



Tabby Woven Headcovering

*Category 4:
Weaving*

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Summary

My entry for the weaving category is small woven scarf such as those found in Dublin and that date to the Viking age. This project is also part of an ongoing series of experiments that I have been doing to utilize rigid heddle weaving for SCA projects (as rigid heddle looms, despite their limitations, are a simple and cost effective way for new weavers to start producing items that they can use).

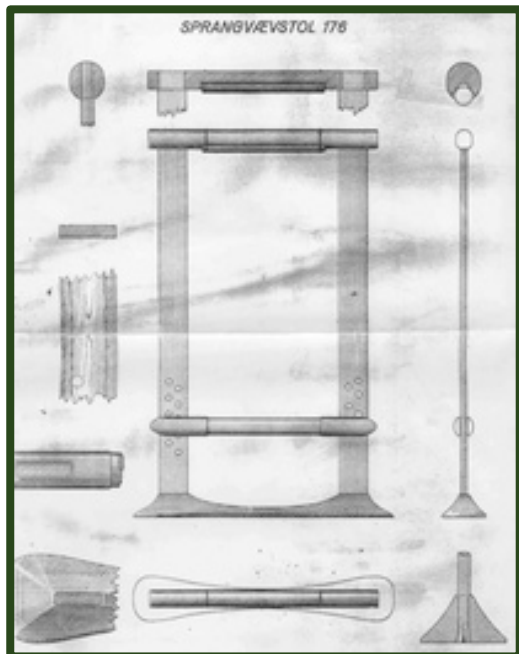
The weave of these headcoverings was deliberately open, resulting in a light, almost gauze-like cloth. Similar textiles were found at 9th Century Kaupang and 9th Century Oseberg (as well as other sites) which makes this weaving ideal for a woman of the 9th Century from the Vestfold region.

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History & Historic Process

The finds at Dublin are rich with wool and silk fragments that are presumed to be from women's head coverings. Among these are small wool scarves and caps that are woven from fine combed, Z spun yarn in an open tabby weave. The weaving itself has deliberate spacing left in both the warp and the weft, giving the fabric a very loose appearance. (Heckett, Headcoverings, 89)



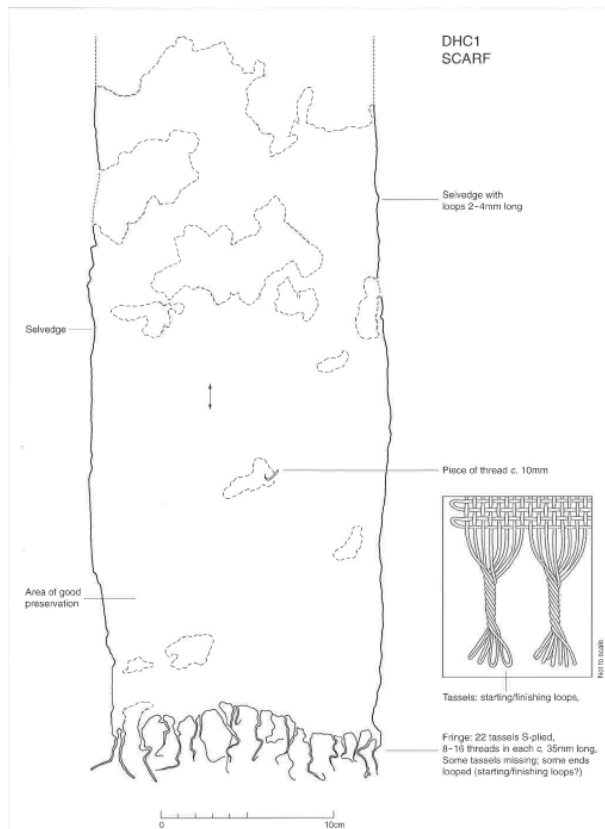
Above: Two beam loom (often referred to as the Oseberg sprang loom) that is a probable tool used for weaving of the Dublin caps. (Source: Unimus.no)

The wool head coverings typically have both selvages visible and often the scarves ended in twisted or cabled fringe. Because of existence of loops on both ends of the extant items and the lack of a tablet-woven border, it is more likely that they were woven on a small two beam loom, rather than a larger warp-weighted loom. (Heckett, Headcoverings, 98)

Similar loosely woven tabby wool cloth has been found at Oseberg, Kaupang, Mammen, Nyjoping (Sweden), Hedeby, Hørning (Denmark), Oslo and Leens (Holland). (Heckett, Headcoverings, 90; Krag, 129-132)

It is speculated that the fine tabbies found at many of these sites were actually imported items from the British Isles (and specifically, Ireland). (Ingstad, Textiles from Oseberg, 134; Ingstad, Kaupange-Funne, 266) The finds at Oseberg and Kaupang make this cloth a reasonable choice as a possession by my persona even if it had not been woven locally.

Unfortunately, we do not know from those Norwegian graves what final form fine tabbies took, though it has been suggested that the fragments from Kaupang might possibly have also been from a head covering. (Ingstad, Two Women's Graves, 162) Because I cannot determine exactly how the Norwegian fragments were shaped, I chose to base my piece on one of the extant examples from Dublin.



Above: Scarf diagram from Viking Age Headcoverings from Dublin by Elizabeth Wincott Heckett.



Above: Tabby woven cap from Viking Age Headcoverings from Dublin by Elizabeth Wincott Heckett.

Below: Veil-like fabric from Leens. (Brandenburgh, 63)



Left: Gauze-like tabby from Mammen. Z/Z spun with 40 threads per inch in both warp and weft.

My Materials & Process:

Rigid Heddle Weaving

Rigid Heddle weaving in the SCA period was used to make narrow bands (and was often used in conjunction with band looms). While I have never seen the wide rigid heddle looms we have now from the SCA period, that does not mean that they cannot be used to produce items for SCA use, display or competitions. In fact, I feel that these devices are optimal for new weavers because of ease of use and low start-up cost. Rigid heddle weaving at its simplest produces a tabby woven cloth (also known as plain weave) and that structure can be seen throughout history.

My purpose with this project is not to justify the use of a rigid heddle loom during the Viking Era (or for fabric weaving in period at all), but rather to offer it as a reasonable option for weaving period items. Many of us have woven early Norse garments on modern shaft looms, but as mentioned before, those are large and pricey and no more period for the Viking era than a rigid heddle loom. In my eyes, the rigid heddle system is often overlooked as an option by those who desire to learn to weave.



*Left: Roman rigid heddle dating to the first century CE, found in London.
Photo credit: Susan J. Foulkes*

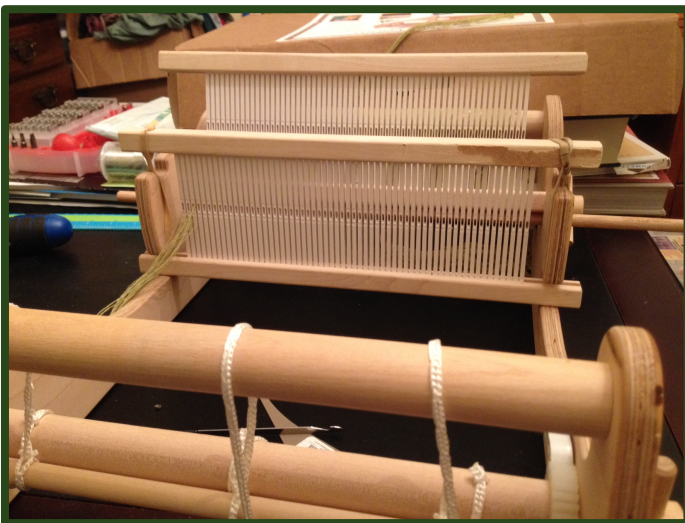


*Above: Band weaving from the Codex Manesse - 1300-1340.
Below: 14th Century Rigid heddle from Gotland. Photo credit - Historiska museet.*



Weaving the Scarf

For this weaving I chose to use my 10" Schacht Cricket loom. The Cricket is not ideal for 2 heddle use, as it does not have the support system for the second heddle, but it can work if you are willing to take the extra time needed for set up. I completed several fabric samples to determine which yarns work well for rigid heddle weaving and which do not, and from those I choose a yarn that would give an appropriate open weave feel that is described in the materials about the Dublin head coverings and still be of a suitable size to work on a rigid heddle loom.



After working up the several samples in fine yarn, I chose to use a very fine wool single that was a mill-end. Unfortunately, it was not as fine as the yarn typically used in period as mine measured approximately .32mm while most of the extant wool scarves used yarn closer to .20mm. However, there was one item from the find in Dublin that ranged up to .29 so using the yarn I already had would still give an effect similar to to the extant items.

I direct warped the loom using a warping peg. My desired length for the scarf is 20-21" on the loom (the first scarf I woven shrank up to 18" after wet-finishing, which is perfect) and I wanted fringe at each end that is 2-3 inches long. I had to allow myself additional yarn to tie onto the front beam and to set the weaving width after tie-on so I opted to place the back beam of the loom 4 feet from the warping peg. That additional yarn is waste (and I have it saved for future embroidery or brocading weft), but were this woven on an Oseberg type loom, there would have been no loom waste at all.



Above: A rigid heddle loom set up to warp directly onto the beam using a peg system.

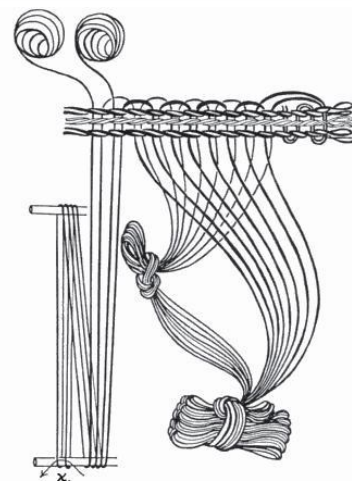


Illustration 1.6 The structure of the Roman Iron Age starting border from Tegel, Norway, and its probable method of preparation.

Historic Comparison: *The process of warping directly using a warping peg, is quite similar to using pegs to prepare a tablet woven border for tablet weaving.*

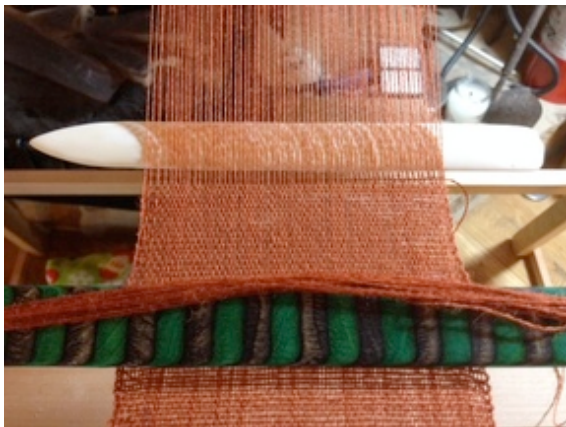
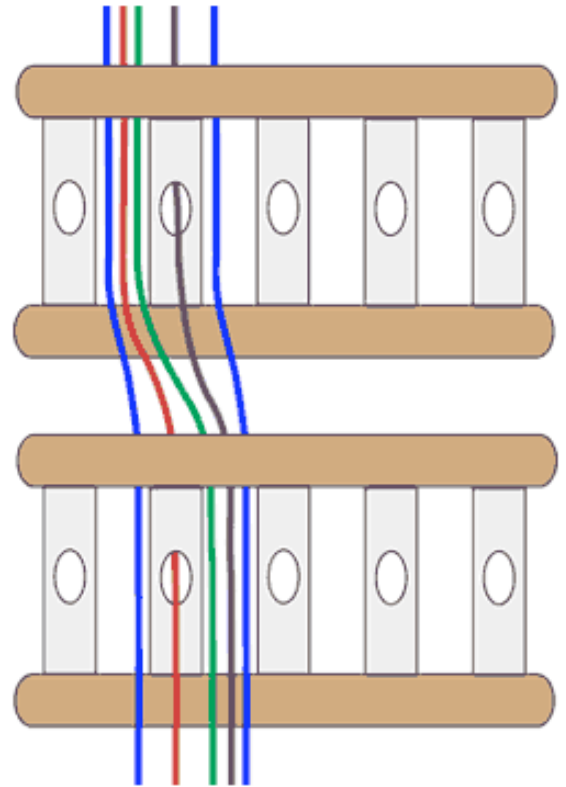
To warp the loom, I have the second heddle in the neutral position, while the first is in the "down" position. I used rubber bands around the wooden top of the heddle that attach it to the heddle support to help keep it upright. Additionally, I used a dowel under the rear heddle to allow it to sit higher and tilt back for easier threading. (I direct warped through the back one, wound onto the beam, then removed all of the yarn from the heddle to thread the heddles.) If your rigid heddle loom actually allows for 2 heddles (Kromski Harp and Ashford rigid heddle looms both do), this process is a bit less complex.



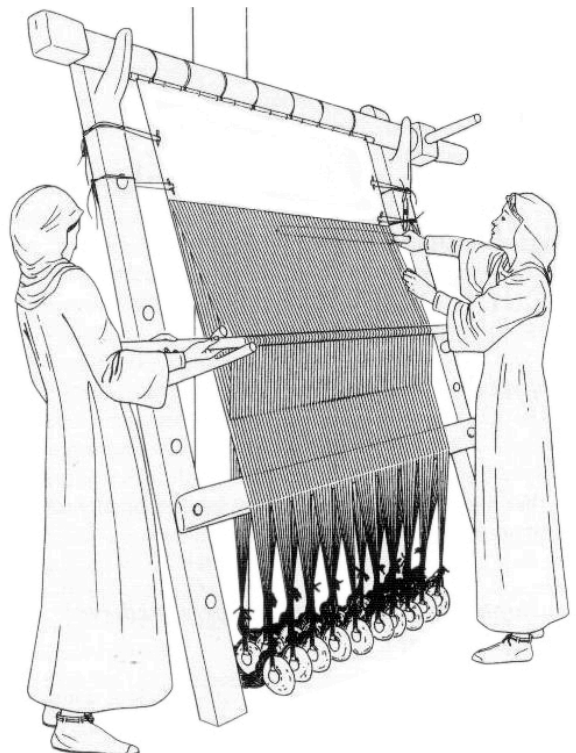
Above: Position for warping a Schacht 10" rigid heddle loom (that lacks support for a second heddle) Below: Schacht Cricket set up for fine tabby at 24 ends per inch. Both heddles are tied together at the top and move as one unit.

Threading the two heddles seems more complex than it actually is. The diagram to the right is the best I have found that shows the proper threading order of the two heddles. The key here is to take it slow and thread carefully. If you end up with a heddle that will not lift independently you have threads crossed between the heddles and you need to check for that error and correct it. If they move independently, but you find you weave a basket weave rather than tabby, you have made an error in your threading order and need to re-sley both reeds.

Right: Jane Patrick's diagram from Weavezine for threading two heddles for fine weave.



Historic Comparison: Using a weaving sword to pack the weft, rather than using the heddles as a beater, is actually quite similar to the historic process of weaving with a sword and produces a similar look to the final cloth. (Image from "Early medieval textile remains from settlements in the Netherlands. An evaluation of textile production.")



The weaving sett (number of threads per inch) for my project was 24, after wet-finishing (lightly washing the item to set the weave) it compressed to approximately 28 (with the weft packed in less densely). The weave is tabby, as that is the weave from all of the original items (and it is the most ideal weave to use on a rigid heddle loom). The majority of the extant pieces had a higher thread count than I managed with my loom (which has a fixed sett), but one was as low as 28-33 threads per inch, which is in the range of the 28 that I managed in the warp. My weft is much less dense at 16-18 per inch despite my beating hard. I believe that this too was a limitation of the loom. It seems that I can get a tighter beat if I am using a loom with more distance between my shed and the weaving.

Historic Process Thoughts: *If the extant items were indeed woven on a very small frame loom or something similar to the Oseberg loom, it is possible that the open weave is merely a result of a natural limitation of the loom. It is more difficult to pack in weft tightly when the beams of the loom are close together. Further, if the yarn was wound on the "beams" and looped again (or twice again) to maintain spacing, that would also space out the warp a bit further than a reed or even some headers for war-weighted weaving. It also allows enough extra yarn to form the fringes that have the looped ends intact, as seen in the extant wool examples.*

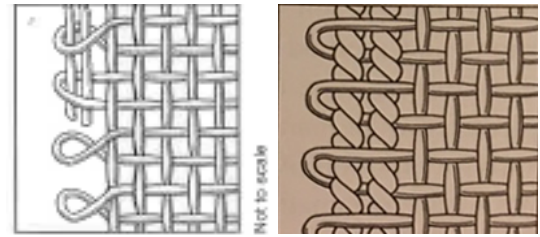


Because the threads are fine and prone to abrasion, I opted to not use the rigid heddle as a beater. Instead I used a weaving sword to pack the weft as would have been done on any loom in period. When compared to the swatches of fabric I have produced on my small warp weighted loom, the end results, with their slight irregularities, have a more period feel that those created on a modern floor loom with more tightly controlled spacing of threads.

Despite the slight differences in yarn size and weaving sett, I think this item still has the proper feel as an airy, open weave wool and I am happy with the results.

This scarf on display is actually the second one I have woven. The first had too much draw-in during my weaving (over an inch on a 20 inch-long item). The second vastly improved on this. I helped to somewhat control my draw-in by marking my stick shuttle/weaving sword so that I could regularly check the width of the piece and make adjustments as needed.

I used a double selvedge as was seen in one of the extant pieces. In one example, two strands of two plied yarn was used, so I plied the same singles I used for weaving to use for that purpose. (Images from *Viking Age Headcoverings from Dublin* by Elizabeth Wincott Heckett, 97.)



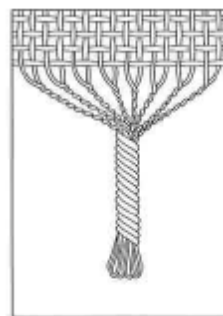
Loops at selvedge range between 2mm and 4mm and still show remains of double warp ends inside; some kinked at the end, some simple loops.

The fringes in the extant scarves range from 20mm to 100mm. I opted to cut mine at 70mm initially assuming that I can trim them down later if I so choose. It is interesting to note that the extant items often have fringed ends that end in loops, presumably because they were woven on a small two beam vertical loom like that found at Oseberg. When the weaving was complete, the piece could be slipped off of the beam leaving the warp ends as intact loops. My chosen method of weaving did not allow for this so I opted to twist my cut fringe, then wet-finish and cut to desired length.

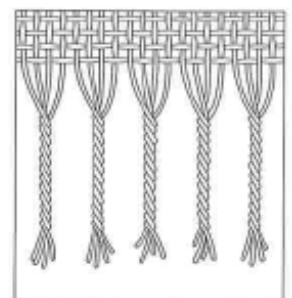
I choose to separate out 8 warp threads for each fringe. I Z twisted those in groups of two and then two the resulting 4 strands and S cabled them. I did tie a knot in the bottom of each until the piece was properly wet-finished just to hold the twist as I set it. This method of plying small groups and then cabling them was evident in the extant pieces. On my first scarf I tested out doing some of the fringes by twisting entirely with my fingers, but it was hard on my wrist so I switched to a LeClerc fringe twister to finish them. There is no difference at all in the fringes I twisted in my fingers and those for which I used the contraption.



(Fringe images from *Viking Age Headcoverings from Dublin* by Elizabeth Wincott Heckett.)



Then sets of pairs S-cabled.



Tassels: 4 warp ends S-plied, 50mm long.

What I Learned & Next Steps

Lessons Learned

- Fine threads can indeed be woven on a rigid heddle loom. The maximum thread count before washing, for tabby weave, is, however 24 or 25 threads per inch.
- Using a weaving sword to pack the weft results in less abrasion on the yarn than does pressing it in place with the heddle. Further, this method is a more period technique.
- Using a bit of painters tape to mark the width on my shuttle allowed me to better gauge and control draw-in of the weaving.
- Experimentation with this project has given me better understanding of how these items might have been produced in period.



Above: Blue painters tape on the shuttle allow me to regularly check, and adjust, the width of the textile as needed.

Next Steps

- To continue exploring these head coverings, and their manufacture in period I will attempt to weave several more items in fine wool tabby. These will include:
 - A veil of 20/1 wool yarn (which is more fine than wool used for this item) to be crafted on my table loom
 - A small cap/hood to be woven on an Oseberg style loom that will be made from a converted TV tray stand (as this will be a better representation of how items were crafted in period)
 - A handspun scarf or cap, also woven on the more period style loom
- Continue my series of blog articles about rigid heddle weaving for SCA projects:
<http://awanderingelf.weebly.com/blog-my-journey/category/rigid-heddle>



Above: Stand to be converted into an Oseberg style loom

Decision Making Matrix

Construction Detail	In Period	For Project	Reason for Differences	Citation
Details				
Thread count	<p>Dublin: an average of 42 threads per inch in the warp and 33 in the weft. The low ends of the range are 28 warp and 23 in the weft</p> <p>Kaupang: aprox. 48X32 threads per inch</p>	28X16-18 threads per inch	Size of yarn used is heavier than the extant items	<p>Heckett, 9-43</p> <p>Blindheim, 257</p>
Fringe method of construction	Fringe ends have loops at the ends as it was removed from the loom without cutting the warp yarn	Fringe ends are cut to length	Difference in looms used. The two beam Oseberg style loom allows you to weave with no loom waste and the loops are from where the yarn was passed around the beam. A modern loom system makes it necessary to cut the project off of the loom.	Heckett, 97
Weaving Yarn	Z spun wool yarn between .09mm and .29mm diameter	Mill end wool yarn that was gifted to me; approximately .32mm in diameter	At the time of this project, this was the only fine wool single that I had available to me.	Heckett, 9-43
Selvage Yarn	Double 2-ply selvage yarns	Double 2-ply selvage yarn	Same	Heckett, 97
Color	Colors of extant wool items include dusky red, grey, brown, yellow-brown and black	Sage green	At the time of this project, this was the only fine wool single that I had available to me. The color would have been possible in period using birch leaves or woad and weld used together.	Heckett, 96



Sources Cited

- Blindheim, Charlotte, et. Al. *Kaupang-Funne Bind II*, Universitetets Kulturhistoriske Museer, 1999.
- Brandenburgh, Chrystel R. "Early medieval textile remains from settlements in the Netherlands. An evaluation of textile production," *Journal of Archeology in the Low Countries*, 2009.
- Foulkes, Susan. "Roman Rigid Heddles, A Survey," *Archaeological Textiles Newsletter*, No. 52, 2911.
- Heckett, Elizabeth Wincott. *Viking Age Headcoverings from Dublin* (Royal Irish Academy), 2003.
- Ingstad, Anne Stein. "Two Women's Graves with Textiles from Kaupang," *Universitetets Oldsaksamling 150 år, Jubileumsårbok*, 1979
- Ingstad, Anne Stine. "Textiles from Oseberg, Gokstad and Kaupang", *NESAT 2*, 1988.
- Iverson, Mette. *Mammen: Grav, kunst og samfund I vikingetid*, (Aarhus University), 1991.
- Krag, Anne Hedeager. "Finely Woven Textiles from the Danish Viking Age", *NESAT 9*, 2005.
- Patrick, Jane. "Summer Breeze Scarf" *Weavzine* magazine.
http://www.weavezine.com/summer2008/wz_su08_JanePatrick.php
- "Universitetsmuseenes Fotoportal," 2013. <http://www.unimus.no/foto/>

Additional Resources

- Bender Jørgensen, Lise. *Northern European Textiles until AD 1000*, (Aarhus University Press), 1992
- Bender Jørgensen, Lise. *Prehistoric Scandinavian Textiles*, (Det Kongelige Nordiske oldskriftselskab), 1986.
- Christensen, Arne Emil and Nockert, Margareta. *Osebergfunnet: bind iv, Tekstilene* (Universitetet i Oslo), 2006.
- Heckett, Elizabeth Wincott. "Irish Viking Age Silks and Their Place in Hiberno-Norse Society," *University College Cork*, 2002.
- Ingstad, Anne Stein. "The Textiles in the Oseberg Ship".
<http://forest.gen.nz/Medieval/articles/Oseberg/textiles/TEXTILE.HTM>
- Oye, Ingvild. "Textile Production Equipment." *Kaupang: Things from the Town*, 2011.
- Pritchard, F. "Aspects of the Wool Textiles from Viking Age Dublin." *Archaeological Textiles in Northern Europe*, 1992.
- Skre, Dagfinn. *Things from the Town: Artefacts and Inhabitants in Viking-Age Kaupang* (Aarhus University Press), 2011.
- Skre, Dagfinn. "From Dorestad to Kaupang." *Dorestad in an International Framework*.
- Sorheim, Helge, 'Three Prominent Norwegian Ladies with British Connections', *Acta Archaeologica*, 82, 2011.