clay was used. This clay is freely available in Cornwall as it borders most streams. It is not plastic enough to be used for pottery but is wholly adequate when it is used to clay bake food. I conducted the same experiment at Lake Ledro Pile Dwelling museum in Northern Italy. On this occasion I used the fine white lakeside clay to cover one fish, and some raku ceramic clay to cover the other. After an hour in a fierce open fire the two fish were examined. The raku clay which is usually considered the best type of clay for bonfire firing ceramics, had cracked open and the

fish had been exposed to the ferocity of the fire, there was little more than a charred fish skeleton remaining! The other fish covered in this otherwise useless white silty clay was still perfectly sealed. When it was cracked open a perfectly cooked succulent fish was revealed. It was interesting to find that the good ceramic clay was inadequate for the purpose, yet the clay conversely useless for ceramic manufacture was perfect for this specific task! It is because it is not of ceramic quality that its residue in archaeology is soft and friable and can be misinterpreted as daub. During my demonstrations in Poland, some river clay was smeared over a 3 kilo King Carp, which had been previously wrapped in wild herbs, and tied with nettle fibre string. (See Fig 3). The fish was placed onto a split log and put to the side of a fire pit for one hour, then turned and dropped onto the fire for 1 hour 30 minutes. At the end of which time the clay was broken off, and the fish was cooked to perfection. The rough pieces of biscuit fired clay however, took on an almost identical appearance to some of the clay fragments found at Trethellan.

A typical feature of prehistoric settlements in Cornwall are piles of small round pebbles, thought to be either for sling shot use or as pot boilers. I have conducted a great deal of research into the uses of these small stones in cooking, and have found them to be surprisingly efficient. A layer of small beach stones was arranged on the ground and a fire was made on top of them. On this particular occasion I was researching possible soft cheese making techniques using pot boilers. A large pot was placed on a low table a few metres away from the fire. Into this pot was poured one litre of whole milk, and a small bowl of sour cream to increase the acidity and help separate the curds and whey. With the use of a pair of hazel stick tongs, five stones were dropped into the milk. The stones don't tend to release their heat immediately but after a few minutes the milk began to steam. More stones were added three in all, and the milk began to boil. Almost immediately the curds separated from the whey, which were subsequently strained through some rushes (*Juncus effusus*), and the soft cheese remained. The practicability of using hot stones to heat the contents of cooking pots became immediately apparent. Especially if one has had some experience as I have, of stirring pots of food over a smoky fire. Food can be prepared at some distance from the fire leaving a space for people to either warm themselves, or spit roast some meat. All that is needed to keep many different pots simmering is the addition every so often of a few firestones. As the stones cooled in the pots they could be thrown back into the fire for re-heating. This technique was also used in Hawaii, but instead of dropping hot stones into a ceramic pot a calabash which is a hollowed out gourd shell was used as the container. Fish was thought to be delicious by the Hawaiian Islanders when cooked in a calabash with hot stones (Wise 1965: 99).

At Lake Ledro another interesting cooking technique was found in the archaeology. A loaf made from the flour of coarsely ground cereals was discovered looking like a large doughnut. It is suggested that the dough had been wrapped around a previously heated stone that was found at the site (Tomasi: 1982)

The similarity of the ethnographic evidence to the remains found in northern European archaeology cannot be disregarded. The efficiency of the earth oven as a cooking technique must have occurred to primitive cultures on a global scale, not only does the method leave the community free from work for four or five hours, it saves considerable amounts of fuel. The *fulacht fladh* if the local geology is appropriate also fulfilled a need as a successful method of cooking food for hunting expeditions, the numbers of such sites in Ireland substantiates this. The use of pot boilers from my own experience is a far superior method to cooking liquids in pots on the edge of a smoky fire, also leaving the fireside free for the community to warm themselves.

GRAIN

Bread, the staple of life, is mentioned many times by classical writers, and a yeasted bread was also discovered from the late Neolithic levels at Douanne on lake Biene in Switzerland. (AUDOUZE & BUCHSENSCHTZ 1989:125). It is not at all difficult to produce a yeasted loaf of bread as one might imagine. Yeast production today, and throughout history has been linked with the brewing of Beer and Wine. 'The interdependence between the grain and the yeast, between bread and fermenting liquor, was certainly established in the earliest times and has persisted throughout history' (David 1977: 90). Further testimony for the link between brewing and baking was found in a tomb of the middle kingdom in Egypt c.2000 BC, this was a wooden model of a brewhouse and bakehouse on display at the British Museum. Certain fruits are host to large amounts of wild yeasts on their skins, such as the Grape, and in Northern Europe the Elderberry (*Sambucus nigra*). Fermenting wine or beer can be added to flour, to produce leavened bread. Plinny the elder commented on this practice. (Plinny Vol. 5 book 18: 68)

'When the corn of Gaul and Spain of the kinds we have stated is steeped to make beer the foam that forms on the surface in the process for leaven, in consequence of which those races have a lighter kind of bread than others'.

This is not the opinion we generally have of the barbarian Celts bread. One would assume that the Roman bread was lighter and finer than that of the Celts, if this were so I am sure Plinny would have made a point of stating this. It is possible, I have found, from my own research in this field, to preserve a wild yeast concentrate for some months until required for use. It is well known that the Celts in particular were very fond of wine and Beer. Strabo comments on the European Celts.

'They also drink beer: but they are scarce of wine, and what wine they have made they speedily drink up in merry feasting with their kinsfolk' (Strabo vol. 2:75)

The fermenting of grains to make alcohol is thought to have begun at the same time as the first cultivation of grains. The growing of grain had become widespread between Iran and Turkey around 10,000 years ago (Harris 1997: 8). In ancient Mesopotamian texts in the 3rd millennium BC there are said to be a list of 19 different types of beer made according to the combinations of grains and herbs used in their manufacture (Davidson 1992 : 23). Yet growing grain does not seem to appear in Northern Europe until the Neolithic approx. 6,000 years ago (Robinson 1993 : 35). In Britain a small quantity of impressions of grain have been found on Neolithic pottery at Abingdon causeway enclosure in Oxfordshire (Avery 1982 : 48) which give us concrete evidence that Emmer Wheat (*Triticum dicoccum*) and six row Barley (*Hordeum vulgare*) were in some quantity cultivated during this period. Widespread evidence of grain cultivation in Britain however is not found until the Bronze Age approx. 3,500 years ago. I am often asked how prehistoric people might have discovered the process of Beer making. I believe it has a lot to do with the storage of grain in pits. The classical historian Diodorus Siculus comments on how the Ancient Britons harvested their grain (Siculus 5 :22) 'They dwell in mean cottages, covered for the most part with reeds or sticks. In the reaping of their corn, they cut off the ears from the stalks, and so house them in repositories underground'. There is widespread archaeological evidence for these grain storage pits throughout Europe.

'Storage pits can be distinguished from innumerable pits found all over protohistoric settlements by their characteristic shape. They are usually circular in plan and generally small, being only rarely more than 3m in diameter. The depth is usually equal to or greater than the maximum diameter. The opening was originally smaller in diameter than the maximum diameter of the pit. These characteristics stem from the need to have large a storage capacity as possible with the smallest possible opening, which usually seems to have been worked out so as to allow a man to get inside. A. Villes has observed that in Champagne in the La Tene period the average diameter of the aperture was 60-70 cm' (Audouze and Buchsenchutz 1991 :129).

In different regions these pits vary in shape and size, but the basic principle is the same. A large hole is dug into the ground most commonly a bell shape, essentially a large rounded hole with a narrow neck at the top. Grain is poured into the pit after the harvest and presumably a plug of clay was used to cover it. Followed by a layer of turf on top to stop the clay from drying out. Although there is no evidence for these clay plugs, they are the most logical top for the pits, and could have been ploughed out over the centuries to leave no traces of their existence. The grain on the edge of the pit had contact with the damp earth. This grain then began to germinate, as it germinated it

used up all the remaining oxygen in the sealed pit, releasing carbon dioxide in exchange. When the oxygen is used the germinating grain died and formed a crust on the outer edge of the pit. The grain within was sealed in a vacuum and would keep for years without deteriorating. Some research into the use of these types of storage pits was undertaken by Dr Reynolds at Butser Ancient Farm (Reynolds 1976: 41), and it was found that the grain stored for a year in the pit was in a better condition, than grain stored in a modern electrically heated granary for the same length of time. However, in the following Spring when almost all the grain had been removed and used from the pits. The grain that was left would begin to germinate. Germinating wheat and Barley taste very pleasant very much like liquorice. I am sure this would have been a popular food during the Springtime. Unfortunately, it is only at the beginning stage of the germination that it tastes good. If left a week too long the germinating grain goes mouldy, and is wasted as a food. It is not unrealistic to assume that someone made an attempt to preserve this sprouting grain, by drying it in a kiln. Once baked the grain sprouts change to malt, a completely different and pleasant smelling food. This malted grain ground to a flour on a quern, and added to water makes a enjoyable malt drink. It also becomes an important food, as there are more vitamins and minerals in the malted grain than in its un-sprouted state. This is because sprouting grain releases the plants energy pack of sugars and starches in order to make a new plant. It is also not hard to imagine a refreshing tasty drink was made of the malted grain in large quantities, and as a consequence a surplus might have been left for another day. This would have started to ferment, and the additional possibilities of alcohol discovered.

Connecting the growing of grains to the production of beer, and as a by-product yeasted bread, gives us a totally different conception of the staple food of prehistoric Europe. Coupled to this the comment by Pliny the Elder that the bread of the barbaric Celts was of finer quality than that of the civilised roman, demonstrates how an assumption can be depicted without looking at the evidence. The assumption being that because the Romans built roads and cities, they must as a consequence have had a finer diet than the barbarians they came to civilise.

The cultivation of these cereal crops however, was interdependent with the domestication of animals.

'Although cattle were fully domesticated at least by the sixth millennium B.C., they were not systematically used as traction animals until the later fourth millennium, when a specific technology was developed to make use of this. The most important applications were to the plough and the cart. The plough increased production and made economic the cultivation of a range of poor quality soils; it thus resulted in the colonisation of a wider area than had been possible under previous systems of cultivation. Both the ox-cart and the horse, as well as the pack-donkey, opened up the possibilities of bulk transport.'(Sherratt 1981 : 262)

Animals were much more important to primitive societies than being just another meat source. Large numbers of female animals would have been needed so there would

have been a working stock, and a breeding population of animals for these agricultural societies. Therefore the growing of cereal crops and the ensuing need for large herds of draught animals would have occupied increasing amounts of the time of the first

farmers. More substantial dwellings and storage facilities would be needed as a consequence. In an article by Peter Rowley-Conwy he suggests that cultivating the land was not necessarily an inevitable advance for hunter-gatherer societies. 'We call hard but boring work 'the daily grind' a reference to milling cultivated grain, and current research is showing that you didn't take up farming unless you had to.' (Rowley-Conwy 1997: 7). However hard work though it might have been for the first farmers, the multitudinous benefits of the sedentary lifestyle and resultant development of new technologies such as ceramics and metallurgy, would have far outweighed the drudgery.

DAIRY FOOD

There is little doubt that dairy foods were an important part of the prehistoric diet of Northern Europe, from as early as Neolithic times. The Secondary Products Revolution a term created by Andrew Sherratt categorises the secondary uses of draught animals for milk.

'Milk has several advantages. From a dietary point of view, it supplies the amino-acid lysine, which is missing in a cereal-based food. It contains fat, protein and sugar in a balanced form, and is a useful source of calcium. Being liquid it is easily handled, and can be converted into a variety of storable products.' (Sherratt 1981 : 276)

Archaeology has now concrete evidence that milk products were consumed throughout Europe from Neolithic times due to a new testing technique developed by R.P.Evershed and S.N.Dudd 'The stable carbon isotope compositions of individual fatty acid components of remnant fats preserved in archaeological pottery vessels show that dairying was a component of archaeological economies' (Evershed & Dudd 1998 : 1478). At many causeway camps in Southern Britain, a high proportion of the bones excavated, were of calves. 'The cattle bones from Hambledon Hill are primarily those of older females and young calves. One archaeologist has interpreted these as the kill residue from a dairying herd kept in the settlement enclosure of Hambledon Hill' (Parker Pearson 1993 : 48) This indicates not just the consumption of veal, but a need for a large supply of milk for the community. The management of cattle herds continued through the Bronze Age and in some way took on a ritual significance at various burial mounds. Perhaps it was an indication of a person's prestige and wealth as to how many cattle were consumed at the burial feast. Displaying the quantity consumed by covering the tomb with the heads of the cattle consumed. At Irthlingborough one of these mounds excavated revealed 184 cattle skulls (Parker Pearson 1993 : 78). Also, Strabo tells us that one of the trade goods exported to Europe from Britain prior to the Roman invasion was that of Hides (Strabo 1 1: 253) It bears grain, cattle, gold, silver, and iron. These things are exported from the island as also

hides, slaves, and dogs) Strabo also comments on the cattle in Britain when he talks about the inhabitants of the Cassiderides though to be the Scilly Isles and Cornwall (Strabo 1 1 :157) 'They live off their herds As they have mines of tin and lead, they give these metals and the hides from their cattle to the sea traders'. These

quotations support the conclusion that large herds of cattle were a common sight in ancient Britain. Milk would have been available all year round due to good animal husbandry. Although the milk would have been more plentiful, sweet and rich in the Spring. The storing of surplus dairy produce would have been important to such a culture, as plentiful supplies of milk would subside during the Winter months. This problem was overcome in part by storing Butter in wooden containers and burying them in marshlands or peat bogs. Deep in the peat levels of the marsh the surplus Butter would keep fresh during the Summer months. Only to be removed when required during the Winter. Archaeologists in Ireland have discovered large quantities of this Bog Butter. 'Many discoveries of this 'bog butter' have been made, ranging in quantity from a few pounds to as much as a hundredweight' (Renfrew 1985: 1 5). I have held a wooden stave bucket containing at least 5 kilo of Ancient Butter from the Royal Cornwall Museum store, in Truro. Mr H. Maulsley found this butter in the neighbourhood of Oughterard, County Galway in 1906. He reported 'This cask containing Irish Butter was found when turf was being cut five feet below the surface in solid peat.' (See Fig 4). It is a pale yellow in colour and a grainy consistency, and it smells quite dreadful. Fascinating though to think that this particular bucket full of rancid butter was churned by someone in Ireland, a couple of thousand years ago, when the map of Europe was dominated by Roman legions. The Northern European taste for Butter is still with us, no matter how many health warnings there may be about its consumption. We have a tradition of eating butter for possibly 6,000 years from Neolithic times. So it is not surprising it is a habit hard to rid ourselves of Strabo thought it warranted mentioning that the Celtiberians ate butter instead of olive oil with their bread even though they had access to olive oil in the south of Spain (Strabo 1 1 :75) 'instead of olive oil they use butter'.

However, bogs are not a good environment for storing hard cheeses, which would have been an important source of protein and calcium in their diet in the Winter months. Hard Cheese needs a suitable place to store as it matures, somewhere that is cool and dark. In prehistory the obvious place to store cheese for the Winter months would have been in caves. Not only does a cave store the cheese perfectly, it can impart flavour to the cheese in the form of localised moulds that live in the cave. Cheeses made of Ewe's milk such Roquefort, from France are said to acquire their unique flavour from moulds that live in the caves of that region. In Britain the famous Cheddar cheese was developed in the caves of the Cheddar gorge where the extensive caves were used to store and mature this cheese. Caves however are not a widespread

feature in the Northern European landscape. It strikes me that the manmade underground structures known as fogous in Cornwall (Souterrains), (See Fig 5 found in several parts of Britain, could have been constructed partly for this purpose, as well as possibly for the storage of wines and meads. As many as 200 examples of souterrains have been discovered in Scotland dating from the first century BC to the third century AD. On Orkney and Shetland they are built entirely underground yet in

the eastern Scotland they are only partly subterranean (Dyer 1990 : 139).. It is possible however that not all British prehistoric tribes made cheese. The writer Strabo says about the British in (Vol. 1 1: 255) of his Geography 'some of them although well supplied with milk make no cheese'. This might account for the lack of these archaeological features in some parts of Britain. Tacitus when describing the Germans mentions underground stores such as fogou's and souterrains. (Tacitus Germania : 16) 'They have also the habit of hollowing out caves underground and heaping masses of refuse on the top. In these they can escape the winter's cold and store their produce.' This indicates that the practice of making artificial caves for food storage was widespread in Europe. The secondary product revolution, (the use of milk products from draught animals) must have had a momentous effect on farming settlements. Ceramics had to be developed to store and strain the milk during cheese and butter making processes. Storage facilities were needed to preserve surplus butter for the winter months, and underground caves sought or made to mature cheese products. Also the size of a families herd would have become a status symbol indicated by the amount of cattle that could be consumed at a burial, and the deposition of cattle heads as a testimony to this status.

SALT

Another favourite Celtic food was Bacon or Ham, Strabo said: 'their flocks of sheep and herds of swine were so very large that they supply an abundance of salt meat, not only to Rome but most parts of Italy.' The Hallstatt Celts of Austria, were salt miners, hence their skill in making salt meat. This is a wonderful quotation, as it conjures up a picture of wagons loaded with Bacon and Hams, trundling down mountain passes, till they arrive at the Roman road system, and distributing their wares as far as the south of Italy. In southern Britain there are no salt mines, but there is Archaeological evidence for a chain of salt producing centres along the coast. These are well documented such as the site at Trebarveth in Cornwall (PEACOCK 1969: 47). Filling rough ceramic trays (briquetage) with seawater and suspending them over a pit fire produced salt. As the water boiled away more sea water was added until at the end of the day a thick block of salt fills the entire tray. These trays would be left to go cold then the pottery tray broken from the block of salt which was then ready to either store for use by the village or traded with inland tribes.

In parts of southern Europe saltmarshes were established to harvest this precious commodity.

'The water's path followed a similar route. A conduit was placed into the breakwaters separating the compartments of the marsh. Gravity caused the water to flow toward a reservoir (a tidal reservoir) where concentration began, then through little canals towards the salt beds; at the lowest level (evaporating pans), the salt crystallised.'(Mollat du Jourdin 1993 :135)

There is today in Cornwall, a Pilchard salting works that preserves and presses this particular fish in the traditional way. Huge vats are filled with the days Pilchard catch un-cleaned and gutted. Bags of salt are then poured onto them and they are left in this vat for six months. The fish are then packed into small barrels and pressed for a few weeks to complete the preservation process. All the produce of this small works is sent exclusively to Padova and Verona in the Autumn to be distributed to the mountain villages in the Veneto region. This salted Pilchard is used as a seasoning for stews and savoury food in much the same way as Garum was in ancient times. Garum was a salty fishy sauce that the ancient Romans used as a seasoning for savoury foods instead of salt. There is still the remains of a roman garum producing centre at Alminjeka in southern Spain, it is still possible to visit this site at Almenjeka and see the large sunken clay pots used to ferment the salt fish sauce. Strabo refers to this fish salting industry near Gibraltar though this was apparently just one of the commodities produced by these people (Strabo 1 1 : 33)

'There are exported from Turdetania large quantities of grain and wine, and also a olive oil, not only in large quantities, but also of best quality. And further wax and honey and they have salt quarries in their country, and not a few streams of salt water; and not unimportant, either is the fish-salting industry that is carries on, not only from this country, but also from the rest of the seaboard outside the Pillars'.

The process was almost identical to the pilchard works except the fish were pulverised after salting and flavoured with grape juice before being distributed in amphora to the Roman Empire. In the course of my research into prehistoric foods it is relatively easy to see ancient traditions that have carried on to the present day. Such as the use of butter in the north and Olive oil in the south. Non though quite so remarkable as this last uninterrupted line of trade between what were the Ancient Cornish Celts and the Ancient Romans.

BOG BODIES

It seems to me that somehow we have the misconception that a taste for flavour, and convenience foods, is somehow a modern phenomenon. This idea has gained weight amongst many academics because of the analysed contents of various bog bodies from throughout Europe. The analysis of the stomach contents of a great many of these bodies is very similar. Dagten man from Germany, Huldremose woman from Denmark and Lindow man from England, are good examples to compare as they are widely distributed geographically, yet are all from the Iron age period. Dagten man was found in Germany in 1959(Turner 1995: 148) although his stomach contents were not analysed until 1967. The body of this 30 year old man had been decapitated, (his head was found 3m away from the rest of his body), his body also had several stabs and injuries which it is believed were inflicted after death. These injuries were probably inflicted when his body was pegged down in the bog with stakes. It is reasonable to assume that this man did not fall into the bog by accident! As he was pegged down to prevent him rising, Struve who published an article about German folklore talks about pegging bodies down in boglands (Struve 1967: 33-76) 'such persons criminals, suicides, victims of violence or accident, were rendered harmless.. so as not to return and haunt the living' Tacitus also mentions this practice in his studies of the Germans (Tacitus Germania : 12)

'The traitor and deserter are hanged on trees, the coward, the shirker and the unnaturally vicious are drowned in miry swamps under a cover of wattled hurdles, The distinction in the punishments implies that deeds of violence should be paid for in the full glare of publicity, but that deeds of shame should be suppressed.'

The contents of his stomach represented a typical list of contents from these bog bodies Wheat, Millet chaff and weed seeds such as corn spurry (*Spergula arvensis*), persicaria (*Polygonum lapathifolium*) and fat hen (*Chenopodium album*). The Huldremose woman's body (Turner 1995: 147) had a last meal of wheat, rye corn spurry and chaff, she had a willow post or stake 3ft long lay obliquely across her breast. This practice of pegging down of bodies or incasing them in a cage of stakes is well represented in archaeology supporting Tacitus's observations. The Lindow man in England was garrotted however, his throat had been cut and he also had a couple of blows to the head. The contents of his stomach were wheat or rye and barley chaff. Rick Turner observed that ' the bran of the wheat or rye and the chaff of the barley were reported as being the most dominant components of the food debris.'(Turner 1995 : 76) The large amounts of chaff in this body indicate a wholly different conclusion could be made when speculating about this gruel that was apparently a common last meal. It has been suggested by some that the particular weed seeds found in this gruel had perhaps some sort of ritual significance. It occurs to me that the reason for the large amounts of chaff and weed seeds in the stomach contents could have a very squalid explanation. It could have been floor sweepings, made into gruel, in fact prison food

for the condemned criminal. This would be in keeping with Tacitus's observations that only the shameful criminals were deposited in the mire and pegged down. They certainly would not have been a suitable gift for the gods as a sacrifice.

THE WILD HARVEST

The diet of the prehistoric peoples of Europe was rich and plentiful, this is indicated by excavations of the contents of settlement middens from the hunter gatherer period to the end of the Iron Age. At a Neolithic Narva culture site in Northwest Russia hunting and gathering still played a large part in their economy. Forest game such as elk, wild pig, red deer, brown bear, martin, beaver and badger were hunted. At coastal sites the remains of seal and mallard are commonly excavated. Also fish remains from pike, catfish, pike-perch, carp, perch and carp-bream were consumed. (Dolukhanov 1992: 96). At Porth Killer on Scilly (Ratcliffe., J., & STRAKER., V., 1996: 62) a late Bronze Age midden exposed a wealth of finds that testify that the diet of the people of this settlement was certainly not tedious. The list of bone remains is as follows,

Fish: Wrass, Whiting, Bass, Saithe, Dab, Mullet, Conger Ell, Pollack, Gurnard, Common Eel and Plaice.

Birds: Shelduck, Thrush, Puffin, Cormorant, Gannet, Redwing, Razorbill, Spotted flycatcher, Heron, Godwit and Wren. It is perplexing to imagine the amount of nutrition that could be acquired from a Wren, maybe it was that vital ingredient to a stock or stew! Puffins, however are still hunted in the Faro Isles of Denmark in possibly the same way as the Porth Killer inhabitants. Here is a description of their method from Anthropology of Cooking (Jackson 1997: 37),

'The fowler sits in a traditional site on the cliffs and awaits the returning birds. There may be as many as fifty sites along the bird cliffs which have been in use for centuries. The fowler lays his pole alongside the rocks so that it cannot be noticed, but he holds it ready. When a puffin is hurling towards the site, the fowler sweeps up his pole into an arch which, hopefully, transects the puffin's flight. The only puffin allowed to escape is the 'herfing-bearer' that is a bird coming back with little fish hanging out of its coloured beak for its young. In the spring-time adult puffin are caught sitting in their burrow, A shaft is sunk down a little way from the entrance to the puffins underground tunnel, and a short stick with a bent 6-inch nail at the end of it is inserted in the hole. The puffins are dragged out and their neck are broken.'

The relative ease in which these reasonably sized birds are caught would, have made them a regular dish on the prehistoric menu I am sure. The list continues with shellfish such as limpets, periwinkles and scallops, also sea mammals Wales and grey seal were excavated. Domestic animals were also added to this wild harvest, the bones of domestic Ox, Sheep/Goat, also wild Deer and pig were hunted. The presence of the domestic auroch, sheep, and goats would indicate a milk supply, and ultimately

cheese and buttermaking. Indicators of crops grown at Porth Killer from plant macrofossils are Barley, Emmer Wheat, the Celtic Bean and Oats. The wild vegetable

macrofossil remains were of Chickweed, Fat hen, small nettle, wild radish, and sheeps sorrel, all of which I have tasted in my researches, and found them all extremely palatable. The remains of the midden at Porth Killer is typical throughout Europe at shoreline settlements. During the Iron age despite the development of arable farming of cereal crops and pulses also the domestication of pigs, sheep and cattle there was still the added bonus of wild game to their diet. At Biskupin Iron Age settlement in Poland game animals included wild boar, red deer, roe deer, wolf, hare, bear, beaver, lynx, otter and ducks. 'Wild animals apart from supplying extra meat and skins also provided the inhabitants of Biskupin lake village with horn and bone for the manufacture of tools'.(Piotrowski 1992: 90) Therefore during the whole of prehistory there was a bountiful wild harvest for the peoples of Europe to consume. The sea and rivers were teeming with fish, the forests with game and the marshlands with an abundance of waterfowl. The technology needed to hunt this game is evident from archaeological finds of fish traps, harpoons, spearheads and arrows throughout Europe. It is assumed that the need to settle and acquire other technologies such as pottery and metallurgy was instrumental in the people of Europe giving up the hunter gatherer society, and not the lack of game to hunt.

CONCLUSION

To date the general assumption instigated by the analysis of the stomach contents of various prehistoric bog bodies, is that the average prehistoric diet was a cereal based gruel. This I feel is difficult to substantiate in light of the evidence in the archaeology of northern Europe outlined in this paper. The reference by Herodotus to the Sythian peoples adaptation to their environment is still reflected in anthropological studies of primitive societies today. Also the similarities in cooking techniques found in northern European archaeology compared to the ethnographic data cannot be disregarded. The use of what has previously been thought of as useless river clay as the best material for the clay baking of foods is interesting. The residue of this particular cooking technique, which is friable anomalous clay fragments, may have been ignored as daub from clome ovens or wattle walls. The possibility that cairn pits could have been used for culinary purposes as earth ovens for funerary feasts should not be dismissed The connection with the growing of grain and brewing alcohol is well substantiated. What has been overlooked is the link between this brewing practice with the lightness of the bread consumed. Although it has for a long time been assumed that the Neolithic agriculturist cultivated a supply of milk, indicated by the bones of calves at Neolithic causeway camps. There is now, due to new ceramic analysis techniques evidence to confirm this assumption. Fogou's or souterrains that had previously been thought of as

having a ritual purpose could have had their prime utilisation as cheese maturing stores. The continuous trade in salt fish between Cornwall and Northern Italy,

substantiates that some tastes at least have not changed through the millennium. Also if Tacitus's observations of the practice of the Celts pegging down shameful criminals in marshes is taken at face value, then the hypothesis that these people were sacrificed to the gods, and that their last meal had a ritual significance must be rejected. The wild harvest throughout prehistory in Europe was to say the least plentiful. Almost all the meats and fish we catch today were eaten, plus a wealth of wild berries, and nuts from the forests, to say nothing of the abundance of edible herbs and seaweed's. Dairy produce such as butter and cheese were stored and consumed. Beer, mead and wild fruit wines were made, and as a consequence of this production of beer leaven was available to make fine yeasted bread. Hardly the ingredients of a hand to mouth existence, in fact looking at the ingredients we know our prehistoric forbears to have had, and the variety of cooking methods they could use, they ate rather well!

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SICULUS DIODORUS Vol 5 Chapter 26:3

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