



Man's Shirt Constructed By Swedish Immigrant, Anna Pers-Dotter Larson, Circa 1880s



Larson men during work. [figure 1]

The value of everyday clothing in rural communities is exemplified by its use in varying states of repair. Because of this use and reuse historic everyday clothing is a rare find and therefore little studied. More commonly collected and studied are ceremonial costumes or fancy dress

for special occasions. The Minnesota Historical Society has been fortunate enough to receive a collection of everyday clothing from the 1880s. Family oral history states that the garments were spun, woven and constructed by Swedish immigrant, and Isanti county resident, Anna Pers-Dotter Larson. Examined here in this report is one man's shirt from the collection.

Anna Pers-Dotter Larson was born in Dalarna, province, Sweden in 1836. At age 34, she married Sol Lars Larson. In 1874, at the age of 38, Anna gave birth to the couple's first child, a daughter. Two years later, Anna would give birth to another daughter.

In 1882, Lars and Anna left Sweden along with their two daughters bound for Minnesota. They were joined by Lars' brothers, Eric and Ole, establishing a shared farm near Stanchfield Township in the county of Isanti.



Flora Danielson.
Anna in her Sunday best with husband, daughters, and grandchild. [figure 2]



Larson family papers and deeds. [figure 3]



Examination using a stereomicroscope. [figure 4]

The historic shirt examined here has undergone both a physical documentation as well as chemical analysis. Crafts people interested in detailed construction techniques and materials used will be able to construct garments of historic authenticity for personal pleasure or use in living museums. Scholars may find use for this detailed information in their own research. Finally, this project, is an opportunity to document a rare slice of common life. By accumulating this information, we can glean insight into the experience of a hardworking emigrant wife and mother, who herself left no written materials and held no public office, instead choosing to live a private life among her family and friends.

I. Artifact Description: Man's Shirt



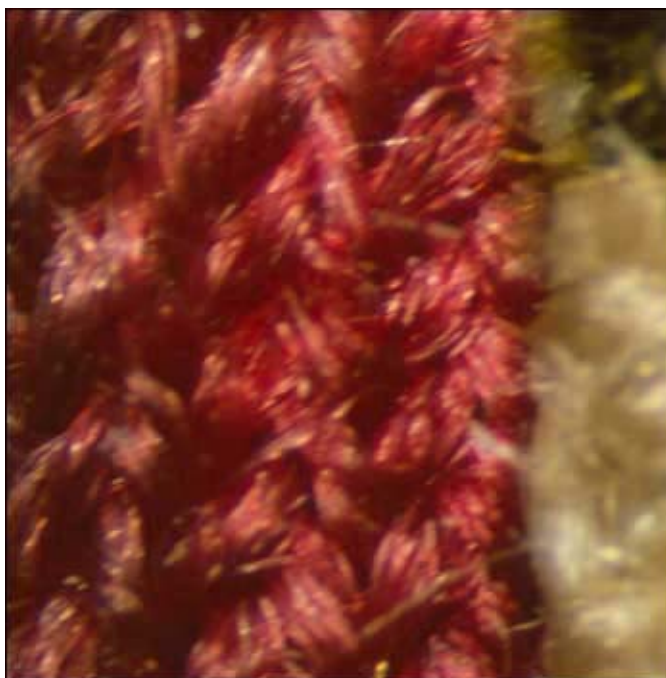
Overall front, 1985.183.12. [figure 5]



Overall reverse, 1985.183.12. [figure 6]

The shirt is a brown and cream weft striped twill pullover shirt with long sleeves. The shirt is trimmed with brown twill cuffs and glass buttons with reddish-brown rims. Three buttons secure the center front placket with a band collar. A red interlaced trim lines the placket. The shirt is sewn entirely by machine with the exception of one hand-sewn center front double seam.

Producing from fiber to finished garment was a time consuming process that involved the entire family. This labor-intensive garment was considered highly valuable by the family, as evidenced by the multiple layers of patching *and repair*.



Stereomicroscopic photograph of interlaced trim used along the placket. [figure 7]

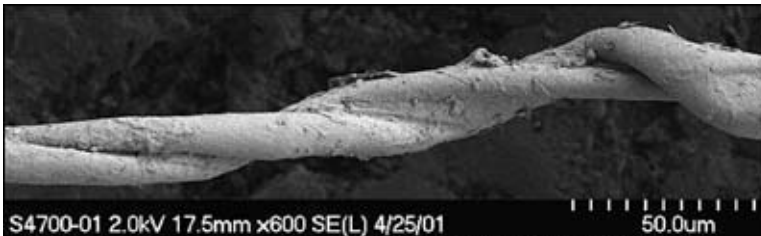
II. Fiber Analysis

The examination of the following fibers was executed with help from Jerry Sedgwick and Chris Frethem of the University of Minnesota's Electron Microscope facility. Figure 8, at right, shows from where the following fibers were taken.



Fabric fibers from which the following samples were taken. [figure 8]

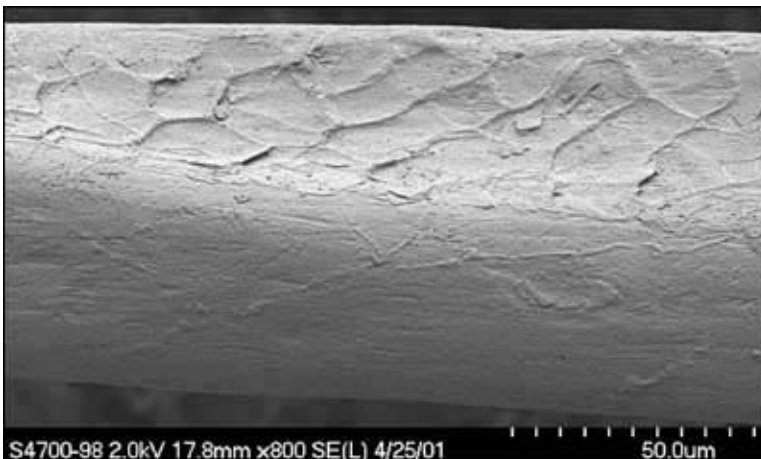
A. Undyed Warp Yarn: Cotton fiber, single ply Z-twist.



Electron microscope photograph of a cotton fiber. [figure 9]

The strong convolutions, twisting, of this fiber identify it as cotton. These convolutions are created as the fiber dries after being picked from the plant.

B. Brown Weft Yarn: Wool fiber, single ply S-twist.

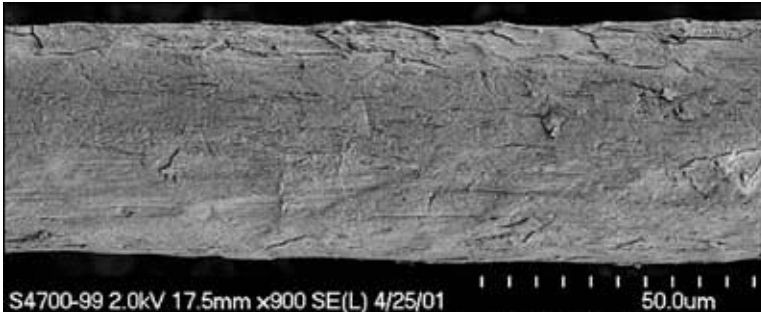


Electron microscope photograph of a wool fiber. [figure 10]

Scaling on the surface of this fiber identifies it as belonging to the wool

family. It is interesting to note that the scales lay predominately in a depressed region of the fiber. The surrounding area appears smooth, indicating that the scales have been worn away. One possible explanation for the level of smoothness found on this fiber may be that washing over a long period of time in alkaline or hard water may have occurred.

C. Undyed Weft Yarn: Wool fiber, single ply S-twist.



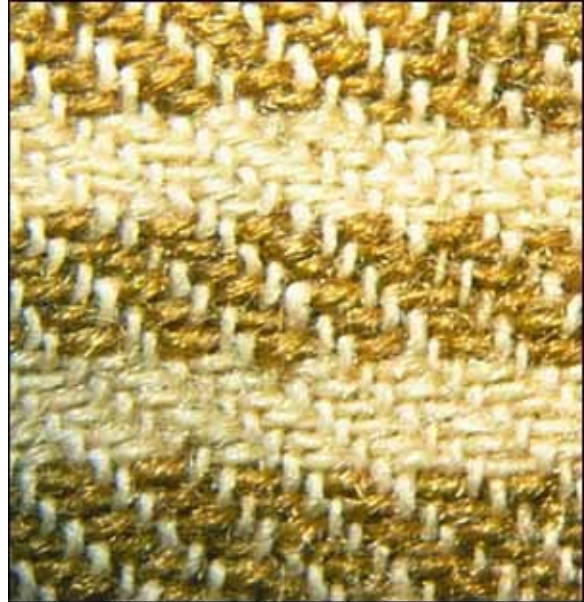
Electron microscope photograph of a wool fiber. [figure 11]

Again, scaling found along the top edge surface of this fiber identifies it as belonging to the wool family. As before, some loss scaling is evident throughout the surface.

III. Weave Structure

Description: 2/2 twill at approximately 48 ends per inch and 48 yarns per inch measuring 27 ½ inches wide selvedge to selvedge.

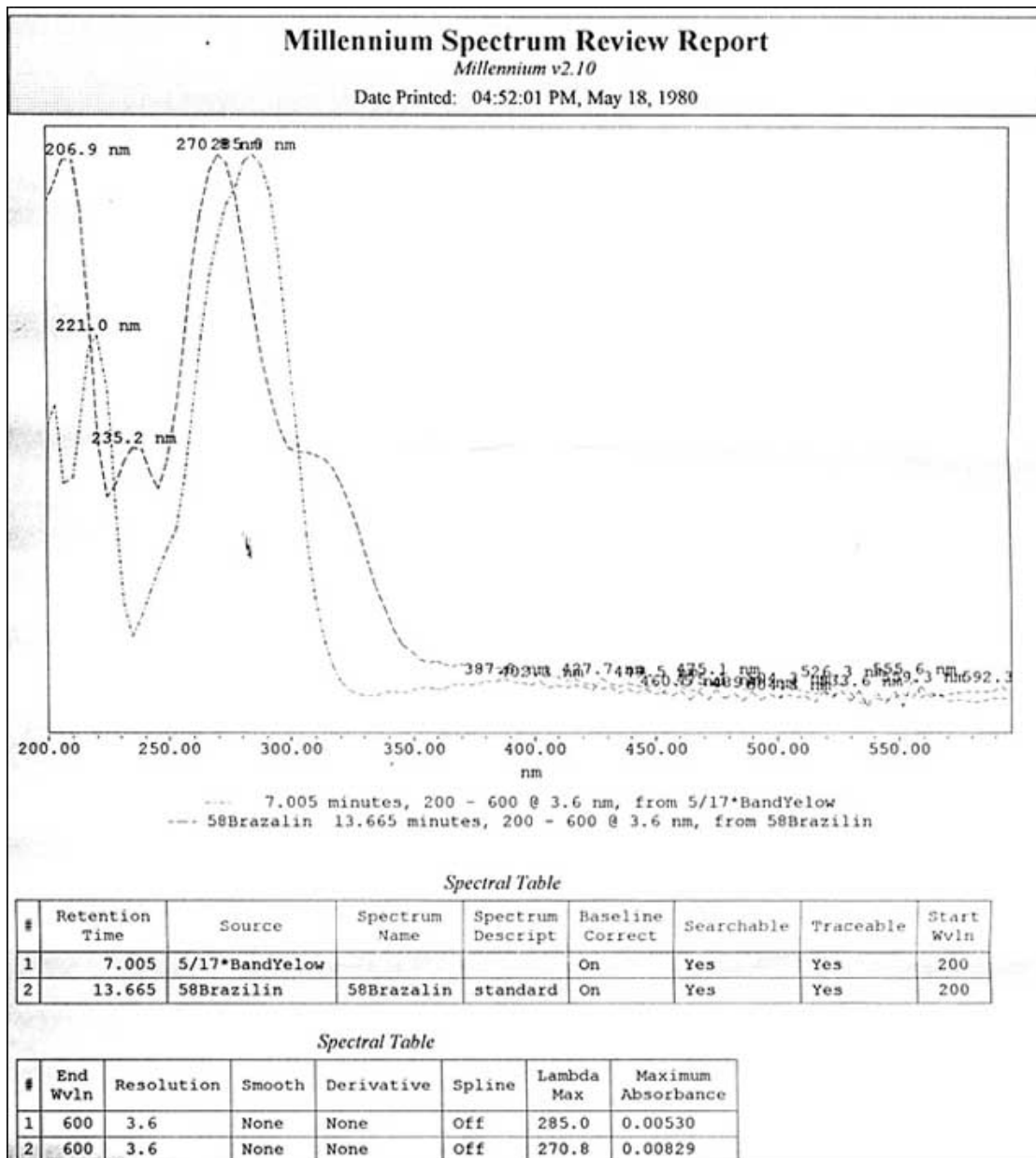
The simple weave structure of this fabric suggest the use of a four-harness treadle loom. Anna's floor loom is said to have been shared by several families in the area. A loom of this type uses a large chunk of space in a small homestead, predicating its



Striped shirt fabric. [figure 12]

need to be disassembled when not in use. This portability made it relatively easy to transport the loom from home to tome. Sharing this piece of specialized equipment between families demonstrates its value to the community and their dependence upon on another during the early years of homesteading.

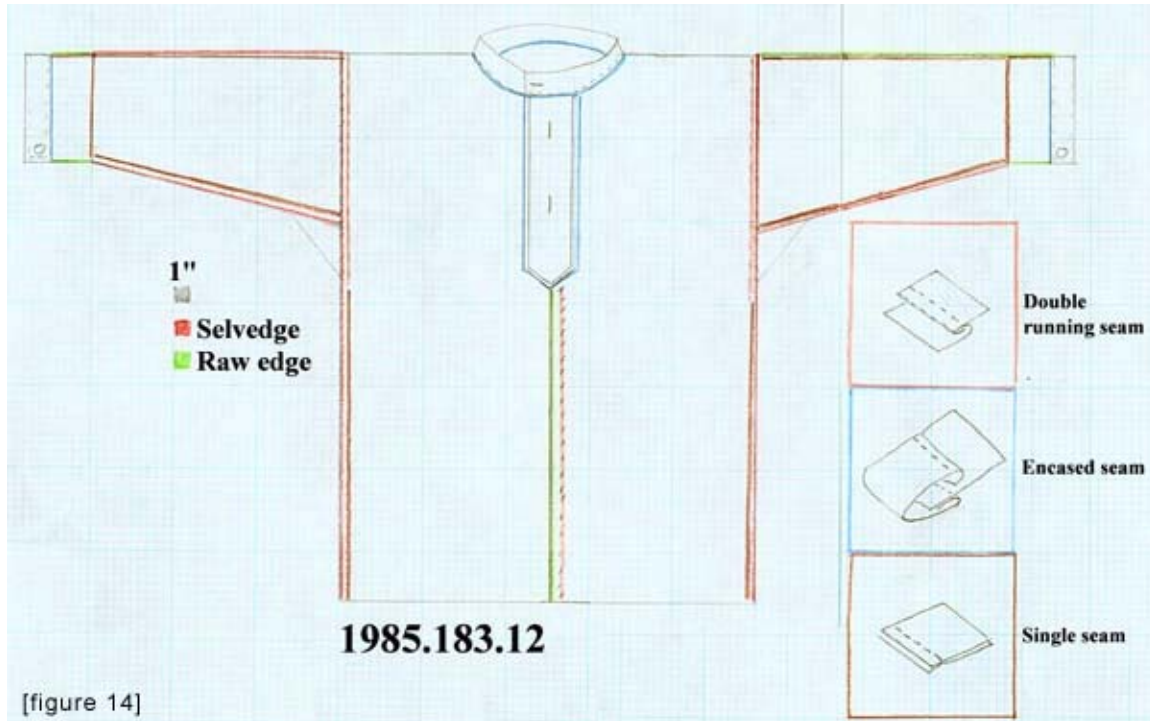
IV. Dye Analysis



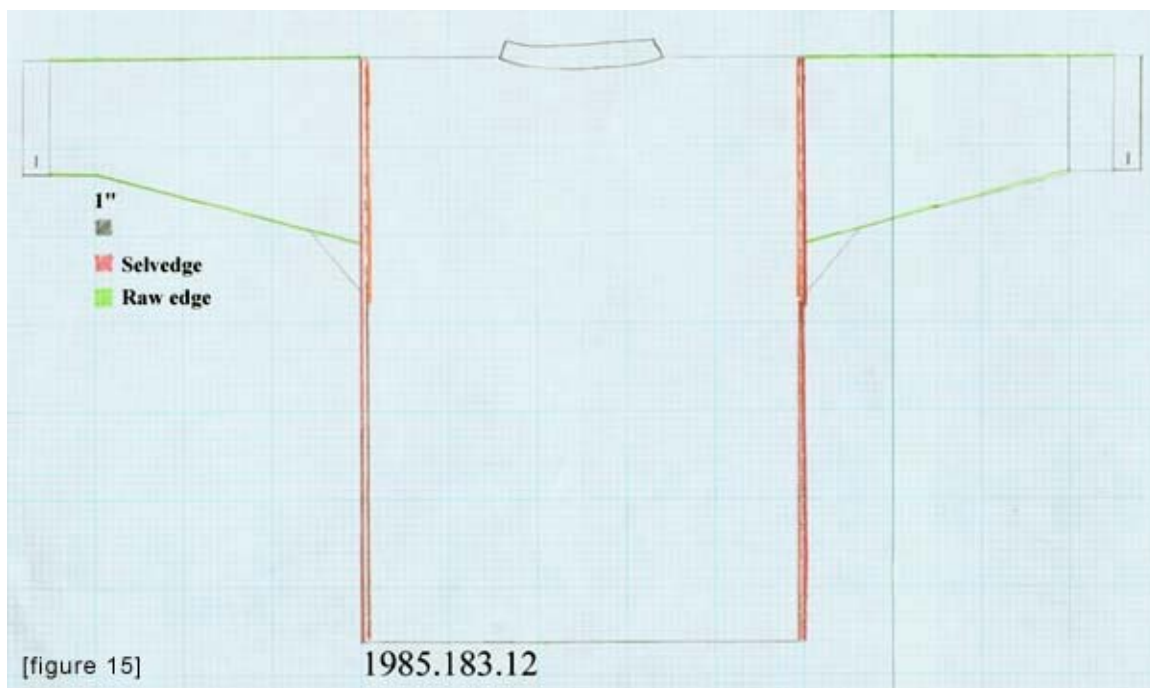
[figure 13]

Preliminary HPLC (High Pressure Liquid Chromatography) dye analysis performed by Casey Reed of Material Insight (www.material-insight.com) found Brazil wood in the brown fibers. No mordant was detected. An exotic dyestuff, it is probable that Anna purchased it. Both professional and home dyers commonly used Brazil wood, alike. Recipes for its use as a red dye substance are plentiful. Interestingly, no reference as to its use as a brown dyestuff was uncovered. However, while reviewing my own natural dye journal, a brown wool sample dyed with Brazil wood was noted using an iron mordant.

V. Seam and Construction Techniques



[figure 14]



[figure 15]

This shirt is constructed in a traditional Swedish pattern. The body is fabricated from one length of yardage folded in half and split up the front to accommodate the neck opening and placket. The arms are flat and joined to the shoulder with the aid of a gusset.



[figure 16]

Remnants of former hand sewing thread were found intermittently down the side seams. This indicates that the shirt was originally hand sewn. Due to hard wear and heavy use, seams were later rejoined by machine stitching. It is not currently known if Anna had her own machine or shared one with other families. That it was a latter edition is

evident by the fragments of sewing thread found along the seams.

It is interesting to note that the proper right sleeve front is constructed with a piece of yardage measuring $8 \frac{1}{4}$ inches selvedge to selvedge. This indicates that this sleeve piece was woven to size. The other remaining three sleeve components have at least on raw edge, if not two, demonstrating that they are probably cut from larger pieces of yardage.

To weave yardage to size rather than weaving all your goods the same is a time-consuming process. Questions remain regarding the differing fabric widths. Did Anna weave each piece of pattern to the appropriate width? Are the raw edges on the other pattern pieces missing selvages due to use and wear? Or was she running out of material for the sleeve and choose to minimize waste by weaving the last component to size. At this time, all of these questions remain unanswered.

VI. Conservation Treatment



Overall front, 1985.183.12. [figure 17]



Overall reverse, 1985.183.12. [figure 18]

A. Condition

Overall, this shirt was in poor condition. Small areas of loss are scattered intermittently throughout the entire garment. A large section of the left sleeve is missing from the elbow to the cuff.

Fading of the red piping and brown yarn is evident throughout. Also apparent is a large brown stain with a stiff tide-line on the right side of the shirt. Areas of gray accretions, possibly mildew, and rust brown stains are located near the hem. Red staining, possibly dye transfer from an adjacent red shirt found in the same storage trunk, was noted on the back of the right sleeve.

Surface dirt and grime was found overall, as well as straw debris at the base of the placket. Water born staining is noted on both the front and back.

B. Reason and Scope of Conservation

This shirt was chosen for exhibition due to its interesting striped fabric and fairly whole condition. Therefore, an inclusive treatment was initiated to (1) clean the garment of abrasive and acidic by-products, and (2) to provide overall support for exhibition.

C. Conservation Treatment

Prior to treatment and for documentary purposes, the shirt was photographed.

Next, the shirt was wet cleaned in a solution of Triton X-100 and deionized

water while being supported on a polyester screen, thus removing any acidic by-products and abrasive particulate matter. It's final pH measurement moved from 6.5 to 7.7. After cleaning, the shirt was allowed to dry flat on a mesh screen.



Cotton lining positioned on interior of shirt during treatment. [figure 19]

A supportive cotton fabric lining was then applied to the interior of the shirt. The lining was dyed to an appropriate color using Procion dyes. This lining was then cut to size and sewn to the interior of the shirt. Care was taken to leave interesting areas of seam construction exposed for possible later study. Errant or disengaged years were secured to the lining with laid and couched stitching. Again, interesting areas of seam construction were left exposed for later examination.

A support pillow fabricated from spun bonded poly felt and de-sized cotton fabric was constructed to fit within the shirt. This pillow will act as a supportive mount for both exhibition and long-term storage.

Ann Frisina, Susan Heald and Deborah Bede, conservators at the Minnesota Historical Society, executed this treatment.

Completed treatment photographs



Overall front, 1985.183.12 (treatment completed).
[figure 20]



Overall reverse, 1985.183.12 (treatment completed).
[figure 21]

01/2002

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