Viking age garden features and farming tools

A crash course for reenactors

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Introduction

As a reenactor one normally wants to portray something glorious. A warrior clad in iron, wielding a glittering sword, a king crowned with jewels and dressed in silk or a rich merchant dealing with spices from the far corners of the world. Almost every living history event is teeming with nobility, military and generally the upper classes, with few refreshingly simple depictions, whereas in reality the majority of us should reenact farmhands and peasants to make a few noblemen and -women shine even brighter.

Being guilty of depicting wealth and festiveness rather than mundane tasks ourselves, our group long since opted for crafts, and now also for farming, which is key to early medieval economy and pretty much the basis of – well, life. For these projects we built a small garden and several agricultural tools, and were asked to do a summary of the related finds and depictions, which we gladly provide. This is a list of Viking age garden features and farming equipment that might be interesting for reenactors who want to include agricultural themes to their depictions - thus we concentrate on transportable objects and small scale tasks, as performed on smaller fields and possibly gardens, rather than bigger, animal-powered contraptions like harrows or ploughs. Also we will focus on crop and fodder cultivation, since animal husbandry is another story altogether, with less tools involved but more building and landscaping features needed than a simple garden, hayfield or vegetable beet.

The primary source for any reenactment project should of course be archaeological discoveries. There are many finds of relevant tools and implements that give us a good glimpse into several aspects of farmlife in Iron Age Scandinavia and help us along with recreating the past. However, the picture is, as always, not complete. Things like flails, winnowing baskets and the likes are missing in the catalogues, so we have to extrapolate, assume and, frankly, guess (educatedly) on how the tasks associated with them might have been fulfilled.

Of course there is a big temptation to compare Viking age agriculture to rural farmlife in the not too distant past of Scnadinavia. After all there were tools in use less than a century ago thad seemingly did not change since medieval times or even the period in question, and yet we should not hastily make it a norm to just assume such similarities in every given case. Viewing the more distant past through a 19th century lense might open up the mind for possibilitys, but it does not allow us to state our observations with certainty. When I argue, for example, that Viking age Norwegians could have dried their hay on wooden fence-like structures, as they did not long ago and sometimes still do, this is really nothing more than that – a possibility.

Next to ethnologic comparisons we have to rely on depictions quite a lot. I want to stress the fact that the quality of information gained ftom manuscript illuminations and tapestries is rather variable. Artistic license plays into it as well as cultural topos. Frankish depictions of the ninth century might be contemporary, but they are none the less Frankish, Christian and historising, evoking images from the empire´s Roman past, and thus not corresponding with Norse culture at all. The English Tiberius and Julius calendars, depicting the labours of the months vividly and detailed, helping along quite well with agricultural themes, as well as the famous Norman Bayeux tapestry, showing a load of spades and possibly shovels, were crafted in the eleventh century, at the very end of the Viking age, so they might represent developments that possibly only started at that time, like the use of tally sticks in England or the obligatory iron reinforcements of wooden spades, and that on top of being culturally different from Scandinavia as well. Having said that, the tasks and tools of everyday life stand, in my humble opinion, a better chance to be depicted with a decent grade of authenticity in the manuscripts than glorious warriors, noble lords and dignified saints.

In the end, a spade is just a spade.

1. Gardens – Were they a thing?

That question may hinge on how we define a garden. There certainly were fenced grounds directly around or adjacent to a house that in Old Norse were called „*garðr*“, which already gives us a hint towards the word´s ethymology, with the fencing material (indogrmanic „*gher*“ for hazel or willow rod) at its core. House plots encircled with wattle fences accur in all the big Viking age trading settlements, and rural farmsteads would very likely also have been enclosed.

But the widespread use of fences alone does not tell us very much about the use of the fenced area. There is, for example, a small building feature in Kaupang / Vestfold, which is no more than a small, rectangular, fenced off area, which was probably a pigstall or animal pen. At this plot a garden would have been situated anywhere but whithin that fence. Inside the wall or fence of a Viking age farm lay, acording to Icelandic sagas, the homefield or „*tun*“, where the best hay grew, protected from the animals outside on the meadows. This is already interesting for an agricultural reenactment project, since hay played a major role in animal husbandry and thus in everyday life, though it does not provide us with a small patch of land used for cultivating a variety of plants, including vegetables, herbs, medicinal plants or dye plants.

On the other hand a small, fenced off area that is adjacent to a house wall was found in Uppåkra in Skåne. The soil within the fence was turned over and contained turnip seeds (*Brassica rapa*), more or less clearly resembling a typical housegarden. However, the Uppåkra-garden is a qite unique feature, and we do not know weather this was a very common type of landuse in that time. In later medieval times, Scandinavian sources mention the „*kaalgaard*“ or „cabbage garden“, which is a small kitchen garden situated next to the house, as is a traditionial landscape feature until today.

Hovever unclear the existence of proper Viking age gardens may be to us, that is not to say that they should not have a place in a group´s or even an individual reenactor´s projects. A small patch of barley within a garden might be a few square meters short of being a proper field, but it is enough to show an audience the work an early medieval farmhand would have had to do, to teach them something about the plants cultivated back then and to provide a harvest that might be further processed, sheding light on activities like breaking flax, milling flour or even brewing ale. Thus the reenactor's garden might be a small sample of a vast agricultural workfield, a tool to educate and to gain skill, and therefore surely has a place in a historic depiction that tries to bring across the daily tasks of the majority of the early medieval population.

2. Small scale landscaping

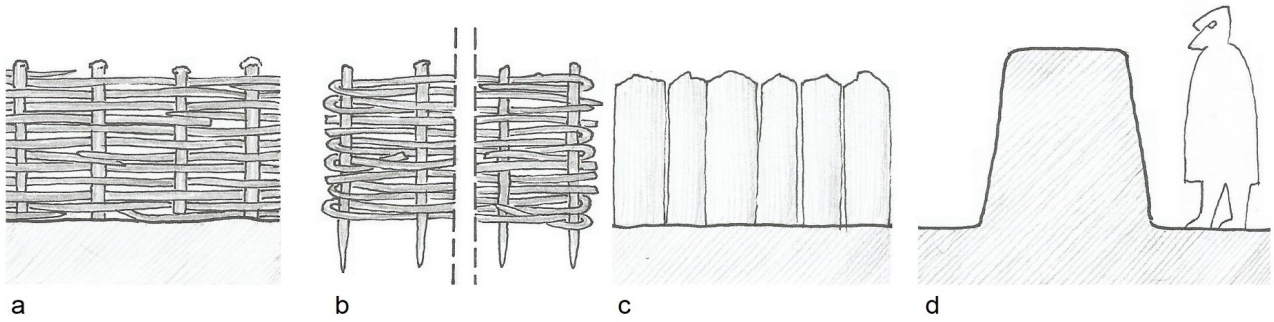
As we saw, **fences** play an important role in defining a garden or even a field. It is a commonly accepted suggestion that an area that sees a time of extensive fencing or abandons a system of fences at a certain point is seeing a major change in agricultural economy, most likely accompanied by a rise or decline of animal husbandry and / or a decline or rise of crop production, so the study of fenced areas, in which an observation of small garden areas would be merely a footnote, is an important field of research for the understanding of agriculture and economy throughout history. So without being very interesting in itself, a fence can be the start of an intriquing discussion about possession, boundaries, herding, transhumance, fodder production, population density and so on. Yet here we only want to look at the more direct properties of a fence or wall.

Within the immediate surrounding of a farm there is no area that has no need of either keeping animals in or out. Only in the wider vicinity animals might roam free, possibly protected by herders and / or dogs. So a fence, though no tool, might be an important feature of a reenactment-garden.

The first thing that comes to mind is of course a wattle fence, as they were found basically anywhere in early medieval northern and western Europe *(Ill.1.a)*. Such a structure is relatively easy to make and consists of upright posts in relatively close distance to each other, as well as hazel or willow rods woven between them to make a basketlike wall. Be sure not to underestimate the material required though, a lot of sticks go into some meters of wattle fence.

Modelled after modern British examples, one could also make hurdles as a compromise stand-in for a permanent wattle fence. Hurdles are lengths of wattle fence premade with thin, pointy posts. The Hazelrods of the weave are bent around the endposts and woven back into the structure to make it a solid stretch of fence, that can be transported and stuck into the ground wherever one likes, for example to temporarily encircle a sheep pen for rounding up or shearing *(Ill. 1.b)*. Using hurdles, one can fence a garden plot temporarily, or even take them to events if they have a big enough transport vehicle, for making up plots for merchants or simulating a more populated Iron Age surrounding than just a plain boring field.

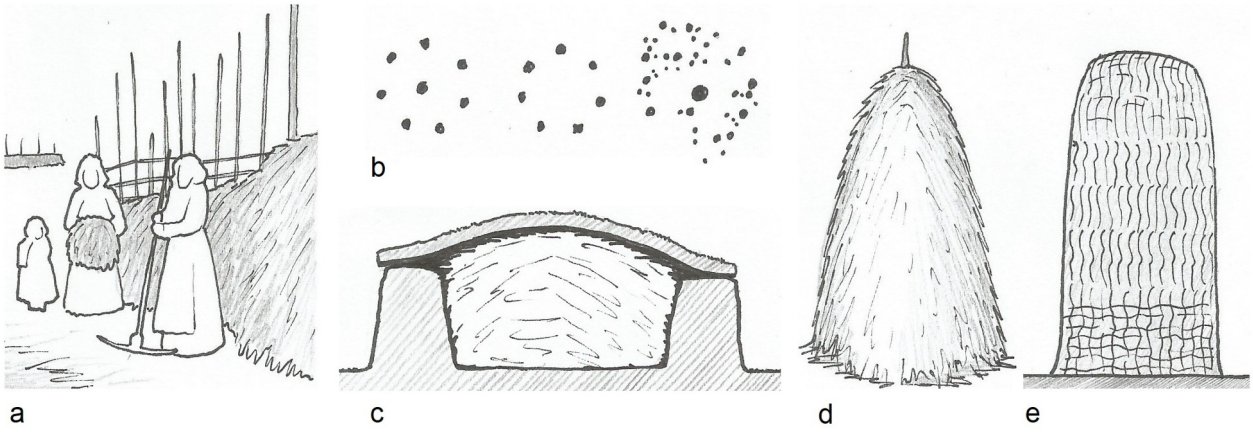
Another method of fencing, found in Hedeby, is to stick wooden Planks into the earth butt to butt, forming a sort of flat fence *(Ill. 1.c)*. It is more expensive with modern wood, and much more work if one wants to do it the authentic way with split planks, but it can look very nice if done right. Good luck if you depict Icelandic settlers, who erected turf walls *(Ill. 1.d)* to protect their enclosures, and had to set much time aside for building them according to medieval Icelandic lawtexts. A vast system of turf walls was erected in Iceland in the tenth century (and abandoned before the twelfth), but it is possible that this system replaced earlyer wooden fences that might have been built in the earliest settlement phase, when birch forests still existed in Iceland.



Ill. 1.: *fences*
a: wattle fence as found in various Viking age settlements throughout northwest Europe; b: modern british hurdle, a kind of mobile wattle fence; c: plank or board fence as found in Hedeby; d: cross-section of an Icelandic turf wall, reaching up to shoulder-hight as was demanded by medieval Icelandic law (Grágás).

Even if you only have the field on which an event takes place, and no way of transporting hurdles, agricultural themes can be displayed, such as the drying and storing of hay, since the grass is probably going to be cut before the event anyway.

Drying might have taken place on wooden structures looking like a wooden fence (permanently or temporarily built in the hayfield) with several horizontal poles on which the grass is hanged *(Ill. 2.a)*. Such a device can be built with sticks and next to no effort in a very short time. We do not have definite archaeological evidence for this method (which would be indistinguishable from a regular fence anyways), we can only list it as a possible other meaning of the word „*heygarður*“ (see below), maybe used in the first settlement period of Iceland or back in Norway, where wood was more common than in Iceland. In Norway, the rest of Scandinavia and big parts of Europe in general this method was used in the more recent past quite a lot, though we cannot say for sure if it is of great antiquity, and neither do we know if there is any connection between it and the Icelandic haystack-walls.



Ill. 2.: *hay drying and stacking*
a: wooden drying fence based on a Norwegian photograph from 1915; b: postholes from helms as found for example in Germany, the Netherlands and England; c: cross-section of a haystack-wall *(heygarður)* with haystack resting inside and turf covering the stack; d: hay heap with middle pole, probably underlayed with any means of separating the hay from the wet ground (branches, bed of bracken); e: hay heap from a 12th century depiction - note the different structure in the lowermost quarter!

After drying on a fence-like structure or directly on the field the hay would have been brought into a barn or possibly a loft over the stables, or else left in a densely packed heap outside. Leaf fodder, which is no more than twigs cut from trees, can also be stacked and dried in heaps. It was most likely an important by-fodder for animals in the winter, so if you cut or prune your garden trees, you might consider stacking the shoots and twigs as well.

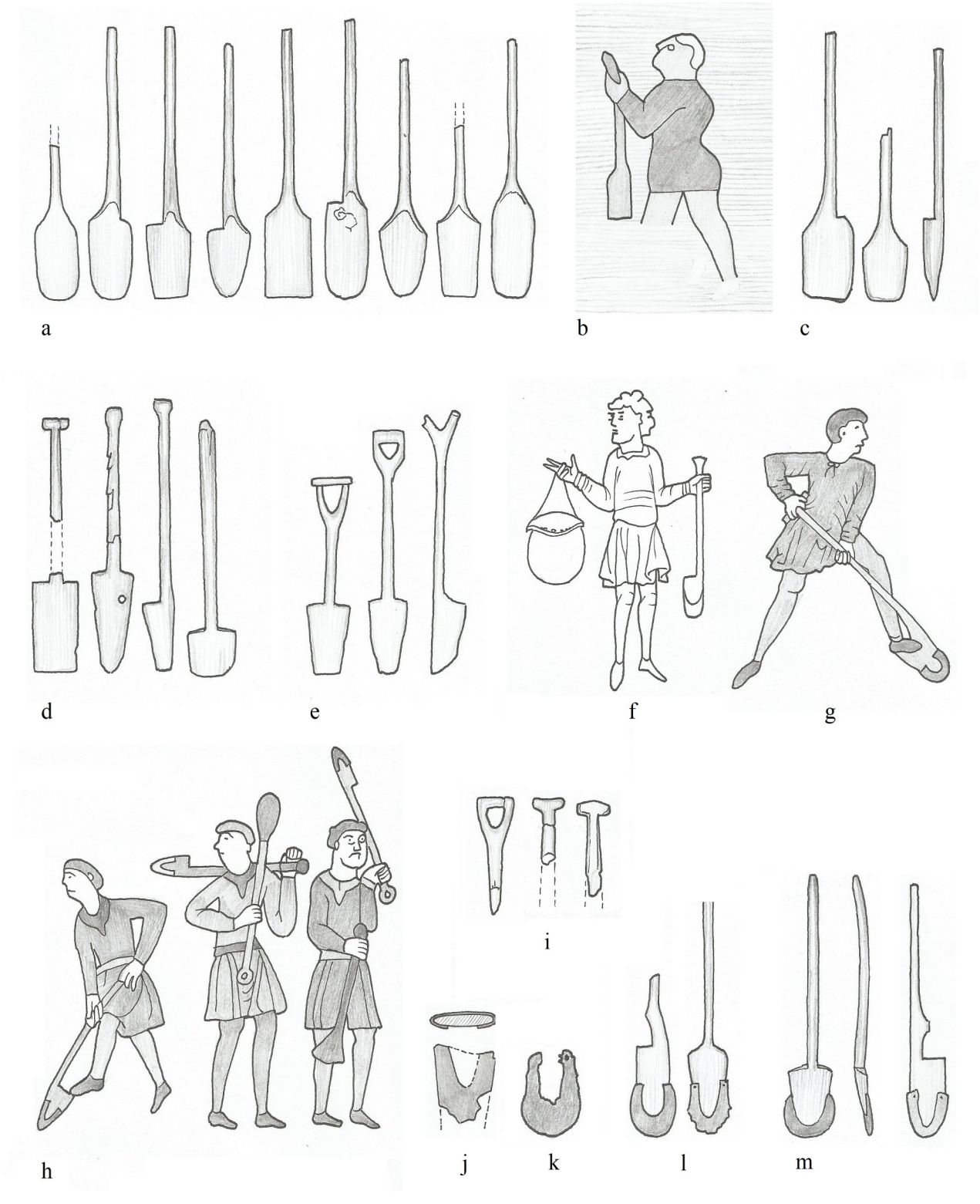
Hay-heaps with poles stabilizing the middle are known from later medieval Anglo-Saxon depictions, and there is early medieval evidence in England, Germany and the Netherlands for so called helms *(Ill. 2.b)*, round wooden frames on which such heaps or even sheaves of corn might have been stacked, consisting of the posthole of a middle pole (which is optional) and several smaller postholes surrounding it, originally supporting a low platform or a star-shaped grate on which the hay rested. These helms look like an elaborate variant of the more primitive method of erecting a middle pole and letting the hay rest on top of randomly placed branches of wood or a thick bed of fern or bracken (which is said to keep moisture and rodents away). This method is still practiced, for example, in rural Alpine regions and parts of Romania.

There are no finds of similar structures within Scandinavia as far as I know, yet there is written evidence within the Icelandic sagas of hay stored outside the house, likely but not necessarily stacked inside a haystack-yard. Even uncovered, with the outmost layers raked into a vertical

direction, hay can last up to two years outside throughout the seasons, surviving rain or snow without going bad, as long as it does not touch the wet ground directly. I would argue that hayheaps might have been placed on top of branches too keep them from the ground, though I have to admit that there is no strong evidence to back this up. A twelfth century manuscript depiction *(Ill. 2.e)* shows a heap of hay with vertical strokes, indicating the direction of the hay. In it's lower quarter there are also horizontal strokes, maybe implying that the hay there was layed out vertically, or that a bed of another kind of plants might lay underneath, yet the precise meaning of this detail is unclear at best, and of course the depiction is outside our Viking Age timeframe.

A feature sometimes mentioned in the sagas is the **haystack-wall** or **-yard** (old Norse *heygarður* or *stakkgarður,* with *„garður“* meaning either wall / fence or yard / enclosed area). These words from Icelandic sagas describe a turf wall surrounding a small yard where hay is stored *(Ill. 2.c).* A plan of a Viking age farm based on mesurements by Daniel Bruun shows a „haystack-wall or -yard“ as a U-shaped wall built adjacent to the wall that surrounds the hayfield. Hay was stored inside such enclosures and covered up against rain and snow, possibly with turf sods - the Icelanders answer to any given problem. In Gísli Súrsson's saga there is an episode in which the hero and his men have to rush outside during a storm to secure a haystack that has been uncovered by a gale of wind. In his absence, mischief unfolds, as is common in this kind of stories. It is stated that haystack-walls were quite high, with the hayheap inside being even higher than the surrounding walls, turning the haystack-yard into a makeshift stronghold if the violent nature of Icelandic storytelling calls for it.

3. Tilling and planting



Ill. 3.: *Spades in archaeology and depiction*
a: spades found in the Oseberg ship burial; b: man carrying spade depicted on a textile fragment from Oseberg, 9th century; c: spades found in the Gokstad ship burial; d: spades found in the Jelling mound; e: spades with forked handles from Elisenhof / D, Terp Oostrum / NL and Hessens / D (the one from Hessens from the 11th century); f: iron shod spade depicted in the Caedmon manuscript, Anglo-Saxon, 10th century; g: iron shod spade depicted in the Tiberius calendar, Anglo-Saxon, 11th century; h : iron shod spades and possibly shovels depicted on the Bayeux tapestry, Norman, late 11th century; i: toolhandles possibly from spades or shovels, one from 12th century Cork (forked), two from 9th to 10th century Hedeby (T-shaped); j: possible iron blade from Hedeby; k: spade mount from medieval Oslo; l: medieval iron shod spades; m: modern ironshod spades from Rogaland / Norway (front and side) and Hungary.

Wooden spades are maybe the most essential farming tool and a great addition to any reenactors toolkit, since it can also help along in a campsite, creating firepits as well as the notorious rainwater-ditches we all had to dig at some point. In farmsteads or gardens they help turning over the soil to prepare it for the seed. On a big field this would have been achieved with ploughs. The development of ploughs throughout the medieval period is crucial for the understanding of agriculture back then, but that is really a topic on its own and goes way beond most reenactors budgets, so let´s get back to spades.

Thankfully we have an abundance of them, for example from the Jelling mound *(Ill. 3.d)* and from the Gokstad and Oseberg ship burials *(Ill. 3.a, c)* (the latter also represented in one of the narrative motives on the Oseberg tapestries *(Ill. 3.b)*). They are each hewn out of one piece of hardwood and vary in size and shape, some being of very simple spatula-like shape, some sporting one tapered and one right-angled upper side of the blade, clearly designed for stepping onto it, helping the wooden blade to cut into the earth. This technique can be observed in various depictions. The spade blades were mostly cut square or round at the lower, working end, but sometimes shaped into a point to pierce into the earth. One example from Gokstad is really just a narrow piercing tool with a footstep *(Ill. 3, c, 3rd from left)*. Whereas most of the specimen have simple, strait shafts, one of the Jelling examples has a T-shaped grip on the end, as we are used to see on modern spades. There are some broken, t-shaped tool handles in Hedeby *(Ill. 3.i)* that could be from spades and an illumination in the Tiberius calender shows an iron shod spade with a t-handled grip *(Ill.3.g)*. Other Jelling spades have knobs on the end, like pommels or possibly the remains of a T-handle. Knobs of various kinds also accur in period art, most notably a kind of pommel with a hole seen on the Bayeux tapestry, that has no correspndance in the finds. An undated find from Elisenhof even has a handle resting on a forked shaft, which is certainly the most ergonomic and could be backed up by a one piece Frisian example and an 11th German spade *(Ill. 3.e)* on which a forked shaft without grip remained, as well as a remaining broken toolhandle of that type from 12th century Cork / Ireland *(Ill. 3.i)*. These spades are, hovever, not the norm and probably generally later in date than our period of interest, since they also pop up in much later artwork.

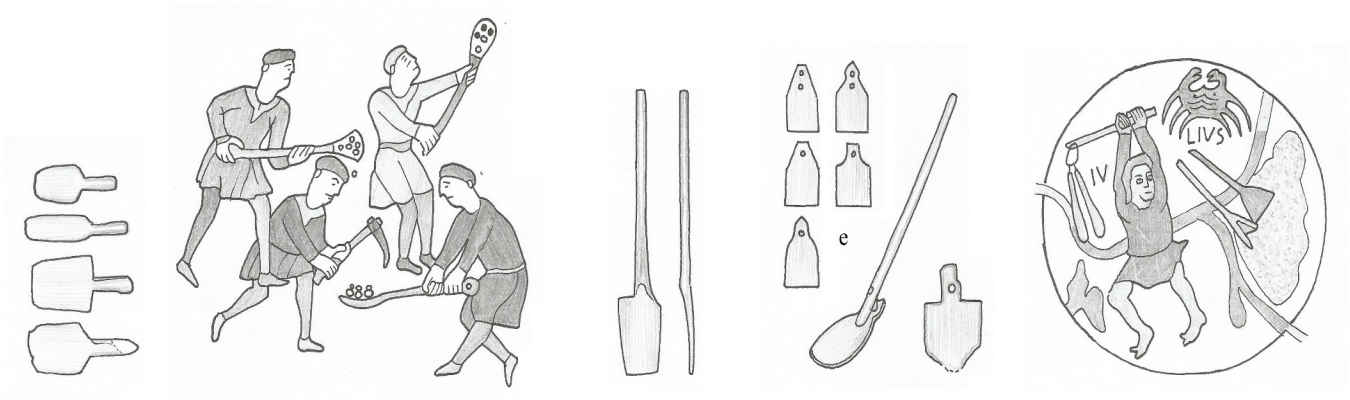
Allthough the remaining Viking Age spades are made of wood only, there are several depictions of very similar spades in tenth to eleventh century Anglo-Saxon manuscripts *(Ill. 3.f, g)* and on the Bayeux tapestry *(Ill. 3.h)*, which show iron edges mounted to their blades. A find from Hedeby might represent a spade-mount like that *(Ill. 3.j)*. Later medieval finds from Scandinavia and Europe in general look more or less like said depictions *(Ill. 3.k, l)*. The manuscripts are mainly from Britain, though, and it might be that iron blades were just not around in Scandinavia in the Viking age but arrived later, or that only unshod spades were left behind in the scenes of grave-robbery most of them were found in. Some scolars suggest that ironshod spades were known but rare in early medieval times, but got common in the high middle ages, possibly around 1000. They might have stayed in use for a long time since then, for traditional ironshod wooden spades, as seen for example in Rogaland / Norway, in Hungary or in Serbia look more or less the same as medieval finds and depictions *(Ill. 3.m)*. Especially traditional peat spades, for example from Ireland, Denmark or Scotland, are often very much like Iron Age spades concerning their wooden parts, although the iron blades took on very specialised forms.

In addition to full size spades, there are small **hand-shovels** found in Hedeby *(Ill. 4.a)*. They are said to have played a role in baking bread, or to be very useful when digging in confined areas, such as within a well. We think that an item as simple as a flat or slightly concave wooden blade with a handle is not easily determined very strictly in its use. We include hand-shovels here because they sometimes come in handy within the context of a small garden as well – especially when it comes to planting.

The finds are not as giving with **proper shovels**. The bayeux tapestry from the 11th century shows men digging with spades, and some of them are clearly hauling stones or gravel up onto a mound with implements that might be shovels rather than spades *(Ill. 4.b)*. We can see on the depiction that at least one of that tools has a hollow blade rather than being flat. On the other hand, this hollowing is not very pronounced, and a silght concave shape can be found on some Oseberg spades, without being so pronounced that they appear as a shovel rather than a spade *(Ill. 4.d)*.

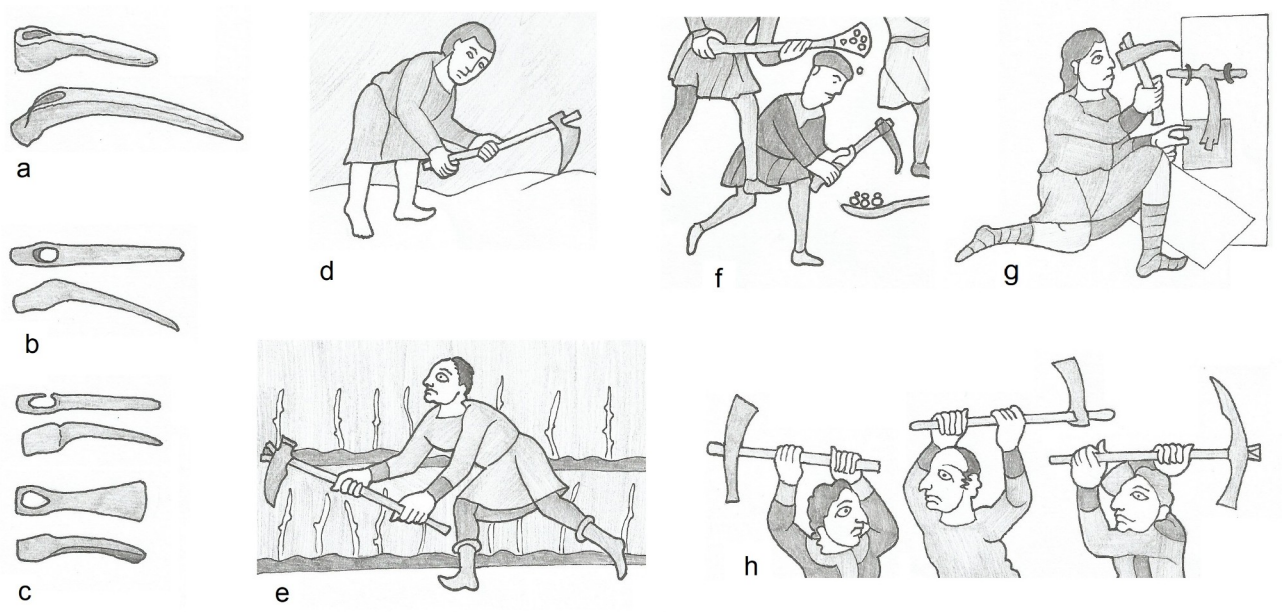
In the Hiberno-Norse and Anglo-Scandinavian areas, i.e. in Dublin and York, there was another type of angled spade or shovel. It consisted of a flat wooden blade, into which a separate shaft is fit at an angle, held in place by pegs and possibly a binding *(Ill. 4.f)*. These shovels where in use from the tenth century (and possibly earlier) and stayed until the fifteenth century. Their angled design allows for more ergonomic shoveling motions but does not lend itself to cutting into the earth like the one-piece examples do. They might be intended for shoveling more than cutting. The tools on the bayeux tapestry however do not seem to resemble this kind of flat shovel. Interrestingly there is a wooden artefact from Hedeby that is listed as „construction piece“, (a category of various bored through and pegged pieces without clear function), that resembles an Anglo-Scandinavian shovel blade *(Ill. 4.g)*. It wold be a type d in Morris' typology of these tools, but that is of course only a speculation.

However upseting the lack of proper shovels might seem, there is no big need for them in agriculture that is not covered with spades, and if one uses buckets or baskets for transporting the earth one could argue that even in construction shovels might not be strictly necessary. In processing grain they might come in handy for shovelling the threshed cereals into containers, but that too is far from a necessity, with plenty of other houshold implements that might fulfill that task, like ladles, baskets or bowls. There is a twelfth century depiction on an Itailan mosaic that shows threshing corn and two shovellike objects sticking in a heap of grain *(Ill. 4.h)*. That implies such a use in general, but nothing similar can be found in early medieval Scandinavia.



Ill. 4.: *handshovels and proper shovels*
a: handshovels found in Hedeby, 9th to 10th century; b: workers on the Bayeux tapestry using spades or shovels for hauling earth or gravel onto a mound - note the curved shape of the bottom right tool; d: spade with slightly hollowed blade from the Oseberg tapestry – a possible explanation for the curved shape on the Bayeux depiction; e: blades of Anglo-Scandinavian / Hiberno-Norse / Anglo-Saxon shovels - 5 types according to Morris; f: possible reconstruction of an Anglo-Scandinavian shovel; g: wooden oject from Hedeby, listed as „construction part“, would fit in Morris' typology of shovel-blades (type d); h: 12th century southern Italian mosaic possibly depicting shovels in grain processing.

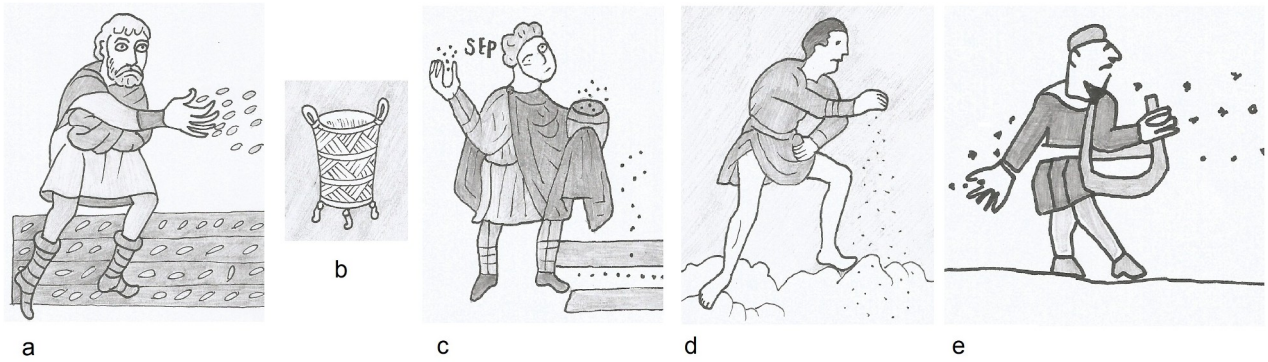
Hoes, or rather their metal heads, were found for example in Norway and are described in Jan Petersen's „Vikingetidens redskaper“ *(Ill. 5.a, b, c)*. Both spike-shaped and bladed variants existed, and again we can look to period depictions that show them in use. Items similar to the finds are shown to be mounted on two handed shafts. On two depictions from the Frankish Stuttgart psalter, we even see in detail that the shaft of the tool is fixed into the hole using a wedge in the middle, as is common practice until today. One depicton from Stuttgart shows a one-handed pickaxe-like tool that is used for breaking up a locked door *(Ill. 5.g)*. Hoes are a really helpful tool when tilling the land, especially if the soil is very rocky or full of strong roots that have to be cleared before sowing.



Ill. 5.: *hoes and / or pickaxes*
a: two hoes (norw. „*hakke*“) depicted in Jan Petersen's „Vikingetidens redskaper“; b: hoe from Høisæt, Tinn, Vestfold og Telemark, Norway, dated to the Viking Age; c: two hoes from Hjelle, Nord-Aurdal, Innlandet, Norway, dated to the late Iron Age; d: Adam using a hoe, depicton from the Vivian bible, Frankish, 9th century; e: man using hoe depicted in the Stuttgart psalter, Frankish, 9th century; f: man using pickaxe or hoe in a digging context, Bayeux tapestry, Norman, 11th century; g: breaking down a door with a one-handed tool, Stuttgart psalter; h: hoe- and pickaxe-like tools, Stuttgart psalter.

For **sowing** nothing very special is needed. The seeds, stored somewhere dry, need to be taken out to the field, possibly in a basket or a bag. In Brennu Njáls saga, Hǫskuldr is described to use a bag for the task, which he takes in his one hand when going out into the field, while he grabs his sword with the other.

Once carried to the field, smaller portions of the seeds might be carried for the actual sowing within the lower front part of the tunic, pulled up like a bag *(Ill. 6.d)* or within a bag formed by one´s cloak *(Ill. 6.a)*, both techniques seen in the manuscripts. Thus the sower does not need any tools to bring out the seed other than his clothes, although bags, baskets or any containers could have been used. A roundish container is used on a ninth century Frankish illumination *(Ill. 6.c)*, whilst a very small sowman on the Bayeux tapestry holds a peculiar object that is not easy to determine *(Ill. 6.e)*. Is it a basket or some sort of bag slung over one shoulder, like we use to see in late medieval depictions? Hard to say, and I wouldn´t want to speculate on it, especially with the depiction being very late and Norman anyways.



Ill. 6.: *sowing*
a: seeds carried in a folded cloak, illumination from the Stuttgart psalter, Frankish, 9th century; b: basket standing next to a ploughman, possibly holding seeds, Stuttgart psalter; c: sowman with some sort of container for seeds, manuscript from Salzburg, Frankish, 9th century; d: fold of the tunic for holding seeds, Tiberius Calendar, Anglo-Saxon, 11th century; e: sowman with strange object (a sack, a basket, possibly fastened at the shoulder?), Bayeux tapestry, Norman, 11th century.

After sowing, the Seeds would have to be mixed with earth, or better covered with it, which on big fields would be achieved with a harrow. On a small scale this might be done with a rake, which, along with forks, may also have been used in spreading manure on the hayfields – but more on that later.

It is unlikely that big fields were watered by hand. The weather played (and still playes) a major role in agriculture, and that might even apply to smaller fields or housegardens. We know of no specialised watering-device, but in theory any vessel, be it a jug, a bowl or a bucket, would do the job. The Icelandic lawbooks feature water-rights that may indicate that some fields were irrigated, though surely if this was in practice it must have taken place on a small scale, giving the difficulty of building and maintaining anything bigger than a simple ditch.

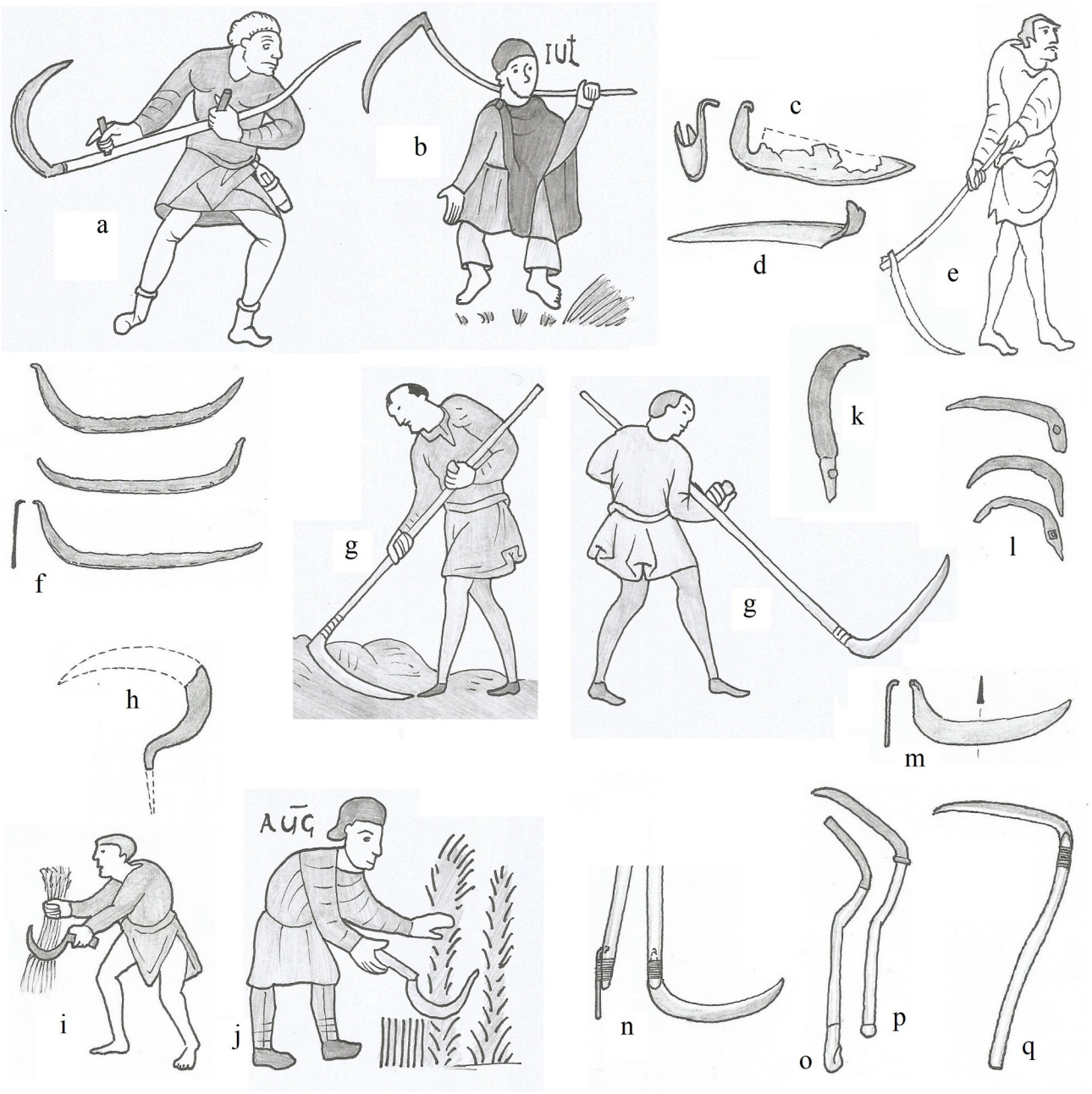
4. Reaping the harvest

Sickles and scythes are commonly found in Viking age Scandinavia. Jan Petersen listed about 900 sickles in Norway alone, dating from the Merovingian period to the Viking age. There are two main types of sickles: „balanced sickles“ and „hooked sickles“

Balanced sickles, which are sharply curved, tanged blades, are not arriving in Norway, Finland and Sweden before 1100, but are present in Hedeby (present day Germany but belonging to Denmark at the time) with two fragments, probably of Frankish or Slavic origin *(Ill. 7.h)*. Manuscript illuminations from 9th century Frankia clearly show balanced sickles, as well as 11th century examples from England *(Ill. 7. j, i)*. They tend to have rather short, one-handed grips, which, as the finds show, had tangs that went all the way through and were bent over at the end of the grip. Balanced sickles are shown in use while reaping the corn in harvest season, whereas scythes are normally depicted for haymaking.

Most sickles found in Scandinavia are **hooked sicles** *(Ill. 7.m)*. They are not as sharply curved, only slightly bent, with a tang that is set in a right or flat angle to the blade, resembling smaller scythes. Thus it is not easy to determine what is a small scythe compared to a big sickle. A good indicator for a proper sickle might be a riveted, straight tang *(Ill. 7.k, l)*, whereas scythes, however small or large, are more likely to have a bent tang *(Ill. 7.f)*. Like many Scandinavian tools, scythe- and sickleblades have a tang that is inserted into a shaft, but for the most part this tang is bent upwards at the end, in a right angle, suggesting that the blade was strapped to a shaft resting over the tang, using some sort of wrapping or even, as done with similar tools today, a metal ring *(Ill. 7.n)*. This is true for much of the sickles too, further strengthening the possibility of them being but smaller scythes. Short-handled scythes are in fact traditionally known in modern Norway, having a somewhat crooked handle and being used around the house to trim down vegetation that grows alongside walls or fences *(Ill. 7.q)*. Blades of Norwegian small scythes are refined versions of the ironage finds and were traditionally bound to the shaft with mountain birch roots (later metal wire was used). Finds of short-handled scythes of the „gorbuschka“ type from 11th and 13th century Novgorod *(Ill. 7.o, p)* are very much alike those traditional Norwegian tools. Hooked sickles or small scythes are not represented in period artwork as it seems, but that is not surprising since balanced sickles were in use where most of said art was crafted.

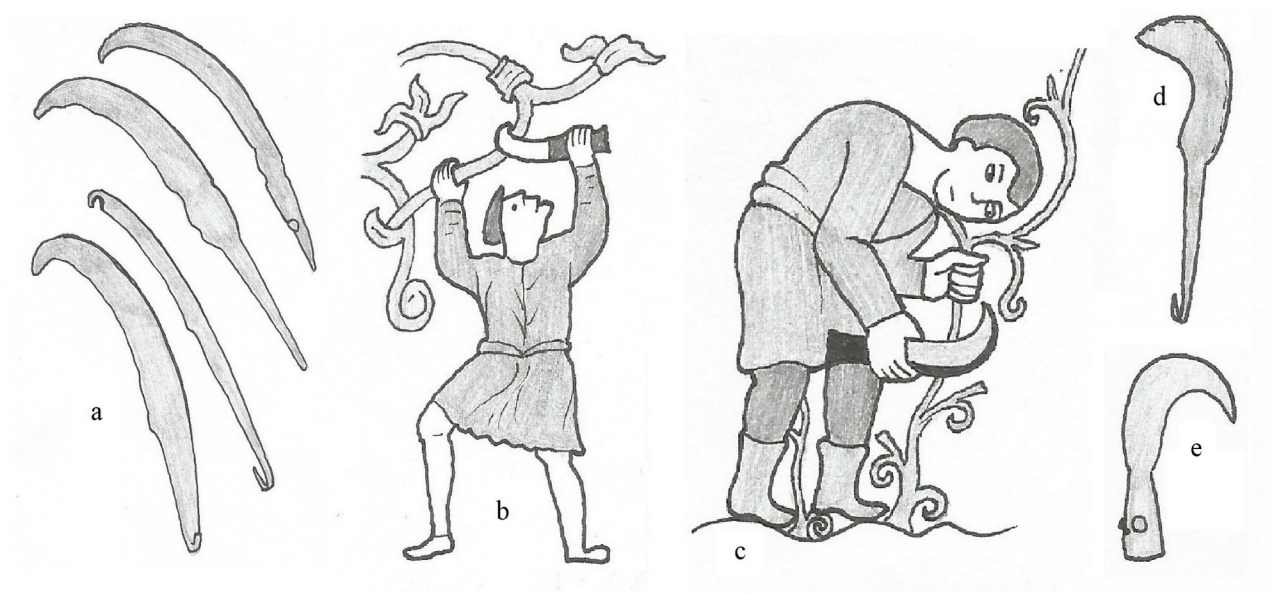
As to how exactly the shafts of **proper scythes** might have looked, we know very little. We must look at Frankish and Anglo-Saxon depictions again, which show us mixed results. While a Frankish calendar from 9th century Salzburg shows us a curved staff without any protruding grips *(Ill. 7.b)*, another 9th century Frankish depiction clearly shows two protrusions used as handgrips, and a curved upper end of the shaft possibly resting on the reapers sholder *(Ill. 7.a)*. The scythe blades in these depictions are mostly of more continental types. In case of the very scetchy Utrecht psalter (Frankish, 9th century) the blades are of a type not represented in archaeology to my knowledge, seemingly sporting a hole for the shaft, with the shaft wedged in place *(Ill. 7.e)* like one would expect it on an axe, hammer or, as we have seen, a hoe. 11th century Anglo-Saxon depictions, on the other hand, more or less clearly show the type of blade found within Viking age contexts, mounted with a binding onto long, straight shafts with one protruding handle *(Ill. 7.g)*, but they are held by the farmhands in such a way as they would not be able to use them effectively. The problem is that there are many different traditional ways to construct a scythe handle - a diversity reflected in period art - and many ways in which they adept to different body motions, so that any reconstruction of a scythe handle must, in my opinon, be a speculation at best.



Ill. 7.: *scythes and sickles*
a: man with scythe from the Martyrologium of Wandalbert of Prüm, Frankish 9th century; b: scythe from a manuscript from Salzburg, Frankish, 9th century; c: Frankish scythe blade from Tournedos-sur-Seine / France, 9th to 10th century; d: Frankish scythe blade from 7th to 8th century Belgium; e: scythe as depicted in the Utrecht psalter (Frankish, 9th century), not resembling the archaeological material; f: typical Iron Age Scandinavian scythe blades from Norwa;y g: men with scythes resembling the Scandinavian finds depicted in the Tiberius calendar, Anglo-Saxon, 11th century; h: „balanced" sickle, a type more common in Frankish and Slavic regions (this example being a find from Hedeby / present day Germany); i: balanced sickle in the Tiberius calendar; j: balanced sickle in the Salzburg manuscript; k: sickle from Viking age Sweden; l: Viking Age sickles from Norway – a tanged rivet is a sign for a „proper" sickle in contrast to a smaller scythe; m: typical Viking Age Scandinavian „hooked" sickle; n: possible mounting of the blade based on traditional Scandinavian tools; o: „Gorbuschka", small scythe found in 11th century Novgorod; p: Gorbuschka found in 13th century Novgorod; q: traditional Norwegian small scythe based on a painting by Hans Dahl, 19th century.

Small, tanged blades, straight at the back and forming a crook or hook at the end, similar to later English billhooks, were found in Norway and dated to the Viking Age *(Ill. 8.a)*. In Jan Petersen's „Vikingetidens redskaper" they are called „lauvkniv", leaf-knife, and could be interpreted as small **billhooks or pruning knives**. Similar blades from medieval Schleswig are labelled „Laubmesser" in the museum in Gottorf castle, with the same meaning: leaf-knife. In Dublin a kind of billhook with a socket rather than a tang was found *(Ill. 8.e)*, being, as is often the case with Hiberno-Norse

finds, very unique in apearence, whereas a find from York resembles a transition between sickle and billhook *(Ill. 8.d)*. In later medieval depictions crooked blades are most commonly shown for pruning grapevines. There was no wine cultivation that we know of in Scandinavia, and it is questionable how cultivated fruit trees were back then, but we do know that some fruits like crabapples, as found in Oseberg, or Plums and wild cherrys like in Hedeby, were around at the time, so the pruning of plants might have taken place on a small scale. A more likely use is the harvest of leaf fodder, meaning thin, leaf-bearing twigs from trees, a common by-fodder given to farm animals in the winter in addition to hay. Finds from the Lendbreen icepatch in Norway suggest that leaf-fodder in form of freshly cut birch twigs was transported over the mountain pass, probably packed onto horsedrawn sleds. It has to be said, though, that a „lauvkniv“, and also the very smallest proper sickles, which are no bigger than a billhook or even smaller, could have had a wide variety of different uses, and leaf-fodder can be cut with a wide variety of tools, so one should not easily jump to conclusions here.



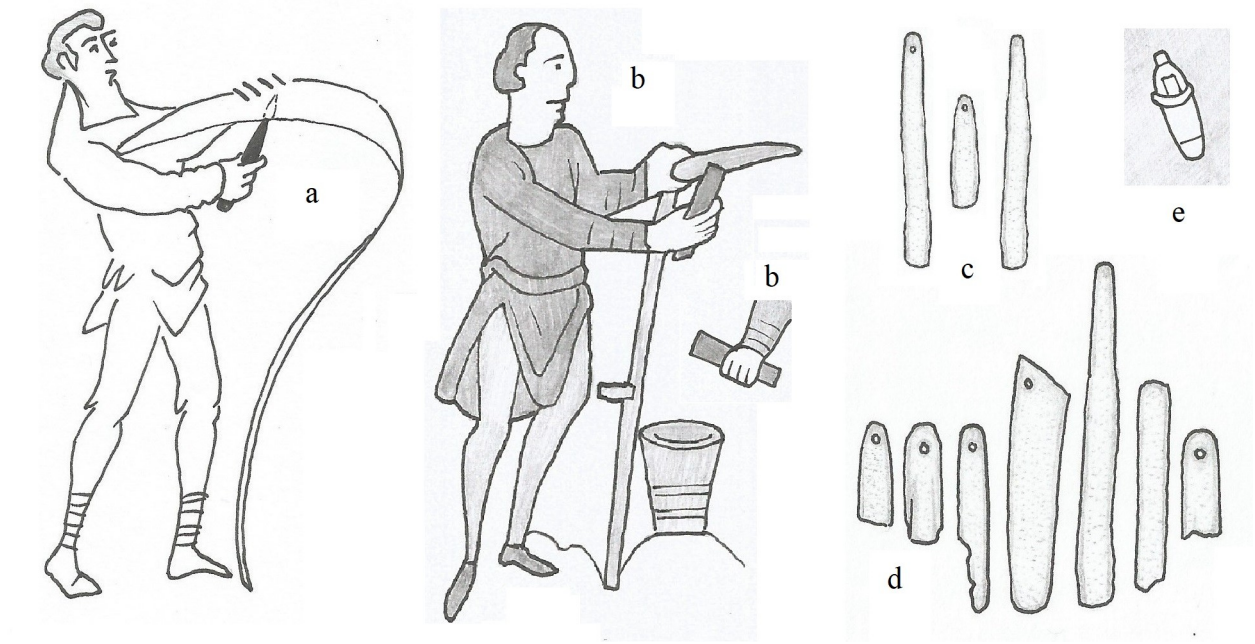
Illus. 8.: *pruning knives and billhooks*
a: „lauvkniver“ - small, straight tanged crooked knives as depicted in Jan Petersen's „Vikingetidens redskaper“; b: pruning knife depicted in the Tiberius calendar, Anglo-Saxon, 11th century; c: pruning knife depicted in a German manuscript, 11th century; d: blade found in Anglo-Scandinavian York, baring resemblance to sickles and later medieval billhooks, maybe a transitional speciman; e: peculiar billhook-like tool with socket from Hiberno-Norse Dublin / Ireland.

Reaping blades like sickles and scythes are used all day every day during harvest season. Small wonder they tend to dull down very quickly and have to be resharpened often out on the field, so let us not forget that sharpening devices are also important items in daily agricultural life.

Scythes with thin blades, as are common in most parts of Europe today, need to be „knocked“ in regular intervals, using a hammer and a small anvil (indeed an anvil very similar to Viking Age finds), before they get finished with a whetstone. In Scandinavia, however, modern scythes tend to be sturdier and can be sharpened sufficiently with a stone only, not needing the knocking process. We do not exactly know, however, how thick the edges of the much corroded finds might have been, so we cannot say for sure weather knocking was performed or not, only that the tools necessary were easily available. There is proof of sharpening scythes with **whetstones** *(Ill.9.c)* from manuscript illuminations though, and plenty of said items in the archaeological material. The ninth century Frankish depictions are unclear on the shape of the stones. Whilst the Utrecht psalter *(Ill. 9.a)* portrays a pointy stone (much alike modern scythe-sharpening whetstones), the Martyrologium of Wandalbert of Prüm *(Ill. 9.b)* shows one rectangular end of a possible whetstone protruding from

what appears to be a pouch resembling traditional whetstone containers. The eleventh century english Tiberius calendar *(Ill. 9.b)* also shows rectangular stones for sharpening scythes. Viking age whetstones, as found all over Scandinavia, tend to be square or rectangular in cross-section, forming a long or oblong shape that is sometimes rounded off on one or both ends and often pierced on one end, which fits best with the rectangular depictions. The pointy form of the Utrecht psalter could be crudely painted, for the illuminations of that particular manuscript are quite scetchy, but it has to be noted that the parallel long sides of a rectangular whetstone could very likely be worked down and narrowed at the end from constant use, possibly resulting in a shape more like modern scythe whetstones.

Another resource needed for sharpeing blades is water for cooling. It can be taken from a nearby body of water or brought to the field in any type of vessel, for example a bucket, as seen in the 11th century calendar depictions, or in a dedicated container, as probably depicted in the Martyrologium *(Ill. 9.e, 6.a)*. I am not aware of any finds that are interpreted as such a vessel, so the very vague depiction is the only hint towards how it might have looked like. The general principle is very simple, just a long-ish container with some sort of attachment for suspending it from a belt, open at the top and water-filled. Traditional modern specimen are often made from cow horns or turned from wood.



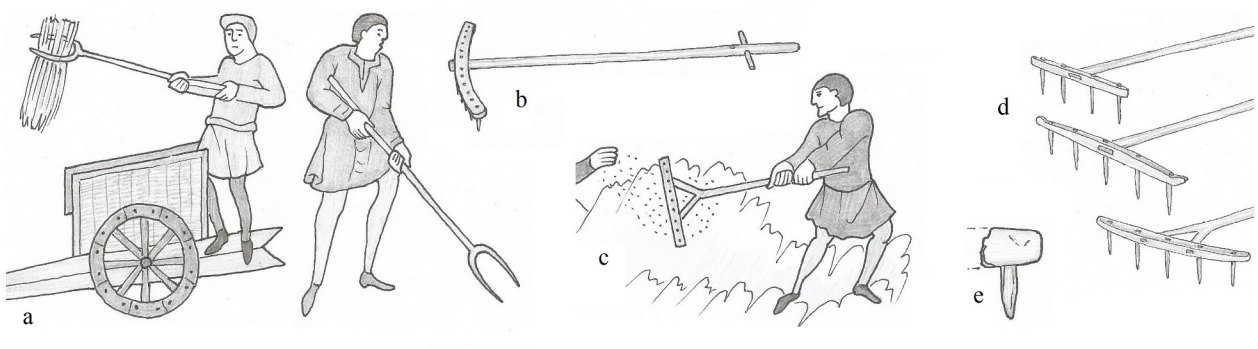
Illus. 9.: *sharpeining scythes and sickles*
a: pointy whetstone as depicted in the Utrecht psalter, Frankish, 9th century; b: rectangular whetstones depicted in the 11th century Anglo-Saxon Tiberius calendar – mind the bucket, probably containing water for cooling!; c: typical Iron Age Scandinavian types of whetstones; d: a variety of whetstones found in Kaupang / Norway – mind the narrowed down upper half of the fifth speciman from the left!; e: probable whetstone within a container worn on the hip, depicted in a 9th century Frankish manuscript (see Illus. 7.a for the whole picture).

Once the blades have done their job, mowing down grass or reaping corn, the harvest needs to be brought in. For cereal plants no further tools are necessary to do this (allthough forks might come in handy), since they are, according to 11th century Anglo-Saxon depictions, bound into sheaves and carried home by farmhands or on carts. Things are different for grass though, which needeeds to be spread and turned over on the field from time to time to dry and become hay. For this, and for gathering it into heaps and feeding it to the animals, rakes and forks are needed.

There are two finds from viking age Hedeby that might have been the heads of **rakes**. One, made of willow, sports 4 broken willow teeth, 6 cm apart from each other. A hole for a shaft also remains,

measuring 1,9 cm in diameter. Another find is just the end of a possible rake head with one surviving tooth, the tooth measuring 8,7 cm in total, so rather short in comparison to modern rakes *(Ill. 10.e)*. Comparative finds from Elisenhof match the Hedeby specimen, but their teeth are closer together, and in modern day Schleswig wooden rakes stayed relatively similar until today. We can not be sure weather the Hedeby rakes had single or forked shafts. Very similar finds from Novgorod *(Ill. 10.d)* show both variants, whereas the Elisenhof specimen exclusively use the forked method. In Anglo-Saxon depictions rakes show up in the 11th century, later than the 9th to 10th century examples from Hedeby. They would likely be used in haymaking, but in case of the Julius calendar they are shown for harrowing the soil after sowing, covering the seeds with earth *(Ill. 10.c)*. A migration period harrow found in Thorsbjerg Mose / present day Germany *(Ill. 10.b)* is basically just a big rake with a curved head and a sort of cross-handle on the shaft. Harrows are horse-drawn contraptions used for mixing the seed into the soil and sometimes for rubbing dung into the earth, dung being the only fertilizer available in the early medieval period.

Forks may also have been used for spreading manure, but also for hauling hay onto heaps and carts or to feed it to the animals. There is no real archaeological evidence for forks I am aware of, though a simple forked stick with sharpened, possibly bent to shape ends will do the trick. Forks in eleventh century Anglo-Saxon depictions look just like that: simple two-tipped forked poles. Forks constructed with multiple parts were built much later, although English illuminations from the twelfth century suggest that the forks shown there might not be naturally grown, but rather split and bent sticks, with a binding preventing further splitting down the handle. That being said, such a binding would also be useful on a natural fork, and is not represented before the 1100s anyways.



Illus. 10.: *forks and rakes*
a: forks depicted in the Tiberius calendar, Anglo-Saxon, 11th century; b: Migration period harrow from Thorsbjerg Mose / present day Germany, resembling a big rake; c: rake used as a harrow depicted in the Julianus calender, Anglo-Saxon, 11th century; d: Rakes from Novgorod resembling the possible fractured rake heads from Hedeby; e: possible broken end of a rake head, one of two rake-like finds from Hedeby / present day Germany, 9th to 10th century.

Processing the harvest

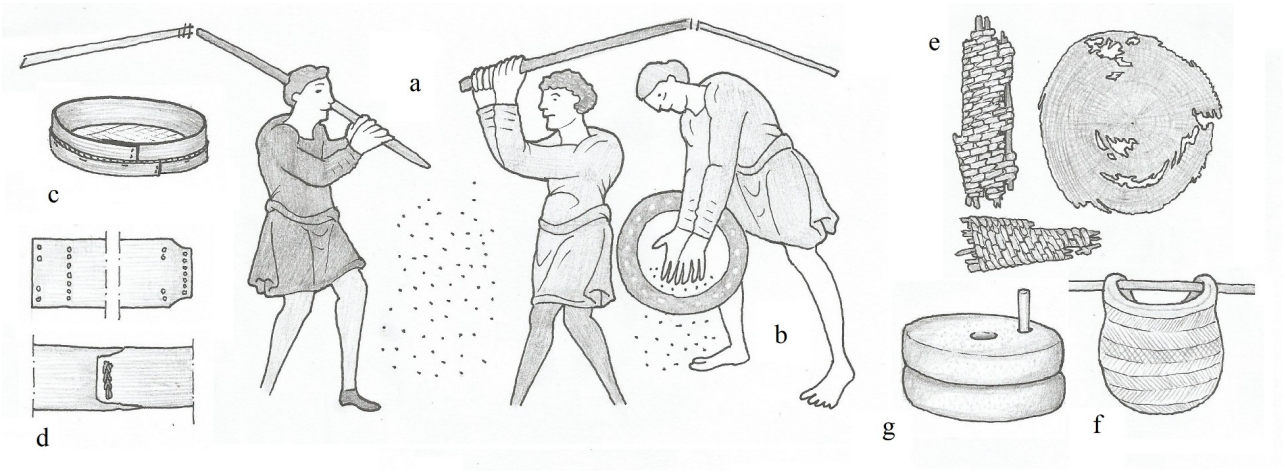
The hay is stacked, the kale preserved in whey and the herbs are drying in the rafters, and yet some of the harvest is demanding further processing. The barley and rye, for example, need to be separated from straw and husks, grains have to be milled into flour and utility crops shall be turned into fibres.

Threshing must have taken place in Scandinavia, though much like with forks we do not have certain evidence for exactly how it looked like. Again the eleventh century depictions from England show us very conventional hinged **flails** for the task *(Ill. 11.a)*, but I don´t know any resembling item found in Scandinavia. In this case, I simply do not know the technique they used, since there exists more than one. In addition to hinged flails, simple sticks of various shapes might have been used, as well as clubs or paddles. In Asia millet, barley and rice is often threshed without a beater, instead the sheaves are directly whacked onto a big trough or funnel, although with the later English depictions and the use of beating sticks and mallets for other tasks I think some sort of flail or whacking stick is more likely after all.

After the corn is threshed one way or another, it has to be winnowed and possibly sieved. **Winnowing** is the task of seperating the corn from the spelt and husks. The idea is to throw all of it into the air using a flat basket or fan of sorts. The wind will blow away the light spelt, whereas the heavy grain will fall back into the winnowing basket. Afterwards the remaining finer spelt and dirt can be sieved out. Again we have no find that can definitely be linked towards the nature of winnowing in the Viking period. The first depiction of a dedicated winnowing basket I know of derives from the 13th century Maciejowski Bible and shows the item to look more or less as it would have in the not too distant past. There is, however, a depiction in the eleventh century Tiberius calender, that shows two men threshing and, right next to them, a person using a round object with seeds on it *(Ill. 11.b)*. This could be a round item for winnowing, like a cloth spanned over a wooden ring, or just a round, flat **basket** (finds of which we actually have from Oseberg *(Ill. 11.e)*). Thus I would propose that a simple, round, flat basket would fit into the period and do the trick, so I recommend it for reenacting winnowing in that time and area over using a winnowing basket from the 13th century.

Alternatively the round object from the Tiberius calendar could also be a kind of **sieve**, which in modern days were used after winnowing to further seperating corn or flour from spelt and stones. Unfortunately we have no early medieval Scandinavian finds for sieves, though with period techniques a sieve similar to traditonal flour sieves, consisting of wooden rings that hold the proper sieve, would have been possible. The depictions in the calendar however are normaly not so crude as to suggest that the artist would fail to depict a cylindrical object and draw a circular one instead, though that is, als always with such depictions, up to debate.

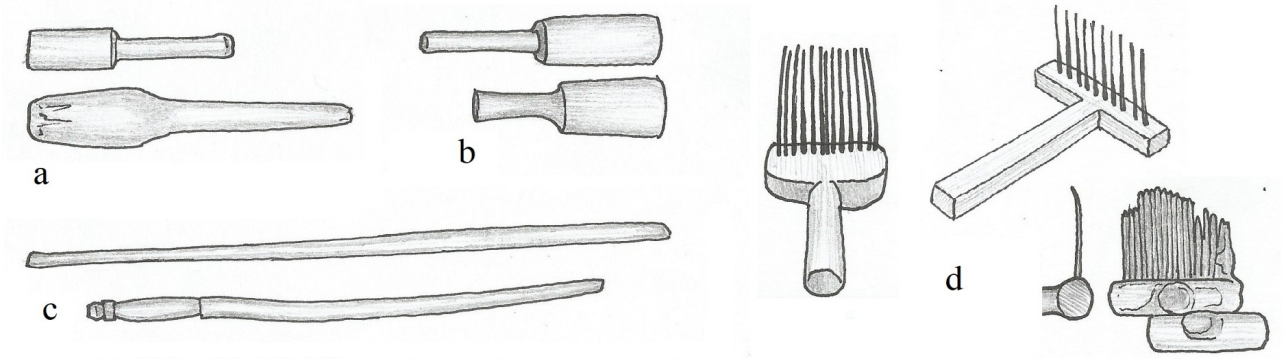
Afterwards the corn can be stored in a dry place, possibly a **chest**. Wheat, not grown in Scandinavia but mentioned in sagas as a valuable trade good from England, was found together with crabapples in a chest within the Oseberg ship burial. Cereals can be eaten as a porridge, malted and dried for brewing (as lots of charred cereal remains from the period might show) or milled into flour for baking. The latter task, useing a simple **hand-quern** *(Ill. 11.g)*, can also be easily showcased at reenactment events and might be a nice addition to an agricultural project.



Ill. 11.: *processing cereals*
a: men using flails for threshing cereals depicted in the Anglo-Saxon Tiberius calendar, 11th cenruty; b: man using a round object to winnow or sieve the threshed corn; c: traditional cereal or flour sieve made of wooden rings holding the actual sieve in place as a bottom; d: flat wood from cylindrical containers found in Hedeby, present day Germany, showing a technique that would make such a sieve possible in theory; e: fragmented basket weave from Oseberg; f: big basket (carried by two men) depicted in both the Tiberius and the Julius calendar, possibly for transporting grain or sheaves; g: typical Viking age hand quern for milling cereals.

If one wants to sow fibre plants like flax or hemp in the garden, there has to be some processing too. Even before combing and spinning a linen yarn, the flax plants have to be rendered into fibers. For this task the cut plants have to be soaked in water first to let them begin to rot. During this retting process the fibers begin to separate from the more woody pith of the plants. Afterwards the plants can be dried and stored until further processing.

Then the plants have to be broken. This can be achieved by laying the flax or hemp over a wooden board with a sharp edge, maybe no more than the edge of a bench, and beat it with a baton or stick. In Hedeby sticks were excavated that are believed to be **flax beaters** *(Ill. 12.c)*, and in Oseberg, together with an abundance of textile tools, mallets were found *(Ill. 12.b)*, also a possible implement for breaking fiber plants. Only after breaking and seperating from the piths the fibers are ready to be **combed** and spun like wool, making plantfibres very timeconsuming to produce.



Ill. 12.: *flax processing tools*
a: „club-like objects“ from Hedeby; b: flax beaters from Oseberg / Norway, found within a textile-related context; c: flax-beating sticks found in Hedeby / present day Germany; d: wool- or flax- combes from Sweden and Norway.

By the end of the year, all the tools and implements have done their work and the harvest can be used. Fibres are spun into yarn, the animals not slaughtered for the winter are feeding on their hay and the barley can be turned into ale, so we can raise a cup or two on the rewards of a hard years work that lays behind us.

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