The Search for Yellow X

by Baroness Kaleeb the Green Eyed

A small, but detailed, article on Viking dyes caught my interest, especially the dye labeled Yellow X. Despite chemical analysis the dye has remained a mystery. A little is know about the dye. It was found on 6 textiles, 5 of which are Norwegian or Danish in origin. The dye is found in combination with indigotin. It probably did not need a mordant. It might be a yellow, yellow/brown or a green when on a textile. (Walton, p. 154) I have included the list of dye plants that the original archeologists tried and dismissed as possible matches for the dye Yellow X. I hope to try a few of the dyes on their list, as a comparison.

Commercial Dyes:
Reseda lute?la (weld)
Genista tinctoria (dyer's greenweed)
Crocus sativus (saffron)
Rhamnus spp (Persian berries)

Lichens:
Xanthoria parietina
Hypogymnia physodes
Parmelia saxa???is
Lobaria pulmonaria
Pseudovernia furfuracea

Barks, ect.
Salix fragilis (bark)
Fagus sylvaticus (nuts)
Quercus robur (gall)
Corylus avellana
Malus sylvestris

Scandinavian wayside plants:
Potentilla anserine
Bidens tripartite
Chrysanthemum segetum
Myrica gale
Matricaria martima
Cytisus scoparius
Equisetlum arvense
Lythrum salicaria
Hypericum perforatum
Nymphum alba

In my search for Yellow X I have explored a lot of plant matter. I have had to learn about mordant's and the quantities of plant matter needed to dye fiber. Previously I did not understand how dependant a dye is on the environment. For example a dye made from the roots of a plant in one area may produce a different color in your yard compared to my yard. If the plant is harvested in the spring or fall the color may be different. Different parts of a plant can produce different colors, but not always. Radically different colors can come from an exhausted dye bath. Hard or soft water can change your results , as well as what type of after dip is used. I have not yet begun to experiment with dye modifiers. I have discovered that yellow is the most common dye color. I am just beginning to appreciate the amount of work and skill that a dyer must have gained over a lifetime.

When I first thought about this project, I wondered how an Anglo-Saxon dyer would know what plants to use. If the knowledge was not passed down in an oral form, then the dyer would have had to experiment. I decided to start with the plants that were easily available to me. I have a lot of plants in my yard, as I am interested in herbs, have a vegetable garden and the beginnings of dye garden. (All of my gardens are organic, so I do not need to worry about chemical containments.) The random approach of pick enough of a plant and stuff it in a pot, has been mildly successful. I then did some more research and discovered that most dye plants stink. If they do not stink at the beginning of the process, they probably will by the end. That has narrowed my search field a bit and produced better results.

Next in the ways to narrow the field of plant possibilities was to remove anything that was food. I figure that most people would rather eat a plant, than wear it especially in a subsistence culture. Having said that I know hungry people will eat a lot of things that I will not. I am ignoring that theory. I only used a food product if it was a waste product. For example nobody eats onion skins or spinach that has bolted. I did try eating radish leaves, they were furry on my tongue, but did taste better than the radish itself. It continually surprises me how much plant matter is needed to dye fiber. It is a weight ratio of about 2 to 4 times the weight of the fiber needing dye. That does not sound like a lot, until you try to fill up a bucket with flower petals.

I have tried to look up the origins of a plant before it goes into a dye pot, but sometime I get too impatient. I am not as careful a dyer as I should be. I do not take meticulous notes. I pick the plant, stuff it in a pot, cover it with water and simmer it. If the resulting color looks promising I let the dye bath cool, strain out the plant matter, soak my 10 yard alum treated wool yarn samples in water, toss them into the pot and slowly bring it up to a simmer. I look at the yarn right away, if it has color I pull it out, and continue pulling a sample every 5-15 minutes until I run out of dye or yarn. If the yarn looks unchanged, then it sits in the pot for an hour on low heat, cools in the pot until it can safely be rinsed with water until the water runs clean. If a book claims a color that I have trouble achieving then I boil the plant matter for an hour or more, let it cool, let it get a bit ripe on the stove for a few days and try again. Zinnia flowers are an example of a dye sample not matching the color sample in a book.

I like the term hedgerow dying. It implies collecting plant matter that grows on your property. While my property is not in England nor a Norse Province I think I will do some looking for Yellow X on a more local level. I hope to show how resourceful early dyers were and what colors are available. I plan on exploring my gardens, yard, drainage ditch and trees. I expect to find a number of yellows, browns and perhaps some greens. During my experiments I have done most of my work with one pot, a strainer, a wooden spoon and a catch basin. All are simple tools, commonly available in Anglo-Saxon England.

A basic part of dying is to use a mordant to fix color to a fiber. I used a 10% alum solution as my mordant. I realize that alum has a chemical signature, which did not show up in the analysis of Yellow X. While I would like to think that scholars will look at my experiments and find the answer to the Yellow X question, I realize that it is a bit unlikely. If I knew in advance that a plant would not produce a dye which was colorfast without the use of alum, then I did not waste my materials. I plan on using my hand dyed and handspun fiber for an embroidery project, and I wanted a colorfast product.

The following is a list of all of the plants that I ran through my dye pots. In some cases I ran several tests if I did not get the results that I expected. Many samples have a wide range of color and that is what I enjoy about natural dyes.

Bronze fennel
Carrot tops
Onion skin (from 40 pounds of onions)
Pomegranate hulls
Purple basil with vinegar after dip
Purple basil with no after dip
Radish leaves
Spinach leaves and stalks
Tomato Leaves
Dandelions flowers
Dandelion roots
Coreopsis
Daylily roots
Golden rod flowers
Ivy from Julies house
Ivy from my house
Marigolds
Pokeweed berries
Pokeweed leaves and stems
Ragweed flowers
Rotted Yarrow
Tansy (Mystery plant from Mom's garden)
Trumpeter vine, leaves and flowers
Zinnia leaves
Zinnia flowers
Zinnia purple flowers

I was correct that I could find a number of different yellows and browns from my yard. I was very surprised to produce a yellow-green color from pokeweed berries. What makes the poke weed berry experiment interesting is that it should be an unremarkable yellow/beige. However I got a light pinky color, a pale yellow and a green. I have asked a number of dyers why I got green. I have asked a friend to do the same thing that I did and she never got the same results. Even taking into consideration the differences between a commercial yarn and a handspun yarn, does not explain my skein of green yarn. Green is a difficult color to dye, as it is usually an over dye of weld and woad, not a single stinky pot of month old pokeweed berries. All of the reading I have done on pokeweed dye indicates that it is not colorfast and that it will age to a dark brown. I hope that will not happen to my pretty green yarn.

In conclusion to my hunt for Yellow X I think it could have been from pokeweed berries. Pokeweed is a bird dispersal plant, it is very large, it is poisonous if not properly prepared, and a little goes a long way. It is a plant which has refused to give up all of it's mysteries to me.

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