Choosing modern commercial fabric for early period costuming
Lanea

Learn about fibers, weave structures, and dyes used in Early period cultures in Europe and how to best find or replicate period fabrics for use in SCA costuming. We will discuss what to look for, where to find it, and how to alter modern commercial fabrics to more closely match period textile finds. We will also discuss how to clean and care for wools, linens, and silks so that your garb lasts for years.

Common Historic Fibers and Weave structures

Linen and other basts: Linen, nettle, papyrus, and other bast fibers have been in use since at least 6000 BCE: linen burial cloths were exhumed at Çatal Hüyük in Anatolia. Linen and other bast textiles appear to have been common in all European cultures since antiquity as well as in North Africa and Asia. Linen fibers are difficult to dye and shed dye easily, so it is rare to find evidence of dye in linen archaeological finds. That doesn't mean linen was never dyed, however.
Wool and other animal fibers: There's a great deal of debate about when wool was first used for clothing, but it is clear that sheep selected for wooly rather than hairy coats begin to appear in the archaeological record around 3000 BCE in the Near East. Downy--as opposed to hairy--wool comes into widespread use soon after. Wool and other protein fibers are relatively easy to dye when compared to bast and other cellulosic fibers. Evidence of horse hair and goat hair as weft threads appears in several finds as well, though it was less commonly used. Felt was commonly used in steppe cultures.
Silk: Silk production began in China between 4000 and 3000 BCE and spread to India and Japan around 300 CE and to the Middle East around 550 CE. The earliest proof of the silk trade out of China dates to the 2nd C BCE. Silk was prized in Ancient Egypt, Greece, and Rome. When the Alaric and the Visigoths sacked Rome in 410 CE, his prize included some 4,000 silk garments. Silks appear broadly in Viking-Era finds in Northern Europe, particularly in the form of silk samite trim on garments composed primarily of wool or linen. Chinese silk is rarer in Scandinavian finds, though some silk tabbies do appear in the archaeological record.
Cotton: Cotton production began in the Indus valley by 4500 BCE. Its use spread quickly throughout China and Egypt. Herodotus refers to cotton as "wool exceeding in beauty and goodness to that of sheep. Alexander the Great procured cotton clothing for his troops upon invading India. Egypt began producing cotton around 600 BCE. There is one outstanding British find of a green batik cotton apparently delivered to England via Silk Road traders.
Fur and leather: Fur and leather were used broadly in period, and was generally sourced from animals that the wearers encountered regularly--animals that they raised or hunted. Those cultures with strong trade routes may have had some exotic furs, but they would have been very prized and used sparingly for all but the wealthiest elite. I'd encourage you to use vegetable tanned leather whenever possible and to rely on materials that echo those used in period. Vintage furs and leathers make great options, in part because many extant examples from the period are widely patched and repaired.

Weave Structures

Generally, fabrics were often very fine with high thread counts. A lot of people in the SCA seem to gravitate towards burlap. Don't do that. And don't use synthetics. Authenticity matters, but safety is more important. We are around fire all the time. Wool smolders, and cellulosic fibers are easy to snuff out if they ignite. Synthetics lead to serious burns.

Rigid heddle or Repp and tablet woven bands and edgings: Tablet woven bands appear in the

archaeological record by the 6th C BCE, originating as starting bands for weaving cloth. A warp faced or tablet woven band with elongated weft threads is an ideal basis for the start of cloth to be woven on a warp-weighted loom, because it provides a strong, firm false selvage at the top of the loom from which the warp and weights can hang. Evidence for separate tablet woven bands appears by the 3rd C BCE. The use of tablet weaving remained common in Europe through the 16th C. CE when mechanized tape looms were invented. Tablet woven bands can be produced in myriad patterns and were made with a huge variety of fibers. Repp or warp-faced weaving had developed in the Neolithic and was widespread by the Bronze Age. Rigid heddles were clearly in use by the first century CE--the South Shields heddle found in Tyne was from a Roman settlement in England--and could be used to produce a simple warp-faced tape or ribbon, also known as an inkle. Modern inkle looms were developed in the late 18th century, but the tapes they create can be used to mimic those created by a rigid heddle and a backstrap or other tensioning system. Inkles can be solid, striped, checked, or patterned in a pick-up or brocade technique.

Tabby/Plain weave: Tabby is a simple over under weave structure, where one weft thread crosses in front of one warp thread and then behind the next. It doesn't have a right or wrong side unless you print it. They are comparatively less dense than other fabrics which makes them less warm, less absorbent, and more likely to wrinkle.

Basket weave: A variation on tabby--generally two weft threads pass under two warp threads or two wefts pass under one warp. Packing in extra threads in this manner makes the resulting fabric more durable, warmer, and less likely to wrinkle than a standard tabby.

Twills: In twill, the weft thread crosses in front of two or more threads before passing behind the next warp thread. It creates distinctive diagonal lines in the resulting fabric. It allows threads to come closer together than tabby does, so it is warmer, stronger, and more flexible. That is the sort of thing that makes weavers very happy. Simple twills allow patterning to become mechanized--Brocading takes a lot of patience and expertise, but twill patterns can be set up by a weaver and then just woven by rote, so you can pass the boring work on to a kid or an apprentice or do it while you're otherwise busy. When in doubt, buy twill. A basic twill structure can be altered to produce herringbone, diamond twill, broken twill, houndstooth, tartans, and many other patterns. Do check to see if your twill is balanced--an unbalanced twill will bias and twist around the body whether you want it to or not. This is obviously easier to test in fabric that you buy in person than fabric you buy online.

Spin-patterned twills: Twill patterns can be emphasized using spin patterning (alternating s- and z-spun yarns in the weave) rather than by using different colors of yarn.

Samite is so named because it originated in Persia in the Sassanian period (224-651 CE). It is a weft-faced twill generally worked in a damask or brocade pattern. Some or all of the threads in Samite may be unspun, reeled silk, though in many cases the warp threads are spun to increase their tensile strength or to make use of lower quality, broken silk. Samite may have been made on a drawloom in most instances.

Dyes

I encourage everyone to try both producing and working with hand-dyed fabrics and threads. The subtle variations in hand dyed fabrics are gorgeous and look more convincingly "ancient" or "medieval." If you do decide to experiment with dyeing, please remember that natural does not equal non-toxic--most dye

processes require careful precautions to protect the dyer from exposure to caustic or toxic chemicals, be they naturally occurring or lab-created.

- Black, grey, white, and brown wools were commonly available from naturally colored sheep. Greys work as excellent bases for overdyeing if you want to produce a deeper shade.
- Sea beasties: Murex and other sea snails produce vibrant purples. Tyrian purple, the one covered by Roman and Byzantine sumptuary laws, is on the redder side. Other snails produce bluer purples. Sepia is produced from cephalopods' ink.
- Bugs: Polish Cochineal and Kermes bugs make fantastic red dye. Most cochineal in use today is Mexican cochineal, sourced from a different species, but the dye chemical is similar. Lac is a scarlet resin produced by lac insects, native to Asia, and also the source of the words "shellac" and "lacquer." Most insect-based dyes were very labor intensive to produce in period, and thus very expensive.
- Lichen dyes were used extensively in Phoenicia and the Mediterranean, Scandinavia, England, Wales, and Scotland. They're substantive dyes in most instances, which means they don't require mordants. Various lichens produce an astounding range of colors, and several lichens include the chemical dyestuff anthraquinone, which is still used in acid dyes. If you decide to try lichen dyeing, please first read about the ecological effects of collecting lichens and make sure you are conscientious about protecting existing wild lichen colonies.
- Woad has been in use since the Neolithic and was cultivated throughout Europe and at least parts of Asia and Egypt. It can function as a substantive dye, but mordanting improves its color-fastness. It can be blended with weld or other dyes and mordanted with a variety of substances to produce many colors in addition to blue. Woad is easy to grow--arguably too easy--so if you decide you want to grow some woad for dyeing at home, check to see if your state views it as an invasive weed. Indigo, which contains the same chemical dyestuff as woad, was broadly used in India by the Classical period. It was a rare import to Europe and was thus very prized.
- Madder root dye has been in use at least since Tutankhamun's reign, and it produces a very colorfast Turkey red. Madder was commonly used throughout the Ancient and medieval world. Madder is another weedy, easy to grow dye plant, but some people develop contact dermatitis from handling its leaves.
- Weld is native to North Africa and the Mediterranean but spread throughout Europe in antiquity. Weld seeds hold most of the plant's dye stuff. The dye produces a lovely yellow and is commonly blended with woad to produce vibrant greens. Luteolin, the chemical in weld that produces yellow dye, also occurs in saw-wort, broom, yarrow, and dandelion.
- Walnut shells produce a lovely brown.
- Broom has been in use since the Bronze Age in Europe. It produces a yellow dye, thanks to the luteolin in it.

Historical Examples

<u>Image packet</u>

What survives and why: Cellulosic fibers are much more susceptible to bacterial decay, particularly under humid conditions. Flax is more vulnerable to bacterial action than cotton. Protein fibers like wool and silk are also susceptible to attack by microbes but are more likely to survive inhumation. Damage by bacteria can lead to discoloration, brittleness, decreased tensile strength, and stains. Threads with less twist are weaker than those with more twist, and loosely woven fabrics are weaker than tightly woven fabrics. Immersion can both stain fabrics--generally brown--and strip dye from fibers.

Conditions that inhibit bacterial growth are more likely to preserve textiles: i.e. deserts, acidic peat bogs, alkaline lake bottoms, extremely cold regions, etc. Metal can also protect textiles, so fabrics

behind jewelry or weapons and metallic embroideries often survive because the corrosion from the metal deposits on the fibers and protects them from biological action. If enough time passes and enough deterioration occurs, a metallic copy of the textile called a pseudomorph may form.

Irgenhausen: 1685–1493 BCE according to RC dating. Bronze Age find from Switzerland. Beautifully patterned cloth was found at an early archaeological dig there. Depending on whose research you believe, the piece is a either a Soumak (looping weft) style brocade weave worked in at least three colors OR it's embroidered.
Image in *Textiles and Textile Production in Europe*.
https://books.google.com/books?id=HnSlynSfeEIC&pg=PA140&lpg=PA140&dq=Irgenhausen+textile&source=bl&ots=GB-kKOZRMN&sig=R38Z05lNqWI329xsIc6JXKdIVj0&hl=en&sa=X&ved=0ahUKEwjktofbr9rOAhWJYyYKHRrHD68Q6AEIIjAC#v=onepage&q=Irgenhausen%20textile&f=false

Egtved Girl: 1370 BCE Egtved, Denmark. She wore a ¾ sleeve cropped tabby tunic, a string skirt, and a fantastic bronze belly plate with spiral designs, and there was a lovely spiral-decorated hair comb in her grave. The skirt is a warp-faced band, and the ends of the fringes are chained to keep them together.
http://en.natmus.dk/historical-knowledge/denmark/prehistoric-period-until-1050-ad/the-bronze-age/the-egtved-girl/
Image in *Textiles and Textile Production in Europe*.

Cherchen/Tarim/Urumchi Mummies: 1000 BCE graves in Tarim Basin, China. The people interred are Caucasoid and have tattoos and clothing assumed to be related to Bronze Age Celtic culture. Textile finds in the graves include plaid twills , red twills, braided cords, felt hats, and a dark brown twill with chain stitch embroidery. A later find from the same region (3rd to 5th C CE) includes a patchwork dress--it's the earliest extant patchwork garment I've found in my research.
https://www.penn.museum/sites/expedition/ancient-mummies-of-the-tarim-basin/
The Beauty of Loulan and the Tattooed Mummies of the Tarim Basin | Ancient Origins
Expedition Magazine | Textiles from the Silk Road

Hallstatt salt mines: 16th-4th C BCE: Austria. 700 textile finds have been discovered so far, representing both the Bronze and Iron Age, and excavations continue at the site. Almost all of the finds are wool, though three bands have horse hair wefts and one Bronze Age textile seems to include goat hair thread. On the whole, the Bronze Age textiles are coarser than the Iron Age fabrics. Most of the fabrics are woven with singles, though a few plied yarns do appear in the Iron Age twills. S and Z spun singles are often combined either to combat biasing and buckling or for visual effect. Most of the fabrics from the site are tabbies, but there are examples of 2:1 and 2:2 basket weave, 2:1 twill, 2:2 diagonal twill, chevron (herringbone) twill, broken twill, houndstooth, and diamond twill. Many of the twills feature spin patterning rather than colorwork. Stripes and checks appear as well, produced with dyed wools or with different colored natural wools. Braids, repp bands, and tablet weaving also appear in the finds, including warp-faced bands with woad-dyed blue and plant-dyed yellow and red threads in checkerboard and stripe patterns. In some instances, the woven tapes were sewn onto garments as applied trims. Tablet woven bands in the finds feature geometric patterns and are very finely worked. Some of the garments show decorative structural and finishing stitches worked in contrasting colors. Chemical analysis reveals luteolin, indigotin, anthraquinone, and unknown red, yellow, and green components.
https://search.worldcat.org/title/Textiles-from-Hallstatt-:-weaving-culture-in-Bronze-Age-and-Iron-Age-salt-mines-Textilien-aus-Hallstatt-:-Gewebte-Kultur-aus-dem-bronze-und-eisenzeitlichen-Salzbergwerk/oclc/868569404
Image in *Textiles and Textile Production in Europe*.

Arzhan 2 Kurgan: Tuva C. 650 BCE. This Kurgan contains the burial of a Scythian man and woman, richly dressed with gold ornaments sewn to their clothing and fantastic hats.
Examining the Stunning Treasures - and Macabre Slaughter - in the Siberian Valley of the Kings | Ancient Origins
https://repository.arizona.edu/handle/10150/654755
Gold Artifacts from the Early Scythian Princely Tomb Arzhan 2, Tuva—Aesthetics, Function, and Technology
Textiles, dyes and pigments of the European Scythians: preliminary analyses of materials from southern Ukraine
Textile finds from the central burials of the Arzhan-1 barrow in Tuva

Heuneburg: Hohmichele graves. 7th to 6th C BCE hillfort near the Danube in modern Germany. Grave VI has an embroidered textile, with geometrics worked in silk in overcast and stem stitches. It seems as if the silk was unraveled from a garment and then used for embroidery. Some of the material in the grave was dyed with woad. A reproduction of the garment has been made, but is problematic for our use because it features a swastika-style sunwheel.
(PDF) On the Question of Silk in Pre-Han Eurasia
Image in *Textiles and Textile Production in Europe*.

Hochdorf Burial Mound: c. 530 BCE, Germany. A man in his early 40s was buried with a fantastic bronze couch, a conical birch bark hat, repousse gold shoe adornments, a gold torc, a bronze cauldron originally filled with about 100 gallons of mead, and woven and embroidered woad-dyed textiles. One fabric is a checked twill in blue and red with spin patterning.
Image in *Textiles and Textile Production in Europe*.
Reconstruction of the Hochdorf Chieftain's Grave - World History Encyclopedia
(PDF) Case Study:: the Textiles from the Princely Burial at Eberdingen-Hochdorf, Germany
Tempus vivit! Edle Tuche für den Fürsten

Pazyryk graves: 5th to 4th C BCE, Altai region, Siberia, Russia. Finds include leather applique, felt applique and crewel work saddle covers, and a Chinese silk shaabrak (saddle blanket) with birds embroidered on it. The Pazyryk people used griffins, spiraling shapes, vines, abstract florals, and geometrics in their appliques and embroidery. The patterns often echo those found in the famous tattoos. At least one garment is constructed of three different fabrics with braided trim on the seams. A related grave in Kazakhstan was found in 2012 and has been dated to a similar period and reflects a connected tribe--it contains a woman known as the Golden Princess.
https://www.dailymail.co.uk/news/article-2198222/Fashion-beauty-secrets-Siberian-princess-died-2-500-years-ago-revealed.html
State Hermitage Museum: Southern Siberia/Pazyryk
Images in *Prehistoric Textiles* and *Embroidered Textiles*

Dürrnberg: 5th-3rd C BCE, Salzburg Austria. La Tene finds from a salt mine include tabbies, basket weave, 2:1 twill, and tablet weaving. The tablet weaving generally seems to be at the start of a larger woven piece, and most seem to have been produced on square tablets. One band woven without a connecting fabric used four-hole square tablets and produced a Greek key pattern in yellow on a blue-green and brown background with woolen warp and horse hair weft. The band seems to demonstrate a previously unknown weaving technique where standard color appearance in each pick was overridden by the weaver, allowing extra threads to be in each tablet but not appear in the wrong spots in

the pattern.
Image in *Textiles and Textile Production in Europe*.
Dürrnberg, Austria | Tablet Weaving by Lise Ræder Knudsen
Naturhistorisches Museum Wien - Textiles from Hallstatt Mines

Huldremose woman: 160 BCE to 340 CE, Jutland, Denmark. She was dressed in several garments. Her checked woolen skirt tied at the waist with a leather strap that inserts into the woven waistband. She also wore a checked woolen scarf as a top, which was pinned under her left arm with a bird bone. She also wore two cloaks made of sheepskin, one with the wool facing out and one with the wool facing in. Each cloak was constructed from smaller pieces and heavily patched. One cloak had a hole in it which had a bladder bag or pocket which was sewn closed and that held a bone comb, a blue hairband, and a leather cord. Archaeologists believe she had also been wearing a garment made of either linen or nettle because small threads of plant fiber were found on her remains. Prior to inhumation, her skirt was blue and her scarf red, but the tannic bog waters altered the colors of her textiles.
The Huldremose woman's clothes
Dyed clothes came into fashion in early Iron Age
Image in *Textiles and Textile Production in Europe*.

Thorsberg: 1st C BCE through 6th C CE, Germany. A number of deposits were left by Angles serving at a fort during the Roman occupation. Textile finds include footed pants, a diamond twill tunic with heavy repairs, and a cloak/Brat.
https://spacezilotes.wordpress.com/2013/02/26/an-approach-about-keltoi-d-celtic-clothing-2last/
Image in *Textiles and Textile Production in Europe*.

Lonne Hede: 1st-2nd C AD, Denmark. A young woman was entombed with intricately braided hair and red and woad blue dyed clothing. The garments combine tabby and twill weaves, a plaid shawl, and decorative bands. The garments all rely on pins to secure them to the body.
Lønne Hede project – University of Copenhagen

Lendbreen Tunic: C. 300 AD, Norway. A causeway over a glacier was commonly used for much of the Iron Age, and finds are now appearing as the glacial cap melts. The tunic was discovered in 2011. The Tunic is beautifully woven in a diamond twill and was constructed with set in sleeves. The wool was from a double coated sheep. A repro made of the tunic estimates that the original took 760 hours to make.
Kjortelen fra Lendbreen - The Lendbreen tunic

Orkney hood: 250 - 615 CE, Scotland. This is a wool twill hood with two stacked tablet woven borders, one of which is fringed. It has simple embroidery over the line of stitches that connects the fringe to the body of the hood. There is also chain-stitch darning work in various spots on the hood.
http://www.archaeologyonline.org/Documents/TheOrkneyHood.pdf
https://www.orkneymuseums.co.uk/orkneys-iron-age-hood/
Image in *Textiles and Textile Production in Europe*.

Mogelmose tunic: 3rd-5th C CE, Jutland. Leather tunic made of calf kin. It was previously identified as marten skin.
Skinddragter i ældre jernalder/Leather suits in the Iron Age

The Embroideress (Momia de la bordadora): late 4th/early 5th C AD, Egypt, Coptic. A desiccated

"mummy" referred to as The Embroideress was found in 1899 with embroidery tools and a variety of embroidered grave goods, including heart shaped motifs on her clothing, floral patterns on a pillow, and bird and floral patterns on a shawl.
https://www.europeana.eu/en/stories/the-embroideress-euphemia-an-egyptian-mummy-with-a-unique-story
http://www.flickr.com/photos/soloegipto/4313708634/
http://www.flickr.com/photos/soloegipto/4313708522/in/photostream/

Sutton Hoo: 6th-7th C CE, Suffolk, England. Most of the textiles inhumed at the site were terribly decayed, but testing shows that most of the textiles there were woolen and the dyestuffs used included indigo or woad, red, and yellow tones. Impressions left in the archaeological reveal that the inhumed at the burial include patterned twill weaves and tabbies, and that the hoard included shaggy cloaks, items with fringed borders, fine linen, and an otter trimmed cap. Several of the wools were undyed and possibly relied on varying natural colors of wool to provide patterning. The garments were finely finished. The ship burial included some a pillow with an intricate embroidery stitch over the seams.
Detail of the stitching: http://www.cs.vassar.edu/~capriest/vikembroid.html

Valsgärde: 6th - 8th C CE, Sweden. The find includes beautifully embroidered cuffs and collar in a vining design thought to be from a red silk tabby caftan. There are also silver wrapped silk embroideries. Most of the silks exhibit unspun, reeled silk thread for both the warp and weft.
http://www.cs.vassar.edu/~capriest/vikembroid.html
http://www.flickr.com/photos/14950987@N05/4152370539/
The textile fragments in boat-grave 5, Valsgärde, Old
https://textilarkeologi.se/our-research/tablet-woven-borders-from-valsg%2525C3%2525A4rde.html
http://www.sarks.fi/masf/masf_12/MASF12_10_Pallin.pdf
Image in *Viking Clothing*

Bernuthsfeld Man: 660-870 CE, Germany. His garments included long leg wraps and a wool tunic made out of 45 patches from 20 fabrics in nine different weave structures.
The patched garment from Bernuthsfeld, Germany (after: Schlabow 1976, fig. 149).
https://www.pinterest.com/pin/561190803544114534/

Sogdiana: 7th-8th C. CE Central Asia. Apocryphal stories explain that Chinese immigrants to Bukhara, Uzbekistan began a silk weaving tradition there. Fantastic silk brocades and samite were produced in Bukhara and the surrounding region. These silks were often the very ones used as payment for guards along the silk road, so pieces of them are what show up on Scandinavian garments in the same period as trims.
Use and Production of Silks in Sogdiana | CAIS©
http://www.clevelandart.org/art/1996.2.1
https://awalimofstormhold.wordpress.com/tag/sogdiana/

Moshchevaja Balka: 8th to 10th C CE, North Caucasus/Alan. Finds include a patchwork pieced silk caftan, a linen Horseman's caftan and trimmed with multi-colored patterned silk and silk brocade leggings with linen feet. That caftan was apparently lined with fur. The silk was originally dyed red with safflower and blue with indigo. Most of the silk was silk samite woven in a brocade pattern of circles.
https://www.scribd.com/doc/111917029/A-Man-s-Caftan-and-Leggings-From-the-North-Caucasus
Images in *Silk for the Vikings*

Birka, Sweden: 8th to 10th C CE. The finds include an *osenstitch* (wire embroidery) deer, several tablet woven bands, diamond twill, posament work, a fur-lined caftan, and many bands of samite silk used as trim on garments. Birka is one of the only Viking finds that seems to include both Chinese silk and Persian silk.
https://samlingar.shm.se/media/68FB5B62-27D6-47AA-AC48-CD60F1E9BD98
Thoughts About Birka Grave 735
Images in *Silk for the Vikings*

Llangors tunic: Late 9th to early 10th C CE, Wales. The charred garment fragments may have been damaged in a fire when Mercian forces attacked the Llan-gors crannog, capturing dozens of people. The garment is hemmed and has a belt loop. The very fine linen tabby fabric is embroidered with silk threads produced in different ways--some is reeled, and some is spun and plied. The embroidery is very dense, completely covering some areas of the garment, and worked primarily in thread-counted stem stitch. Embroidery threads are red, beige, green, light blue, dark blue, yellow, and gold metallic. The garment also has applied braided trim on the hems and seams.
http://heatherrosejones.com/llangorsembroidery/index.html
https://museum.wales/articles/1344/The-Llan-gors-textile-an-early-medieval-masterpiece/
Images in *Dress in Anglo-Saxon England*.

Oseberg ship burial: 9th C CE, Norway. The surviving textiles include a fine woolen tabby fabric with silk embroidery in vining patterns over seams, beautiful broken diamond twill, a twill plaid, as well as applique of animals and large swaths of pictorial embroidery. The find also included a number of Persian silk textiles.
https://theheritagetrust.wordpress.com/category/burial-ships/
http://www.forest.gen.nz/Medieval/articles/Oseberg/textiles/TEXTILE.HTM
Images in *Silk for the Vikings*

Mammen: 10th C Danish grave. The entombed man wore several layers of wool twill clothing, much of which has embroidered patterns worked in stem stitch. The designs include vines, stylized human faces, a leopard, and birds. Thor Ewing hypothesizes that the representational style of embroidery was imported from Britain. Much of the embroidery at Mammen is on red fabric, which was itself highly prized. The find also includes lovely woven silk bands as adornments on sleeves.
Mammen Embroideries
The costume
http://heatherrosejones.com/mammen/index.html
Image in *Vikings: The North Atlantic Saga,* and *Cloth and Clothing in Early Anglo-Saxon England, AD 450-700*
Image in *Textiles and Textile Production in Europe.*
Images in *Silk for the Vikings*

Haithabu/Hedeby: 10th C CE, Germany. The dig produced one of the best examples of a pinafore/apron dress. The dress has a herringbone stitch over some seams and an applied braid over others. There was also a heavy quilted wool coat with down and trimmed with card-woven ribbon, and felt sheep masks. Fabrics in the find include a number of plaid twills.
Viking Textiles - A deeper look at plaids, stripes and checks
Items from 10th Century Hedeby (Haithabu) | In Pursuit of Medieval Excellence
Vikings of Bjornstad - Museum Haithabu
https://hvitr.blogspot.com/2015_11_01_archive.html

Eura: 11th C, CE grave, Finland. The woman's apron features Sami tin thread embroidery, which still features in folk costumes.
http://www.vikinganswerlady.com/FTP_Files/Ancient_Finnish_Costumes.PDF
Image in *Cloth and Clothing in Early Anglo-Saxon England, AD 450-700* and *Vikings: The North Atlantic Saga*.

Resources for fabric
Burnley and Trowbridge: Excellent suppliers, particularly for later period reenactors. They also sell notions, accessories, patterns, etc.
Cok Guzel: SCAdian merchant of excellent block printed fabrics, SCA specific fabrics, jewelry etc.
Denver Fabrics / Fashion Fabrics Club: a decent online store using different branding on two sites. Watch for sales on wools and linens. I have heard of mislabeled fiber content on some items, so be wary.
Dorr Mill: They focus on things like applique and rug hooking, but often have gorgeous twilled wools.
Drifa's Leap was started recently by SCA folks who want an Etsy like platform that will be more artist and crafter friendly. Watch this space.
Echo Historical Textile: Weavers based out of Kyiv. Their work is utterly beautiful.
Etsy: There are several handweavers who sell yardage on Etsy, as well as some sellers who deal in vintage and antique fabrics. Also look for rolls of vintage linen from Russia and Eastern Europe--generally woven to be used for grain sacks or toweling. Relatively narrow, but that helps to recreate the narrow widths of fabric that were generally woven and used in period.
Gray Lines Linen: Huge selection of linen fabrics, with a brick and mortar store in NYC.
Itokri: A rotating selection of silks, wools, and cottons. Shipping can be pricy, so group orders can be a boon.
Fabric-store: Great linen in varying weights
The Linen Lab: based in Korea. I haven't used the site yet, but I'm getting good reports back from folks.
Mood: watch for sales, excellent suitings.
Renaissance Fabrics: fabrics, notions, patterns. Again, a great resource for later period supplies.
Royal Blue Traders: An excellent source of fabrics and notions, including tools like pinking and buttonhole chisels.
Sartor: Reproduction fabrics based on many finds, plus standard silks and wools and linens.
Silk Baron: the best variety of silks available online.
Sultan's Fine Fabrics has a huge variety of fabrics at many price points. I tend to search from cheapest to most expensive. I found excellent tropical weight wool silk blends for a friend's laurel cloak this year.
Vogue fabrics: Another great place to watch for sales.
Wm. Booth, Draper: Another fantastic resource for fabrics and notions for later period costuming.

Caring for fabrics and garb

Know your fabric: There are good resources online to teach you how to identify fiber content through burn tests, bleach tests, etc. Know what your fabric is made from before you make it into something lovely, and give thought to who you sew for before you pick a fabric to use for them. I am very careful about who I give wool and silk to, as well as who I embroider or weave for. I do give gorgeous things to fighters and smiths and cooks and other people who make horrible messes, but I make sure they understand how to care for what I give them.

Pre-washing etc.: I always pre-wash and press fabric before I cut it, and I run everything through the dryer except wool. Dry cleaning is terribly modern, and period fabrics were washed with water when

necessary. I beat up new fabric before I sew with it and then I treat it gently henceforth. I tend to run a quick zig-zag seam along the cut ends of any fabric that seems likely to fray before I wash it so I don't lose too much to fraying in the washer and dryer. I also use dye catchers so I can prevent dye redepositing and pay attention to what fabrics seem to bleed or crock a lot. In some instances I have to wash a fabric multiple times before I decide it's usable.

Construction and finishing: I am adamant about pressing seams as I sew, seam finishing, and other sewing techniques home economics teachers try to convince us all to rely on. Those methods work well. Linen and other bast fibers are particularly likely to fray, so you should really do some sort of seam finishing technique to keep linen garments from falling apart on you. For Viking garb, embroidered seam finishing techniques are ideal.

Be careful about what sort of thread you use. A synthetic sewing thread can wear through natural fiber fabric in a few years--I wear a lot of garments that I've had since I was a teen. Some of them have needed some heroic repairs because I didn't get the memo.

Hand finish your hems. Please. Machine sewn hems don't lie as well and they stand out on otherwise period appearing garments. Save them for things you just can't hem by hand. (Like the tenth identical heavy canvas fighting pants you made this week for your sister who kills sewing machines.)

Cut off your machine selvedges unless they are so weaverly and beautiful you can't bear to lose them. Please. I beg you. 99 times out of 100, visible selvedges warp your fabric and make you look lazy. I have been lazy about a couple of sleeve hems and it tortures me.

Do piece smaller pieces together to make up length you need in sleeves, etc. Ancient looms were narrow. Pieced garb makes more historical and economical sense than t-tunics cut from 60" wide fabric. Not that I've never done that--I certainly have.

Mend your stuff--early and often. Period garments are full of repairs.

Dryers are the enemy of finished garments: I never dry any of my handmade garments in a dryer. Ever. I make sure anyone who receives garments from me understands that dryers are bad for clothes. Bad. Use a drying rack or lay garments flat to dry.

Hot water is also the enemy: Stick to cool or tepid water. Hot water fades dyes and breaks down fibers. It can also wreak havoc on embroidery or applied woven trims.

Agitation is not much better: Agitation is wear, plain and simple. If you get something filthy, try to spot clean the worst areas as best you can. Do not do small loads of laundry. Full loads are more efficient in terms of water and energy use, but they also reduce agitation and thus allow clothes to last longer.

Hand Wash or Gentle Cycle: Whenever possible, I hand wash my garments or wash them on gentle cycle in cool water. I always make sure to wash a full load. Filling a washing machine reduces the amount of agitation each garment undergoes. Agitation is wear. It leads to felting, damage to embroidery, and all sorts of other problems.

Wool: I do wash wool garments, though I don't necessarily wash them every time I wear them since they are often outer garments and may not get as heavily soiled as under-dresses. I prefer to use either a gentle shampoo or a knitter's wool wash for them, and I wash them by hand or using a very gentle cycle with cool water. I hang them or lay them flat to dry. I also tend to build in more ease for wool garments then for other fibers in case some felting does occur.

Silk: I use shampoo or knitter's wool washes for silk as well. I either wash them by hand or on gentle

cycle with a full load of items.

Leather: Be prepared to condition leather pretty regularly to keep it from fading, cracking, or wearing unevenly. Also be prepared for leather garments to need to be altered after they re-form to you.

Fur: Different tanning and taxidermy processes require different levels of care, so find out what sort of process was used on any fur you decide to work with. A number of mid-century tanneries worked with very acidic tanning processes that just wreck furs--if you are working with a vintage fur and it seems super fragile, it may be too far gone to salvage.

Web Resources:
My living history and textile Pinterest boards:
https://www.pinterest.com/amy_ripton/early-period-fabrics/
http://pinterest.com/amy_ripton/living-history/
http://pinterest.com/amy_ripton/embroidery/
Academia.edu: https://www.academia.edu/
Ancient Finnish Costumes: by Pirkko-Liisa Lehtosalo-Hilander
http://www.vikinganswerlady.com/FTP_Files/Ancient_Finnish_Costumes.PDF
The British Museum: https://www.britishmuseum.org/research.aspx
The Hermitage: https://hermitagemuseum.org/?lng=en
Leeds Museum collection: https://museumsandgalleries.leeds.gov.uk/
National Museum of Denmark: http://en.natmus.dk/
National Museum of Sweden: https://www.nationalmuseum.se/en
Nille Glaesel's blog: https://nillegraphic.myportfolio.com/
Sewing Stitches Used in Medieval Clothing:
http://someclothingofthemiddleages.wikidot.com/stitches
The Textile Blog: http://thetextileblog.blogspot.com
Textile Museum of Canada: https://textilemuseum.ca/
Victoria and Albert collection: http://collections.vam.ac.uk/

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