

Vadmal and other woollens

The woollen fabric known as vadmal has a long history in the Scandinavian countries. The word vadmal means “a measure of length” and was used as a standard of value. Vadmal, according to literature from the 19th century, was woven in plain weave or twill and was woven very densely. Some sources say that two weavers were required and that they had to beat each pick eight to twelve times for “prime quality vadmal”. The cloth was then pounded in a hammer mill for at least 8 hours, sometimes longer.

According to modern knowledge vadmal is woven very openly - the fabric should look like cheesecloth on the loom - and it only needs 1-2 hours of treatment and nevertheless will come out as the same type of fabric. Since operating hammer mills are not so easily found anymore, weavers now tend to do their fulling of woollen cloth in the washing machine. Ingrid wanted to learn more about the difference between these methods and suggested that we find a hammer mill where we were allowed to treat the cloth ourselves. Theory is fine, but practice is better...

We chose Mjonøy, a cultural centre and camping site in Telemark, Norway, for the experience. A weekend in June 2003 our little group, now consisting of five persons (among others Laura Fry from Canada), arrived to Mjonøy. The hammer mill is built according to plans from Hans Zetterquist from Sweden and is operated by Arne Skevik and the local guild of the Norwegian Folk Art and Craft Federation in Vinje, Telemark.



We had woven over 100 meters of woollen cloth in varying qualities, structures and colours, and we were ready to set out. We knew that the result from a hammer milling was supposed to have a much smoother - less nappy - surface than the results you get with washing machine fulling.

First of all, we wanted to experience the process of stamping - pounding. We also wanted to get useful cloth of different kinds. Last, but not least, we wanted to learn about why “old wisdom” is so different from modern knowledge. Therefore, we had made both dense and open weaves; we had used woollen spun singles, 2-ply and even worsted-spun 4-ply yarn; we had plain weaves, regular and fancy twills.

There is no exact definition of vadmal, but most Swedish weavers agree that it is so heavily fullled that you are not able to see the individual threads or detect the weave structure.

The hammer mill has two troughs, each of which can hold approximately 6-8 kilos of fabric. Each trough has two fulling stocks, weighing 45 kilos each. We found that it is as important

not to overload the trough as it is to not "under-load" it, as the fulling stocks can break the troughs.



On Saturday morning we were greeted by Arne Skevik, who helped us start the fire for the hot water needed to facilitate the fulling and demonstrated how to start the waterwheel and to operate the Stampa. He helped us get started with the first batch.

The cloth had to be taken out and re-folded every 15 minutes. We cut samples from most fabrics at each re-folding, so as to be able to evaluate the process when we got back home.

Two days later, ears ringing from the constant hammering, aching from unaccustomed physical labour, we loaded our still wet fabrics and drove home. Some had been hammered for as little as one hour, others had gotten over three hours of pounding. All of them had shrunk - shrinkages varied between 10 and 25%. Most of them were uneven in width, but none of them had the wavy edges we are so often warned of when using a washing machine.



We were satisfied with our results, even if none of us had gotten vadmal in the sense of a totally obscured weave structure. Some of the results were surprisingly contrary to what we had learned - the more open the fabric was, the longer it took before it started to full. Upon closer examination we saw that most of the fabrics also were unevenly fullled - there may be something in "the old wisdom" of 8 hours? Unfortunately we did not have the time for that during this weekend.

At home, some of the fabrics were hard pressed, some were mangled and one length was just rolled until dry. When we compared the dry results from the Stampa to the “control pieces” that had been fulled in a washing machine, we could see that there definitely is a big difference between the two processes. The machine-fulled pieces are soft and nappy - a little dull-looking, while the hammered fabrics looks more like “real cloth” - a stable fabric with very little nap and the wool has kept it's shine.

Kerstin decided to experiment with further fulling, using the washing machine until the fabric(s) stopped shrinking. These results show an interesting concordance with the old literature. The weight of a good vadmal should, according to them, be approximately 900 grams per square meter - and this is the weight obtained when the fabric was treated until it stopped shrinking.

Details for one of the fabrics:

With *cold* water (15°), it took 10 cycles (90 minutes each cycle) until the shrinkage stopped. Total shrinkage was 59% in width, 46% length, measured from the loom state fabric.

With *hot* water (90° C) it took 5 cycles, total shrinkage 65% in width, 51% in length.

With the first cycle *hot*, the following cycles *cold*, it took 1+4 cycles, total shrinkage 59% in width, 43% in length.

(Note: Swedish washing machines heat the water internally; this means the 90°-washes started with cold water. Also rinses are cold.)

This indicates that the old myth about “shocking” woollens to stop them shrinking is just that: a myth.

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Literature:

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