THE ORKNEY HOOD AN ANCIENT RE- CYCLED TEXTILE

by

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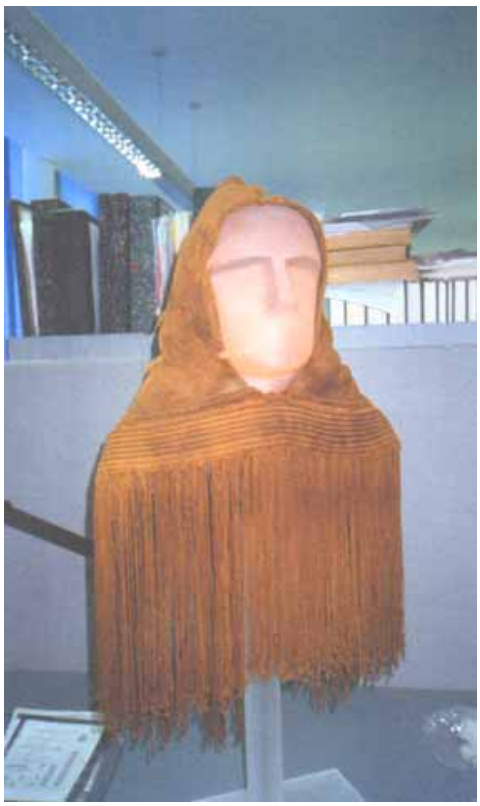

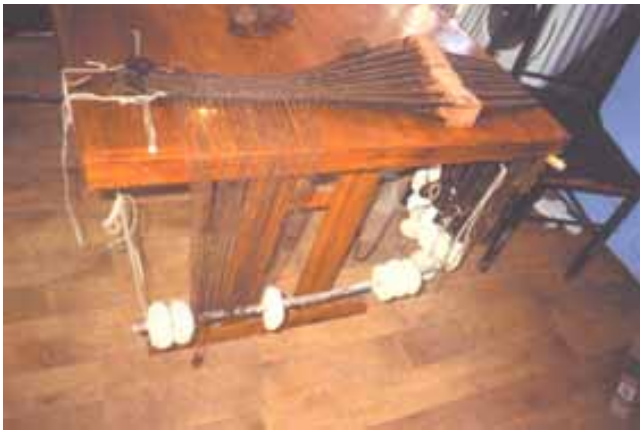

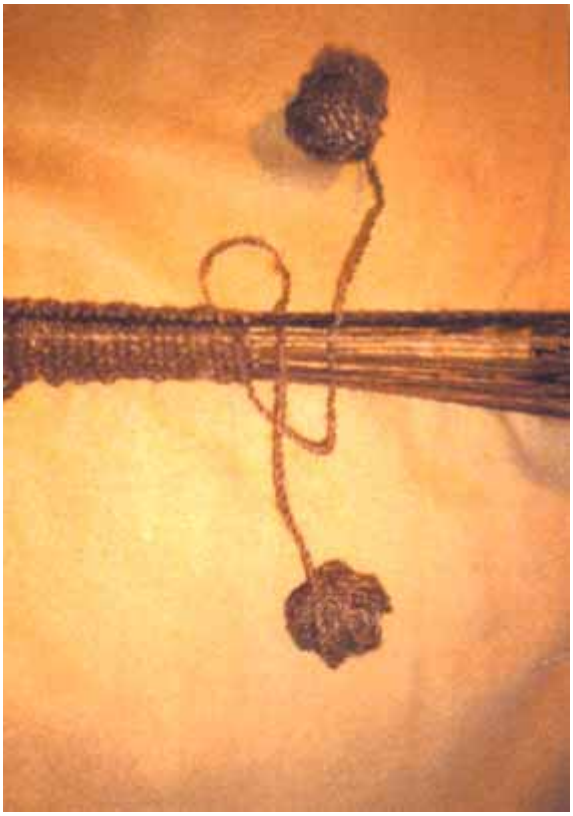

In St. Andrew's parish Orkney in 1867 a garment was found in a peat bog, which was subsequently named 'The Orkney Hood' (illus 1). This apparently unique garment with its complex weaving and double tablet woven bands with fringe, was taken to the National Museum of Scotland in Edinburgh for display. The hood remained on display for approximately 83 years until it was studied in detail by

A .S. Henshall, (Henshall 1951-52, 9) in this report it was suggested that the hood could be of Iron Age or Viking origin due to the tablet woven bands which were a typical feature of Scandinavian textiles of these periods. It was also suggested by Henshall that the style of the fringing on the hood could have its origins in Bronze Age Danish Textiles. A recent report on the Orkney Hood (Gabra-Sanders 2001, 98) also comes to this conclusion. These suggestions are references to the Egtved corded skirt (Broholm and Hald 1948, 30). However the Egtved skirt which I have replicated in the past, is made of an entirely different technique. This skirt was made of a twisted wool fringe, which was interlinked at the hem, the fringe was not free falling as the hood fringe was. The cord also issued from a plain tabby woven band and not from a tablet woven band as

the fringing on the Orkney hood. Therefore it does not in any way relate to the techniques used in the manufacture of the hood and should not I feel be compared with it.

I was commissioned to make a replica of the Orkney Hood following a lecture I gave on 'Experimental archaeology in the 21st century' at the Seachange conference in Orkney, September 2001. This paper will reveal the conclusions and discoveries I made while manufacturing the replica hood for display at the Minehowe Know How event in Orkney May 2002. The first prerequisite prior to making the replica was to find out what type of wool it was made of and if it had been dyed to produce the two tone brown and golden shades of the original. In 1981 the hood was taken to the Conservation and Research Laboratories of the National Museum of Antiquaries of Scotland for full conservation treatment. The subsequent analysis prior to conservation ascertained that the wool had not been dyed (Findlay 1981, 95) and that the brown colouration came as a result of pigments in the fibres, indicating that it came from moorit sheep (naturally brown fleeces). Also preceding conservation a radiocarbon date was obtained of 1595± BP i.e. AD *c* 250-615 which essentially confirms Henshall's suggestion that the textile had an Iron Age date. M.L. Ryder in his essay on the evolution of sheep breeds (Ryder 1968, 139) suggests that the wool used to manufacture the hood was of a hairy medium, fine type of fleece very similar to that of Shetland sheep fleeces. Coloured Shetland sheep are relatively common in my home county of Cornwall this made the task of finding the raw materials for the hood comparatively easy. However when studying photographs of the hood I noticed that the majority of the textile had a very distinctive golden hue to it. I therefore proceeded to my local Wool Marketing Board wool sheds and acquired as large a colour range of Shetland fleeces as I could find, eight in all from Black to a Pale Apricot. I travelled the following week to Edinburgh to study the hood first hand at the National Museum of Scotland, armed with sixteen switches of fleece (two from each fleece one from the top and one from the bottom). At the museum I was given a desk in the office and the hood to scrutinize for the day. The main part of the hood was lighter and yet a more vibrant golden colour than I had ascertained from photographs I had studied. In reality it was exactly the same as the sun bleached tips of the mid brown fleece I had brought with me. The natural colour of sheep wool bleaches with the sun during the summer, this bleaching effect continues when it is made into textiles too. Very much the same as an old faded woollen blanket does. This suggests that the main part of the hood was originally a mid brown and paled down with age to the rich golden colour it is today. This hypothesis was given weight when I tried to match the dark brown bands in the tablet weaving. The tips of the black fleece were almost exactly the same as the dark brown colour on the original. Therefore I suggest that the original hood was made of dark brown Shetland fleece with Black Shetland fleece stripes in it. Armed with a days measurements and innumerable photographs I left Edinburgh for Cornwall to begin my commission.

The Loom

The first job I needed to do before I could begin to make a replica of the hood was to make a simple warp weighted loom. The simplest method of loom construction is to select two forked trees for the main uprights approx 11 cm diameter and 180 cm long. Three straight branches are also required one to slot between the two forked trees and the other two to be lashed approx 40 cm from the base to stabilize the loom. This type of loom can be made in a morning and warping the loom can proceed in the afternoon. A series of 3 cm holes are then required half way down the forked uprights to peg in the forks to lift some of the sheds. This was done with the aid of a modern electric drill but I have in the past drilled these holes with primitive push drills the latter takes about 15 minutes per hole. Two small forked branches 3 cm thick and 20 cm long are needed to peg into the holes in the uprights. Finally three straight sticks of hazel are required, two for the sheds and the other stick to hang from the top of the loom. The latter will be bound tightly with string to separate the warp threads and keep them apart during the weaving process. Now the loom structure is complete apart from the manufacture of the round clay weights to hold the warp threads taut.

Taking my measurements from Henshall's report in the 1950's the woven fabric was approximately 49 cm x 45 cm and was cut from a larger piece of cloth as there were no selvages evident. This led Henshall to suggest that 'although no selvedge remains there is no doubt which set of threads is the warp, for a gore occurs at A on the plan, and irregularity which can only be formed in the weft.'(Henshall 1951, 10). This supposition although valid when studying the garment led me down a path which took at least a month of frustrated efforts to find it was inaccurate, I will describe this in detail later in this paper. My measurements of the hood revealed that 10 warp threads per cm were needed so as to give myself a little cloth on each side I would need 540 0.5 mm single z spun threads to warp the loom. Shetland wool is very easy to spin this fine, however when required for a single spun warp thread it needs to be very tightly spun in order to take the wear of the sheds and the pull of the weights.

My previous experience when using a warp weighted looms was not with such fine warp threads. This led on to an interesting conclusion, which will undoubtedly improve my weaving proficiency in the future. As a rule one ties bundles of the warp threads through the holes in the loom weights. Due to the fineness of this yarn and amount of warp threads required, as the warp threads were tied through the weights they could not fall freely and tended to rest upon each other thereby not applying the necessary tautness needed for the weaving process. The only method that would keep the weight distributed evenly was to push a stick through the holes in the weights and tie the warp threads to the stick either side of the weights. This was an exceedingly superior way to warp a loom as when extra weight is needed during the weaving process as is often the case, weights can easily be added to the sticks (illus 2).

The Woven Cloth

The cloth of the hood was a 2/2 herringbone twill weave with very erratic widths of the chevron stripes. These widths ranged from 18 warp threads per stripe to 88 warp threads. This is very unusual as the chevron stripes in 2/2 twill weaves in the iron age period are customarily even. In a study of woven fabrics and their construction in Danish Iron Age textiles Margaret Hald observes:

‘ 2/2 twill is the most usual form of twill. A weft thread passes alternately over two and under two warp threads, with the result that the right side and the reverse side of the fabric is similar. The points of intersection are not as close as tabby, therefore a twill fabric is softer and more comfortable - an advantage which probably contributed towards the change in the Bronze Age from Tabby to twill fabrics…. The simpler variations of twill are made by changing the direction of the diagonals. Shifting the points of intersection so that horizontal zig zag lines are made produces the weave called pointed twill.’(Hald 1980, 148)

Hald goes on to describe twill pattern variations but in all instances the zig zag patterns are symmetrical. Henshall surmised in her research the warp threads were single threads and the weft threads were fine and used double, in other words each horizontal thread was made up of two fine threads used together. Also she suggests that the chevrons ran horizontally across the loom in a very uneven zig zag pattern.
I began to thread the loom using this assumption. A 2/2 twill weave requires four different sheds to form the twill weave pattern. Therefore I had to calculate which warp threads should be attached to the four sheds incorporating the uneven chevrons into the calculations. I really did not think this would be a problem until I actually tried to do it. It is important I feel at this stage of my report to detail just how uneven the chevron stripes were. These numbers are the warp threads per stripe each time they changed the direction of the stripe: 18, 18, 28, 24, 18, 38, 42, 26, 22, 88, 26, 26, and 18. It took about two days or 16 hours to thread the loom before I could start weaving. After twelve rows of weaving the pattern appeared to be working, until I inspected the reverse side of the cloth and discovered innumerable loose threads forming loops at the change in the chevron stripes. So I unpicked the weaving and started to re-thread the sheds again because the cloth was a 2/2 twill weave the whole loom had to be re threaded again another two days work. I did in fact re thread and start weaving the loom for 48 hours trying every conceivable method I could think of to accommodate the uneven chevron stripes. The only feasible conclusion I came to was that it could not be done with the zig zag stripes horizontal. The only other way to try it was to treat the single warp threads as weft threads and the double fine weft threads as warps. So I re threaded the loom again using double fine threads as one, which worked very well although the two threads were not plyed together, they were just a strong as if they were plied. The loom was threaded again and this time I was sure it would work as the twill weave went as a block in one direction until the number of rows were woven such as 18 rows, 18 rows and 28 rows etc. While studying the

hood at the NMS I noticed that at each change in the chevron direction there were an indented strips at each change. After examining some of the close up photographs taken during its conservation in 1981 I noticed that there seemed to be three treads picked up along the strip instead of the two needed for the twill weave. A simple solution to this anomaly occurred to me rather if I used a bone needle I could catch three warps treads and leaving one back and on the next row I could catch one thread with the needle and leave three back (illus 3) this created a similar indenting that was evident in the original. I continued to weave the fabric in this way, there were no looped threads and the weaving looked identical to my photographs of the original. However when the weaving was complete and I measured the fabric and it was at least 20 cm too long! This was turning out to be a very challenging project. I had to go back to my measurements and re- think where I had gone wrong. It had to be something to do with the thickness of the weft threads as the width was the right measurement. I had wrongly assumed that all the weft threads in the fabric were the same thickness I found when I calculated the widths of the chevrons to the number of rows that there were in fact four very different thickness of yarn used for the weft. This was very noticeable with hindsight the 42 row band measured 4 cm whereas the 38 row band measured 5 cm. I ascertained that the four distinct yarns were as follows 7 rows per cm, 8 rows per cm, 9 rows per cm and 10.5 rows per cm. These different thicknesses of yarn were erratically distributed throughout the fabric. Having had some experience teaching groups of people how to spin on a spindle whorl I have found that people find their own thickness of yarn that they find easy to spin. Most students acquiring spinning skills find that they can easily spin an even yarn at their own personal thickness, some very fine yarn and some much thicker. Whereas a skilled spinner can spin any yarn thickness to order the average spinner tends to spin always at the same thickness. I suggest that therefore that there were four distinct spinners making the yarn for the hood. This would account for the uneven chevrons of the pattern. If a fine thread was added after a thick one this would form a ridge in the weaving and be noticeable, but if one always changed the direction of the chevron when a new yarn was added the difference is unnoticeable, as I found to my cost when making my first replication of the weaving. I continued to re weave the cloth, which I was content, was as near a reproduction of the original as possible. I made some very tentative calculations about the possible size of the original cloth, which I must emphasize, are pure conjecture. By calculating how many rows a full spindle of the various thicknesses could weave I deduced that the original cloth that the hood fabric might have been cut from could have been over one metre wide.

The Tablet Woven Bands

The technique of tablet weaving is a method of weaving bands using various numbers of square or rectangular tablets usually made of wood with holes drilled at each corner. Warp yarn is threaded through the holes in the tablets and the ends of the yarn are weighted so the yarn is taut and the tablets can be bunched together to allow the weft threads to be put through. Each time the weft thread is inserted through the shed made by the

tablets, the tablets are twisted once maybe twice depending on the pattern needed. Thicker yarns are included sometimes to make ridges on the band and they are threaded through tablets with just two holes in them.(illus 4)The two tablet woven bands of the Orkney hood would require 56 wooden tablets to manufacture them. I decided to copy the size of the tablet excavated in Denmark in 1888 in Ringkobing County Denmark (Hald 1980, 225). This tablet is 4.75 cm x 5.5 cm and is dated to the Celtic Iron Age *c* 200 BC.

The Narrow Band

The narrow tablet woven band on the hood was made using six tablets and the finished band was just 2 cm wide. The yarns on this band were varied in colour and thickness but were not fine work. There were two yarns on the left hand side of the band not threaded through a tablet, which were incorporated in the weaving at the top edge to form a selvage. The first was a two ply yarn using a light and dark yarn together, the second was a thick single spun dark thread. The first tablet next to the selvage had four holes and the yarn was fine and dark brown, the second was another four holed tablet this yarn was light brown and a little thicker. Two two holed tablets were used next threaded with the same light brown yarn as the pervious four holed tablet. The final tablet was four holed and had a finer yarn threaded in a mid brown colour. Lastly a single fine mid brown thread was used to create a fine selvage on the right hand side of the band. The weft threads were 2 mm thick two-ply mid brown yarn and were used double to speed the weaving development. This double weft technique is sometimes used to simplify the tablet weaving process as it is much quicker than using the weft singly as the tablets only need to be twisted once to incorporate the two yarns. However the weaver made this process unnecessarily complicated by making the crossing point of the two yarns after the first tablet instead of at the ends (illus 5). This band was 84 cm long and was spun and woven in 12 hours.

The Broad Band with Fringe

The lower tablet band was poles apart from the pervious band, it required 50 tablets to make and was no more than 6 cm wide when woven. The warp yarn was a mixture of light brown and dark brown which created a striped band pattern on the finished article. One hundred and fifty warp threads were used with 26 two holed and 24 four holed tablets. The tablets were grouped together to form a pattern in the twist as well as with the colours. The four holed tablets were threaded with black yarn and the two holed ones with brown yarn. At the

top of the band two two plied brown threads were used to create the selvage, also next to this a two-holed tablet was used singly with heavy black yarn. Alternate groups of the black four holed tablets and the brown two holed tablets were used to form the twist and colour pattern. These groups were as follows: 3 black, 4 brown, 3 black, 4 brown, 3 black, 3 brown, 3 black, 3 brown, 3 black, 3 brown, 3 black, 4 brown, 3 black, 4 brown, 3 black. All the tablets were twisted two turns which made the twist on the four holed tablets twice as tight as the two holed tablets, also each group of tablets were threaded in different directions thus adding to the delicate pattern of the twists. It was not until I tried a test piece of this broad tablet that I realized how fine the dark or black wool bands needed to be in order to produce a 1 mm twist. The black yarn tablets were four holed and the black yarn was two ply. The measurement of the twist completed was 1 mm! This meant that I had to spin a thread that when plied then twisted with four others made just 1 mm. The yarn was almost as thin as cotton when spun an achievement that is entirely possible with Shetland wool. The traditional Shetland shawl that can be spun so fine that when knitted it is possible to thread it through a wedding ring this is confirmation of the fine quality of these fleeces.

The broad tablet band also had a fringe as an integral part of the weaving process. In order to make it I devised a double weighted table loom in order to make this band with the fringe. (illus 6) This was necessary because the tension had to be kept on the fringe in order to keep the fringe an even length. I calculated it took one hour to weave 11 rows so the weaving of the band took 16 plus hours to weave the 175 cm length. Henshall suggested that the warp threads were used double in this band as they had been in the narrow band but when I tried this it made the ridges formed by the twists too thick. I can however see why it looked like this when examining the garment. When the weft thread goes through the tablet shed it links two single threads at the top as described in the narrow band to form a selvedge. The thread after the next twisting of the tablets goes through the shed again but this time travels to the fringe weight bar and back again to the tablets. As the process continues when the thread returns towards the fringe weight bar it has to be pulled tight to keep the weaving the right width just 6 cm wide. Otherwise the weaving would spread, as it does not have a selvage on the fringe side to keep it in place. I contrived a solution to this problem; if I knotted two weft yarns together as the weft yarn heads towards the fringe bar it would keep the weaving in place. This knot seemed to tuck itself under the fringe edge of the warp threads and was not noticeable. However when the process of twisting the fringe took place this knot could be undone individually and the twist would take over the task of holding the weaving in place. I calculated that it took 34,000 double twists to make the broad tablet band. The fringe of the band is also unusually elaborate. In Danish archaeology there are examples of fringes being made from weft threads on tablet woven bands such as a fabric from Thorsbjerg Mose dated from early second century to early fifth century A.D (Hald 1980, 70) (illus 7). Merely twisting the weft threads together in pairs makes the fringe on this example it is basically an easy solution to finishing off this particular garment. The weft threads as can be seen in the diagram are in this instance the warp threads of a larger piece of weaving that the tablet

weaving is edging. The Orkney hood fringe has separate two-ply yarns added to enhance the fullness of the fringe. This extra yarn was knotted at the tablet-weaving end of each pair of weft yarns, these yarns are then tightly hand twisted to form the fringe. Each twist end was then double knotted to give weight to the fringe when it was worn, as it would fall better with a heavier knot at its extremity (illus 8). It took 60 twists to produce each strand of fringe and 25 fringes could be twisted per hour, a total 350 strands of fringing altogether. Consequently the fringe twisting took 14 plus hours to do. The fringe was 28 cm long at the front graduating to 33 cm at the back. In order to allow for the take up of the twist the length of the fringe yarn before twisting had to be 45 cm long. The broad tablet band was wrapped around the base of the narrow band almost twice leaving a gap of 20 cm at the back with only one thickness of band and fringing.

Assembling the Hood

Assembling the three parts of the hood was by comparison a simple task. I cut the hood shape out and over stitched the fabric to stop it fraying. The seam at the crown involved nothing more complex than just joining with a simple hemming stitch. The pointed pixie like peak to the hood is not I feel contrived as a fashion feature but it is made as a result of making a straight seam at the crown. I was stuck by the crudity of the sewing on the original garment. The hem that framed the face was a rudimentary and shabbily sewn over stitch. The skills of the hood maker appeared to be worlds apart from the maker of the cloth and the broad tablet woven band. The narrow band appeared to have been specifically made to trim the cut edge of the woven hood fabric. The Broad band with the fringe however was clearly taken off another garment. This is evident because it was not quite long enough to circumnavigate the entire length of the narrow tablet band that was attached to the woven cloth. There was a 20 cm shortfall which the hood maker disguised by wrapping the fringed band round the hood hem twice placing the 20 cm single band expanse at the centre back. This would make it barely noticeable to the wearer of the hood itself. The yarn used in the sewing was a medium thickness two ply brown yarn used in the tablet weft and fringe.

Conclusion

Making a replica of the Orkney Hood was a intriguing and to say the least a challenging piece of research (illus 9). The discovery of the new method of tying warp yarns to loom weights will be a method I will always apply when weaving with weights. In hindsight it seemed a logical way to spread the weight load on a loom, yet I have not seen this method applied at other textile research centres. The conclusion that there were four different spinners producing wool for the woven cloth and that it was a result of these varying thicknesses that

the weaver adopted the erratic chevron stripes is fascinating. It took 35 hours to spin the yarn for the twill fabric and 30 hours to weave it, that is once one knows its particular idiosyncrasies. The deduction that the hood maker had re-cycled the woven cloth and the fringed broad tablet band to make a hood for a child I feel is a compelling hypothesis. Also that the hood maker did himself or herself make the narrow band to fit the cut hem is also a valid assumption as the spinning and weaving of this band took just 12 hours. When one compares the narrow band with its six tablets to make a 2 cm wide band, with the fringed tablet band needing 50 tablets to make just 6 cm it really does emphasize the enormous disparity of skills required. Due to the fine quality of the black yarn in the broad band it took 77 hours to spin the yarn for the band and the fringe and 68 hours to weave it. The care taken by the hood maker to utilize these old garments to make a new article of clothing disguising the fringe length short fall at the back where it would not be noticed is endearing. The fringed tablet woven band was undoubtedly from a very high status garment; the fineness of the black threads and the addition of the extra yarn to make the fringe heavier add weight to this theory.

I suggest that this is a wonderful example from the archaeology of Iron age Orkney of the recycling of resources in the desire to make a garment for a child from the remains of two old yet cherished pieces of textile.

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