Horsehair weaving for sievewrights
Documentation of an ongoing craft project

ABSTRACT
This paper aims to discuss methods for reviving a craft – horsehair weaving – inspired by the concept of a moving searchlight approach and a forensic perspective. Isolated artefacts, tools, tools with ongoing processes and photographs, together with preserved documentation, have been analysed. Ongoing documentation on social media and a webpage were used during this process. Social media aimed to get people interested in the subject, test thoughts and maintain a dialogue. The webpage aimed to gather documentation demonstrating the horsehair weaving process and how the sievewright was made. The public documentation also aimed to inspire and engage other crafters. The public display of the ongoing project has been a positive learning experience. Different methods of documentation have different advantages.

Keywords:
Craft documentation, craft history, craft knowledge, craft materials, horsehair weaving.

INTRODUCTION
Sieving is a method used to separate fine particles from larger ones. A sieve is made with a mesh mounted on a frame (Figure 1). Depending on the size of the mesh, it may have different purposes. A fine mesh is ideal for sifting flour, while a coarser mesh is apt for gardening tasks. Sievewright and flour sifter are both common terms. In the 19th century, the mesh was made from horsehair mounted on steam-bent wood. In the late 19th century, metal became increasingly popular. There were several companies making metal meshes. Today, fine mesh is also available in polyester. Great Britain has one professional traditional sievewright maker, Steve Overthrow (www.sievesandriddles.co.uk/). He makes them in steam-bent wood with pre-woven metal mesh (a sieve) or weaves a mesh with steel wire (a riddle).
Horsehair weaving is one example of a craft that provided income for farmers in rural Sweden in the late 19th century. When the craft was becoming extinct in the early 20th century, museums collected artefacts, tools, with ongoing processes, photographs and memories from horsehair weaving. Only a few weavers have made reconstructions since 1990, and they have focused on reconstructing the product (Anderskau, 1999; Fröberg, 1994; Kristiansson, 1989; Viksten Strömbom, 2009; Wingolf, 2017).

My interests are tools and crafts. During an inventory of old types of heddles and equipment for heddle-making (www.marieekstedtbjersing.com/solv), I found a tool with an ongoing process to make heddles for horsehair weaving (Figure 2, Nordiska Museet, Nm.0210704).

AIM
This paper aims to discuss how preserved documentation of artefacts, tools and photographs, together with preserved documentation, can revive the craft of horsehair weaving for sievewrights and how to create ongoing public documentation.

METHODS
Based on several reconstruction projects, a methodology has been developed to understand and reconstruct old crafts and artefacts (Ekstedt Bjersing, 2021c, 2022a, 2022b, In print). It consists of gathering knowledge within the craft, applying a moving searchlight approach and adopting a forensic perspective. Documentation is a process of interpreting, collecting and sharing information.

The gathering of craft knowledge must take place before a critical review can be made (Sjömar, 2017). Even if I had weaving skills, the material (horsehair) and the product (sievewright) were new to me. Questions are a driving force in my reconstructions (Ekstedt Bjersing, 2023). When, precisely, is the amount of knowledge that a craftsperson has gathered great enough to enable them to ask critical questions? (Sjömar 2017). I struggle with the answer. As a reflecting craftsperson, I think the answer is “never” or “right now”. Being aware of a lack of knowledge is a good start.

This work is inspired by ethnology and the moving searchlight (Ehn & Löfgren, 1996). During the process of reconstructing a craft, I continually shifted my focus. The spotlight has been directed at one thing at a time. How can heddles be made? How to handle the short warp? How can different knots be made? How can the weft insertion be made? How can the material be handled? A consequence of directing attention to one spot at a time is that other aspects will remain outside your attention in the shadow, which is why it is so important to have a moving searchlight approach.

Forensic investigations are usually conducted in criminology. Almevik (2017) applied a forensic perspective to craft research. This involves searching for clues in the use of material, tools and working methods in combination with reconstruction to make it possible to make a hypothesis about how the crafted object was made. Every small clue is important.
Documentation
Creating documentation is like an investigative process, a way to discover new knowledge (Almevik, 2017) and an important part of scientific investigation. It is important to be aware that a lack of knowledge can affect documentation. Is the documentation of the craft related to the learning process or professional working methods? In my previous work, a great portion of the documentation was usually made at an early stage. After attaining knowledge, documentation is not needed for personal use since the knowledge is internalised. Documentation takes time and interrupts the workflow, but it is important, as it supports awareness of the work process.

My reconstruction process of horsehair weaving was published on Instagram and Facebook. Photographs were taken throughout the working days and served as a diary. Selected photographs were published in the evening. It was an ongoing documentation on my ordinary account and #tagelväning was used. With a hashtag, pictures can be found easily and quickly. The photographs were formatted using the default square Instagram format. There were often several pictures in a single post, and sometimes, there was a video reel. More comprehensive documentation, including background, sources and craft, was collected on a separate webpage (www.marieekstedtbjersing/tagelvävning). I used an existing webpage and included pages structured like a book with a table of contents and different chapters. I have also made unpublished personal notes, sketches and a database of the meshes, with comments. The reason for choosing public documentation was to make the information available in return for the knowledge that individuals and institutions shared with me. Working as a single person can be lonely; this is a way to maintain dialogue.

SOURCES ON WEAVING WITH HORSEHAIR FOR SIEVEwrights
There is documentation from three different parts of Sweden:

- Bredaryd and nearby villages, Småland (Anderskou, 1999; Karlsson, 1989; Bredaryd Local History Museum, Nordiska Museet)
- Gagnef, Dalarna (Sundlöf, 1931; Dalarnas Museum)
- Gudmunstjärn, Ångermanland (Kristiansson, 1989)

In the first two locations, horsehair weaving was a subsidiary industry. In 1930, about 80 sellers (knällar) from Bredaryd, Småland, walked around selling sievewrights and other products. The number of makers is unclear (Karlsson, 1989). In Gagnef, in the 1930s, a single weave’s family remained and Dalarnas Museum collected and documented their work (Sundlöf, 1931). The woman at Gudmunstjärn Farm wove for subsistence (Kristiansson, 1989), although her loom was typical for textile production.

There are a lot of sievewrights preserved, privately owned and in museums. Sievewright was an item that was used and worn out – an everyday object that rarely has any markings. It is likely that most of them are from the late 19th or early 20th century. The mesh could be replaced. In preserved sievewrights, clues about weaving can be found only if the sievewright is broken and the starting or end board is visible.

Workmanship of certainty
The workmanship of certainty and the workmanship of risk are terms that describe how a craftsperson works (Pye, 1995). When talking about craft, it can sometimes be difficult to determine what is made by hand and what is not. Handmade crafts can be made partly with machines. Instead of dividing work done by hand or machine, work is divided according to its purpose. The workmanship of certainty is done to quality specifications and may involve mass production. The workmanship of risk follows the material at hand, and every single product can look different (Pye, 1995).

The documentation of horsehair weaving mostly concerns a production – workmanship of certainty. There is very little information about horsehair weaving for subsistence. Since most of the preserved documentation, including artefacts, concerns farmers’ subsidiary industries, the craft will be analysed as a workmanship of certainty.
RECONSTRUCTION OF HORSEHAIR WEAVING

Horsehair is obtained from the tail of the horse, which means that the material has a specific length. The material is shiny, stiff and has no elasticity, and as for all natural materials, there is variation in quality. In a sievewright, there are horsehairs in both the warp and the weft. This presents a challenge in weaving. The horsehair must be at least 60 cm long and can measure up to 1 m in the warp.

LOOMS FOR HORSEHAIR WEAVING

Weaving is a ‘production of fabric by interlacing two sets of yarns so that they cross each other, normally at right angles’ (Encyclopædia Britannica.). One set of threads – the warp threads – passes through heddles. The heddles are attached on shafts with a minimum of two shafts to make it possible to raise and lower the warp threads into different layers, making a shed. The weft is inserted through the shed. Since the warp is fixed between the warp beam and the cloth beam, creating a shed can be difficult, particularly if the warp threads lack elasticity. Common solutions include working with loose warp tension, having a relatively long distance between the beams, using a loom that has flexible beams or using a low shed (Ekstedt Bjersing, In print).

FIGURES 3 and 4. Old loom from Bredaryd (Figure 3). The rebuilt loom for this project. Rebuilding the loom has been a process – first the heddles and reed were changed, and then the beater and the front beams were changed from a square piece to a round one. The frame was the last to be rebuilt to make the shafts and beater closer to each other (Figure 4). Photo Marie Ekstedt Bjersing

Preserved old looms and those in photographs show the same solutions. The looms were narrow, small and not very deep (Figure 3). Since horsehair has no elasticity, the shed must be low. A consequence of a small shed is that the beater must be close to the heddles. This also means that the distance between the fell and the shed must be short. I have used a loom that has been rebuilt to fit the traditional way of horsehair weaving, with a focus on the technical parts (Figure 4). Heddles were reconstructed. The tool (solvraka) from Nordiska Museet makes heddles that measure about 13 cm and a shed with a maximum height of 5 cm (Figure 5).
How can short horsehair be handled in the warp?

I identified two methods for handling horsehairs in the warp. In both cases, a single horsehair mesh was woven in one weaving setup. That means weaving one mesh a day, and you must dress a loom a day. To weave two small meshes, one after the other, is only possible if you have long horsehairs. The first method is to extend the horsehair by tying it to another material: linen or cotton threads. The other method is to make small bundles of horsehair and knot them to the warp beam. Making knots in a material that is both smooth and stiff is a challenge. The knots can easily become untied.

Many times, several members of a family were involved in the weaving process. A woman or child could dress the loom. This was done outside the loom on a simple frame where the warp beam could be placed and the heddle and reed could be hung up. At the same time, someone else would weave a mesh. One or two weaves per day was the goal. (Sundlöf, 1931; Karlsson, 1989). This was also my target, one mesh per day.

Method 1: Extending the horsehair

Make the hairs longer by tying 2–3 hairs together using a warp already dressed on the loom. The threads can be single-linen thread or two-ply cotton thread, and the same warp can be used many times. Various knots can be used. A piece of glue or flaxseed solution is sometimes used.

Many thoughts and experiments went into the knots. The published documentation was often unclear, for example, regarding how glue was used. Was it applied for securing the knot, preventing the knot from sliding, keeping the ends of the knot together or reinforcing the additional warp threads? With the first 10 meshes, the focus was on how to make the knot. The clues below helped me understand different knots:

- Descriptions made by other weavers when their reconstructions were made
- Old documentation of horsehair weaving
- Knowledge that the process of tying a new warp had to be finished within a few hours
- Identifying the problem of tying two different materials together
- Information from webpages for fishermen
- My fingers were hurting

The first knot identified was a single knot combined with a weaver’s knot – sometimes mentioned as used with glue. Earlier reconstructions used cotton thread for extension (Anderskou, 1999; Kristiansson, 1989; Viksten Strömbo, 2009; Wingolf, 2017). I used linen thread and had a problem with the knot until I identified the importance of tying it with the extension thread going around the horsehair instead of the other way around (Figures 6–9).

The second knot, the one I have used, is a double-weaver’s knot. The extension thread must be tied around the horsehairs. Initially, I trimmed the ends after I had made the knots, but then I learned how to fold the horsehair for the right placement and twist the linen thread around itself (Figures 10–14).
Method 2: Make bundles of horsehair

Another method is to make small bundles of horsehair (Fröberg, 2006). A bundle of about 60 hairs is tied into a knot and then tied on the warp beam (Figures 15–18). For this method, the horsehair needs to be longer. In Bredaryd, both methods appear to have been used. I can see the advantages of both. I would prefer this method when I have long horsehair, no colour stripes in the warp and weaving in plain weave.

How to handle the horsehair for weft?

The horsehair has a given length, and 2–3 hairs are inserted together in the shed. There is little information about special tools for weft insertion. Wooden sticks are preserved at the Bredaryd Local History Museum (Figure 19). The shuttle needs to be low due to the small shed, and my research has shown that no special tools are needed – a tool can be used in many ways (Figures 20–21). Two shuttles with a clip have been found in Småland (one privately owned by the author), which may have been rebuilt for horsehair weaving (Figure 22).
FIGURES 19–22. Old sticks for horsehair weaving from Bredaryd (Figure 19). Various shuttle tools for weft insertion. A shuttle with an eraser that has a groove cut into it. My thumb began to hurt, as it was difficult to put the horsehair in the cut in the eraser (Figure 20). A bundle of horsehairs tied into a shuttle – a solution I figured out, and it worked well (Figure 21). Old privately owned shuttle from Småland with a clip attached, probably rebuilt for horsehair weft (Figure 22). Photo: Marie Ekstedt Bjersing

**Method 1: A few hairs at a time**
Initially, I thought I needed to insert 2 hairs at a time. I tried using a stick with adhesive pulp to insert the weft into the shed. Then, I used a shuttle with an eraser inside, placing 2–3 horsehairs in the cut on the eraser for every weft (Figure 20). With further improvement, several horsehairs were placed in the eraser cut, releasing 2–3 horsehairs at a time (Video 1).

**VIDEO 1.** Weaving in June 2020. The horsehairs are tied to linen threads to make them longer (warp method 1). The two hairs that are needed are put into the cut (weft method 1). To watch the video, click the picture. Photo: Marie Ekstedt Bjersing

**Method 2: A bundle of horsehair, releasing hairs**
I found I could use a bundle of hair, tie it to a shuttle and release a few hairs for every pick (Figure 21, Video 2). In one hand, I held the bundle with my thumb on the shuttle. With the other hand, I took out the hairs I wanted. This was a much quicker solution.
Weaving
The weaving process was fast and could be done in 2–3 hours. The first portion of the work was difficult before it stabilised. In the first horsehair mesh, I had a problem with knots becoming untied. In the end, as the knots came nearer to the heddles, there were sometimes problems with the knots sticking together. With every mesh woven, the work became easier. It was more difficult to weave a striped mesh because of the quality of the different horsehairs. The white horsehair was generally softer and the black generally stiffer, but there could be much variation in both thickness and shade within the same colour bundles.

EXPERIENCES OF PUBLIC DOCUMENTATION, #tagelvävning
Photo documentation of this project was shared on Instagram and Facebook (Marie Ekstedt Bjersing). A total of 51 posts were shared between June 12, 2019 (Figures 23–26) and August 11, 2022 (Figures 27–30). I wanted easy documentation, as offered by social media platforms.
Most people just liked my pictures or commented that they liked what they saw. When I summarised the comments, it was difficult to get an overview on Instagram but a bit better on Facebook. The questions were few but still valuable. Where can I buy horsehair? What is the end use of the mesh? How do you clean horsehair? Will you be teaching a course on horsehair weaving? This gave me a clue about what information I should put on the webpage. People contacted me directly via messenger or email, sharing photographs, articles or other documents. Many people have seen my project and when meeting me, they wanted to know more about it. I have looked at project pictures many times – first, when I selected them, and then again when someone commented or liked a photo. It is a reminder of the progress, and often, I see the work from a new perspective. The #tagelvävning hashtag was also useful as a reference when communicating with others about the project.

**FIGURES 27–30.** Picture on Instagram #tagelvävning, August 11, 2022, after visiting the Bredaryd Local History Museum. I am sitting on a loom donated by Maria Johansson from Böle, Bredaryd parish (Figure 27). Heddles made of cotton (Figure 28). Bundles of horsehair for weaving (Figure 29). Detail from a sievewright (Figure 30). Photo: Bredaryd Local History Society and Marie Ekstedt Bjersing

**CONCLUSION**

Reconstructing crafts in a scientific study requires documentation. I have shared the documentation for my horsehair weaving in public via social media and my webpage. Inviting others to an ongoing process has been helpful. Communication with others, who have sometimes had unexpected reactions, also helped maintain a moving searchlight approach. A problem with documentation is that it halts the workflow of the craft. At first, I wanted to make the homepage more interactive. Videos were useful for seeing and analysing the craft but were difficult to use for documentation. My skills were developing, and the motions of the craft differed depending on the circumstances. The videos conserved a simplified view. This was not a problem with photographs, as they sometimes allowed for a wider interpretation.

My weaving with horsehair is an ongoing craft reconstruction project. At this point, I have gathered enough knowledge to ask critical questions. I have identified key parts of the horsehair weaving process and its tools: the loom, different methods for using horsehair in the warp and different methods for weft insertion. Regarding the craft as a workmanship of certainty was a way of understanding it. What is a good-quality mesh? What quality was required? How much has tradition changed over time?

The raw material is critical. With longer horsehairs, weaving will be easier, but there may be a limit when the horsehairs are too long and therefore difficult to use. My experience is that it is difficult when the bundle of the horsehair is too variable in length and thickness. Even if I take two horsehairs to get the same thickness as one thick horsehair, the softness will differ.

Today, Sweden has no living tradition of weaving with horsehair. When I saw tools for horsehair weaving in 2013 at Nordiska Museet and Dalarnas Museum, my focus was on the heddles, and horsehair weaving was new to me. In August 2022, I visited the Bredaryd Local History Museum, and then, I understood the tools and the process in a different way. There are a handful of weavers who have made single reconstructions of mesh for sievewrights, including myself. We have used different solutions in the crafting. The mesh-making tradition itself offers several solutions. In the craft process, there will always be different ways of working depending on different conditions. In my public documentation,
common themes and variations in the craft are shown, making the craft and its associated intangible knowledge more visible.

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REFERENCES


