I hope that this book may solve some of the problems many tablet weavers meet during their weaving, and I will thank my two daughters Lisbet Lavaud and Birgit Sandermann Justesen for their help during my work.

Gammel Holte, November 2013

The photo on the front page is taken in the Keltenmuseum Hochdorf, where they have reconstructed a chieftain’s grave from about 450AD. The grave was excavated in 1978, and the museum in Hochdorf/Enz was opened in 1991 with the reconstructed grave. Go to www.keltenmuseum.de. The band on the photo is analyzed and reconstructed by Lise Ræder Knudsen, www.tabletweaving.dk.
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Preface

I have always been very interested in tablet weaving, and I have tried several times and stopped again, until 1993 when I participated in a class on tablet weaving and suddenly understood a lot of it. The following year there was a Nordic tablet weaving symposium in Kalmar in Sweden, where I met many people with the same interest and got further inspiration to go on with the tablet weaving. In the course of time I have learned that you can get a lot of aids to get an easier working position. I use a home-maid loom, which I can use for both inkle weaving and tablet weaving.

My interest for tablet weaving grew, but I got more problems. Sometimes you must have a pattern to look at, but I did not understand many of the patterns I saw. With the help of my computer I have succeeded in doing my own patterns in a way that immediately shows how the finished band will look like.

It is fascinating to think, that tablet weaving was known in the prehistoric world in many different places and that the technique is used in several countries even today. At excavations in the Nordic countries as well as in other places in Europe during the last 100-200 years numerous bands have been found, many of them woven in special techniques, which must have required great skill. But the historic subject is so big, that I will not include it here, but instead give some literature references.

From the Nordic countries archaeological finds show, that people have woven with tablets since the Iron Age until the Late Middle Age, but then the technique sank into oblivion, until the German textile researcher Margrethe Lehmann-Filhés about 1900 accidentally heard about the technique in Iceland and later on saw some tablets in the Danish Folk Museum (the present National Museum of Denmark) in Copenhagen. With the researcher’s curiosity and care she succeeded in understanding the tablet weaving principles and making several bands.
In this book I will:

1: describe some tools and aids, which will help to make it easier to weave with the tablets.

2: describe and compare different methods for pattern drawing, which I have met during the time, and tell a little about my own system.

3: describe different tablet weaving techniques and give a few patterns to each of them.

4: give some suggestions to the use of tablet woven bands.
Definitions, tools, and aids

In shaft weaving we have two sets of threads. The warp threads are lifted or lowered with the help of shafts, so a shed is formed, and the weft threads are put through the shed.

Tablet weaving is a simple method to make bands and narrow weavings. The necessary tools are few, but the possibilities for patterns are many. There have been found tablet woven bands from the Bronze Age with very advanced patterns, which have required very great skill.

Here is the warp held between my belt and a clamp on the table.

The only tools you need are the tablets and your hands, and then you need some yarn. The tablets are small plates, which can be triangular, square, hexagonal or perhaps of quite another form. Near the edge, normally in the corners there are made holes. In this book I will mainly tell about square tablets with a hole in each corner. Through each of these holes a thread is drawn, which corresponds to the warp in a shaft loom and when the tablet is raised on the edge there will be a shed between the upper and the lower threads. Every time you turn the tablets, the four threads will twist and the shed will change. When we want to weave a band, we use more tablets beside each other and stretch the warp threads between two posts. The tablets stand parallel with the threads and are turned forwards or backwards due to the pattern. After every turn the weft is put through the shed and when you tighten it, the warp threads will gather and you will see the pattern in the band.

The tablets can be made of wood, horn, bone, leather, cardboard, or whatever you can cut out to squares and give a hole in each corner. The width can vary from 2-3 cm to 8-9 cm and the material must not be too flexible. A fine material for the first test is playing cards, which you cut out into squares with rounded corners and cut a hole in each corner 1 cm from the edge. Most playing cards are 6 cm wide and that is a fine size.
The best yarn to use for the test is not too thin cotton, e.g. knitting yarn or crochet yarn (mercerized cotton). The threads with the tablets must be stretched during the weaving as between a hook in the wall and a belt you wear. It is a little better to use an upturned clamp on the edge of a table as the fixed point. If you sit at the opposite side of the table, the tablets can rest on the top of the table and you can raise your belt higher on your back. That will give a better and less tiring working position. Another possibility is that you purchase a band loom. You can get them in many different forms and sizes.

It may be good enough to make a butterfly for the weft and you can use your fingers as a beater. But it is more comfortable to use a shuttle and the shuttle can be formed as a beater, or you can have a separate beater.

It is very important to keep the tablets in the correct order, when you leave the work; the easiest way is to use one or two safety pins of the sort on which you keep your resting knitting masks. Put the safety pins through the corresponding holes of the tablet in order to fix the work.
Patterns for tablet weaving

Patterns for tablet weaving can be made in a lot of different ways, and I will only mention a few of them here. But there are some few rules, which everybody must agree on:

If you hold a tablet in vertical position in front of you and with one edge towards you, it is S threaded when the thread is entered from the right; the threads are slanted in the same way as the slanted line in an S. During the weaving the threads are stretched, and the tablet will slant to the right like the slanted line in a Z, and we say that the tablet is Z positioned. If you thread a tablet from the left, it is Z threaded and will be S positioned.

\[
\begin{array}{c|c}
S\text{ twisted and } Z\text{ twisted thread} & S\text{ threaded } Z\text{ positioned } Z\text{ threaded } S\text{ positioned} \\
\end{array}
\]

In the same way we talk about S twisted and Z twisted threads. A thread with the twist going from right up towards left is S twisted; it has the same direction as the slanted line in an S. A Z twisted thread has the same twist direction as the slanted line in a Z.

When you turn a Z positioned tablet forwards, its threads will twist in Z direction; when it is turned backwards, the threads will twist in S direction, and vice-versa when the tablet is S positioned.

A tablet weaving consists of a threading draft, which tells us how to thread the tablets, and a pattern draft, after which we turn the tablets. These drafts may look very different, and may be understood in different ways. The problem is that we work three dimensional, and the drafts are made two-dimensional on a flat area (a piece of paper or a computer-screen).

Here you see the most common threading draft, I think. The figures in the upper line show the numbers of the tablets; A, B, C and D are the names of the holes in the tablet, and Z’s and S’s tell us the threading or the position of the tablets. To use this draft you must know, where in the tablets the letters are placed, and whether the S’s and Z’s mean threading direction or how the tablet is positioned.

During the weaving the tablets are turned forwards or backwards after a pattern draft. When the tablets are turned, the threads in a single tablet will twist and gathering the tablets with the weft thread forms the pattern. Behind the tablets the threads will twist in the opposite direction, and after some time the twist may be so tight, that it will bother the weaving. If you then change the turning direction, the twist will loosen again.
Some bands are threaded with threads of different colours, so that the pattern is formed by a number of forward turns followed by a number of backward turns. These bands will never bother the weaver, because there will never be any tight twists. But there are found lots of fine tablet woven bands with very fine patterns which have needed a pattern draft to follow and an individual turning of the tablets. Some of these patterns are found in ancient graves of which some are from the Middle Ages. But nowadays you can also find people throughout the great World weaving very beautiful bands with their tablets.

This band is woven after a band from the Bronze Age, found in Hallstatt in Austria.

Here is a band from the Viking Age found in a chieftain’s grave in Mammen in Jutland. A lot of textile pieces were found in the grave and a reconstruction of the buried chieftain’s clothes can be seen at The National Museum of Denmark in Copenhagen.

Around the World you can still meet people, who weave with tablets and make beautiful patterns. The patterns in this band are from the island Sulawesi in Indonesia. They have made a long band, cut it into shorter pieces, which they have sewn together to a bag. The bag can be seen in the Tropenmuseum in Amsterdam.
Here I will show you a few of the types of pattern drafts you may try to use as templates for tablet weaving. The draft with the dots is the one, which Egon Hansen used in his book – with a little modification. Egon Hansen uses tablets, which have one edge coloured blue and the opposite edge coloured red. In the pattern draft there are figures under the dots whose tablets must be turned forwards, and the rest of the tablets must be turned backwards. The big dots show, which colour a tablet has on the upper edge after a turn. The small dots are added to show, which colour the tablet has on its front edge.

The pattern draft with grey and white squares shows clearly, which way the tablets are to be turned, white for forwards turning and grey for backwards turning. It is easy to use as weaving template, but it is impossible to see, how the pattern will appear.

The two coloured pattern drafts look like each other, and it is very easy to see, which technique has been used, and how the finished band will look. In one of them every square has a coloured slanted line. The slanted line tells us, which way the threads in the tablet must twist, and its colour shows us, which colour will be seen on the upper side of the band. I think it is the quickest way to sketch out a pattern.

The last pattern draft is my own, which I have sketched out during several years. It also uses slanted lines, but there are two in every square. There are also some curved lines in many places to tell, that the turning direction has to be changed. I will tell a little more about this in a later chapter.
The first sample band

How does tablet weaving work?

All threads in one tablet must be threaded from the same side of the tablet; otherwise you cannot turn it. An S threaded tablet is Z positioned, and when you turn it forward, its threads will get Z twisted. In the same way a Z threaded (S positioned) tablet will get S twisted threads by a forward turn. If you arrange the tablets S Z S Z S Z and so on, and turn them in the same direction at every turn, the band will look like a knitted band.

It is possible to change the position of a tablet during the weaving by revolving it about a vertical or horizontal axis, and in that way change the twist direction. So it is possible to turn all the tablets in the same direction all the way during the weaving; but it may be difficult if you make a mistake and have to go backwards in the weaving.

Let us look at a pattern for a single tablet in a band. The lowest lonely square shows us how to thread the tablet. It has two green threads in the bottom holes and two red threads in the top holes. The slanted line under the square shows us, that the tablet is Z positioned; it has the same direction as the slanted line in a Z. The right side of the tablet is the front, and it turns forward to the right. The tablet turns backwards to the left, towards the weaver. Over the lonely square there is a column with 8 squares that show the turns of the tablet. The line to the left of the first square shows us, that the tablet has to be turned forward, and it is red, because a red thread is moving between the top holes of the tablet and is seen in the band. In the next turn a green thread will show on the band. Now follow two turns, and the tablet is back in its start position with the two red threads on top. The next four slanted lines show, that the tablet must turn backwards, and they will be seen as red, green, green and red in the band.

When I weave after a pattern draft I use a homemade ruler, which I have cut out from a plastic folder and given a distinct Indian ink line along one edge. I put the pattern into another plastic folder together with a steel plate and fasten the ruler over the pattern with one or two magnets. It is easy to move the ruler, and I can see the row I am going to weave, as well as the rows under and over it.
**A pattern with single slanted lines**

I have made a little pattern with 6 pattern tablets and 2 border tablets. Try to weave the little band after the pattern, and see what happens, if you try to change the number of turns in each direction. Remember that the red and yellow slashes show the twisting of the threads during the weaving. If all the tablets were positioned in the same way, the two halves had to be turned in each direction. So here it is most practical to thread them opposite; then all the tablets can be turned in the same direction, forwards or backwards.

You need 8 tablets, some yarn – I prefer not too thin cotton, two clamps, a pencil or a stick of the same thickness as a pencil, a safety pin for knitting use and four round toothpicks. The two border tablets get 4 threads of the same colour. They may be turned the same way during all the weaving. If the twists behind the tablets get too tight, you must change the turning direction and turn the tablets backwards, and the twists will loosen. Or you can revolve the tablets so they get the opposite position, and the twist will loosen, when you go on with the forward turning.

The tablets do not need to have letters or figures in the corners during the weaving. But when you are threading the tablets, you must know which thread threading through which hole, and for that you need letters. In this pattern draft the figures are numbers of the tablets; the letters to the left correspond with the letters in the drawn tablet, and the Z’s and S’s tell us how the tablets are threaded. The drawn tablet shows us the position of the letters, and to the right you see a Z positioned (S threaded) and an S positioned (Z threaded) tablet.

Beneath the pattern to the right I have made my special threading pattern. The holes have got the colour of the threads, and the slanted lines under the tablets show their positioning. In the left side the tablets are S positioned and in the right side they are Z positioned. We know, that when a tablet is Z positioned and turned forwards its threads will twist in Z direction, and when it is turned backwards its threads will twist in S direction, and vice versa for an S positioned tablet. That means that in this pattern you can turn all the pattern tablets together.

Now follow the instruction for “the first sample band” in the next chapter.
Preparing the work

The first band you try to weave must be manageable in length and number of tablets, and the pattern must be simple. I will recommend mercerized cotton yarn, which is smooth and will not get tangled up. For this pattern you need six pattern tablets and two for the borders, and calculate with 1 - 1½ meter for the warp; when you weave with tablets, you must know, that it is impossible to use the last 50 centimeters for weaving. I will suggest you to colour two opposite edges with a light and dark colour respectively; mine are red and black. It may many times be a good help to find the position of the threads during the weaving. Besides the tablets and the yarn you need two clamps, a pencil or a stick of the same thickness, a safety pin of the sort you use to keep your resting knitting masks on, and four round toothpicks.

Here you see some of my aids. On the first photo you see a wooden block with a peg, in which I can fasten the tablet, while I put the threads through its holes. On the next photo you see another wooden block with two thin sticks. The distance between the sticks is the same as the distance between the holes in the tablets. In this block I gather the threaded tablets, so I can keep their order, and on the photo beneath you see the ready threaded tablets held in order with two big safety needles, one of them homemade.

The first tablet is a border tablet; thread it with four threads of the same colour, and the weft thread must have the same colour. Measure out four threads and put them through the holes of a tablet; tie the four ends together with two knots, so you get a little loop between them. Put the pencil/stick through the loop, and place the tablet on the table or place it on the block with the sticks. The six pattern tablets must be threaded after one of the two threading drafts – they should give the same result. Place the tablets on top of each other, thread the second border tablet and put it on the top. Finally you stick the safety pins through all the 8 tablets in order to keep the tablets in their correct position.

It is nice to sit at a table, on which the tablets can rest during the weaving. If you have two clamps, you can put them upside down on the edge of the table and tie the pencil to them (look at the photo). Then you take all the threads in your hands and adjust them, until they are in order and evenly stretched. They are now tied together and held stretched by a solid cord, which reach further than to the opposite edge of the table and is given a weight. The size of the weight depends on the number of tablets and the warp material. The warp must be stretched, but also flexible when you turn the tablets.
There are many other ways in which to arrange your tablet weaving. You can have the warp stretched between a belt around your waist and a hook in the wall. Or you can have a vertical warp fastened in the ceiling or somewhere else. In this case the band is on the top, and you beat upwards, and if there is a weight on the warp threads from each tablet, the twists will open by themselves.

In many illustrations from the Middle Ages we see a woman sitting at a board with two posts in between which the warp with the tablets is stretched. Such a tablet weaving loom has been found in the Norwegian Oseberg ship from the Viking Age.

Here is the loom I have made together with my husband. I can remove the posts and fasten them in other places, and thus weave inkle bands by using the same loom.

Now the weaving can start

Arrange the eight tablets after the threading draft beneath the pattern draft. Do not forget, that the black slanted lines show the position of the tablets, and the coloured slanted lines in the pattern draft show, how the threads from a tablet are twisted. Make a butterfly from your weft yarn or wrap it around a piece of cardboard or a shuttle, if you have one.
Starting and ending a tablet woven band

Put a toothpick into the shed and turn the tablets one quarter turn forwards; put the next toothpick into the second shed and turn one quarter turn forwards. Press the sticks a little together, and go on with the last two toothpicks in the same way. Now you are back at the start position and can continue with the yarn. Put the weft into the shed, but leave about 12-13 cm of the end and turn the tablets a quarter turn forwards; put in the warp from one side and the end of the yarn from the other side and leave a little loop in both sides. Turn the tablets, beat carefully and pull the threads until the loops just disappear at the edge of the band. At this moment it is important to fix the width of the band. The weft must be as little visible as possible, and the woven band must be beaten so much as possible, so it has a solid structure. The free end of the weft is put into the shed 3-4 times, and then you go on with the weft alone. The weaving rhythm is: put in the weft thread, leave a little loop, turn the tablets, beat and pull the thread, until the loop just disappears. Put in the next weft - and so on.

When you want to end the band, it is a good idea to lock it as you did in the start. But you must use a different method. Take a thin thread and fold it double; the double thread must be longer than the width of the band. Stick the double thread into the shed together with the weft thread and keep the loops at the same side of the band. Turn the tablets, beat and draw the weft thread as usually, but keep the loop of the thin thread open. Do the same with two other thin threads. At last you stick only the weft thread through the shed, turn the tablets, beat and cut the thread 15 – 20 cm from the band. Put the end of the thread through the nearest loop and draw the weft thread through the band by help of the thin thread. Do this two times more, and the band is locked.
My way of pattern drawing

When drawing my tablet weaving patterns I use a computer program: “Stitch Crafts Gold”, which is meant for cross stitching, but it can be used for many different purposes.

In the drawing underneath I imagine, that the weaving goes from left to right on the paper. The weaver is sitting in the left side, and the unwoven warp disappears out to the right. A forwards turn goes to the right – clockwise, and a backwards turn goes to the left – counterclockwise. If you look down from the weaver’s place on the tablets, they are slanting in the same way as the slanted line in a Z; they are Z positioned, and that means that they are S threaded. You have to play attention to this, when you read a pattern draft, because some weavers mention the threading, and others think of the position of the tablets.

Nearly all my tablets are coloured red on one edge and black (or blue) on the opposite edge; that is a great help, making it easy to find the different threads during the weaving. If I have two light and two dark threads I put the light ones at the red edge and the dark ones at the black edge.

The patterns, I use for weaving, are positioned in the same way as the band I am weaving. When I start the drawing of a new pattern, I begin in the bottom of the paper and draw all the tablets – unless it is a very wide band. Here we have eight pattern tablets with two light and two dark threads, the light ones at the red edge and the dark ones at the black edge. In both sides there is a border tablet with four dark threads; they are turned forwards all the time, until the twist behind the tablets get too tight. Then the tablets are turned backwards, and the twists will be neutralized. After this we do not any more think of the borders.
The eight pattern tablets have two blue threads at the blue edges and two yellow threads at the red edges. All eight tablets are Z positioned, which is shown by the black lines underneath; they are slanted the same way as the slanted line in a Z. Over the squares I have shown, which colour the threads in the top holes have. Square number one has a yellow thread to the left - the back, and a blue one to the right – in front. Square number 2 has two blue threads, number 3 has a blue thread to the left and a yellow one in front, and number 4 has two yellow threads.

Now we look at the first row in the pattern. Every square has two lines, and they all slant to the right. That means that all the tablets have to be turned forwards away from the weaver. After a forwards turn the first tablet has two yellow threads in top and a yellow thread over a blue one in front. By looking at the first square in row one we read, that the tablet was turned forwards, and that the colours at the front edge now must be a yellow over a blue one. We can control the colours of the threads all the way up through the pattern. All the tablets must be turned forwards in the rows one to six. In row 7 we meet a new symbol, a curved line that is open to the left. This symbol tells us, that the tablet must change its turning direction. It is the thread in a top hole, which stay on the top and float, until it is tied in the next turn. All the tablets must be turned backwards (towards the weaver) in row 7. In the rows 8, 9 and 10 the lines in the squares tell us, that the tablets must be turned backwards; the lines slant to the left. In row 11 we meet a curved line, which is open to the right; so we must turn the tablets forwards (away from the weaver).

In my pattern drafts the black lines under the squares tell us the position of the tablets, and the coloured lines inside the squares tell us how to turn the tablets. When I weave, I mainly have the tablets positioned in the same way. It has the great advantage that it is rather easy to weave back, when you find an error.

Now let us see, what happens during the weaving.
In the drawing to the left we turn the same way all the time. The threads have their fixed places in the tablet, and they will come to the top in a fixed order: blue and yellow, two yellow, yellow and blue, two blue and so on, until the turning direction is changed. The red lines are drawn round a thread as it is seen in the band, and the green lines show the place of the weft.

If we want to change the turning direction with the blue thread floating, there are two possibilities, as you see in the next drawings. They will look a little different from each other in the band.

Here is a part of a striped band with narrow stripes to the left and a little broader stripes to the right.

On the last pattern drawings there are shorter and longer floats, which we find e.g. in the four coloured Snartemo band found in Norway. On the little photo you can see the blue floats over two and four weft threads.
Two dark two light – to and fro

Now we will thread eight tablets with two dark threads beside each other and two light threads in the opposite holes and see, what a lot of patterns we can do with this threading. But start with this little pattern by turning forwards and backwards in the right order.

Arrange the tablets after the threading draft under the pattern draft. Perhaps it is a little difficult to read it, so here it is.

The first three quarter turns go backwards, then follow four forwards and four backwards, which is written 4F-4B. The figures look like each other; I have put an arrow, where you must change the direction, and in some places you must turn 3F-4B and then 4F-4B again. That gives pattern variations up through the band. Follow the pattern or play with the possibilities. Do not forget to lock the band both when you start a pattern and stop it, so you eventually can cut the patterns from each other if you want.

If we leave the principle of turning all the tablets together and instead turn them individually or in small groups, we will get a lot of possibilities for patterns, as we will see in the next chapters.
TABLET WEAVING - Two dark two light – to and fro
Two dark two light – double faced identically positioned

In this band the patterns are identical on both sides, but the colours have changed places. The threading is very easy; the border tablets each have four threads of one colour, and they are positioned opposite to each other. The pattern tablets have two dark and two light threads, and one of the colours must be the same as the border colour. All the tablets are Z positioned with the same colour in the front holes. Start with turning all the tablets in the same direction several times to get some cross stripes. If you want to get a plain-coloured start, you turn 2F-2B, when you have two identically coloured threads in vertical position. If you want to weave a pattern, you split up the tablets into blocks which you turn different ways. But don’t forget that you must only change the turning direction when the colours are in a vertical position. Be aware that the twists of the two colours all the time are opposite to each other in the same row. Follow the pattern and get a feeling of what happens, and also try to make your own small patterns.

Many tablet weavers prefer to split up the tablets and gather them into two blocks with different turning direction and turn a whole block at a time.
TABLET WEAVING - Two dark two light – double faced identically positioned
Tablet woven band from Nepal

Here is a tablet woven band, which I bought on a trekking tour in Nepal. It is 156 cm long and ca 4.5 cm wide. It was made with 48 tablets: 10 tablets for each of the centre stripes and 9 border tablets in each side. The border tablets are positioned so, that they all must be turned in the same direction, until the twists are too tight. Then the tablets are turned in the opposite direction, and the twist will loosen and at last twist again.

The long band is a sort of belt, and the long cross striped centre part has been hidden under other clothes. The easiest way to weave it is to revolve every other tablet about its axis, so they all are opposite positioned and can be turned together. If you study the photos, you will see that the border tablets and the pattern tablets do not change turning direction at the same time.

Here is the threading draft; don’t forget, that there are 10 tablets in each of the center stripes.
Two dark two light – double faced with opposite positioned tablets

We still use the threading with two dark and two light threads, but in this pattern we will use opposite positioned tablets and turn them all together: Two forwards – two backwards. I will suggest that you position all the pattern tablets in the same way e.g. Z positioned; then you can turn them individually, when you are weaving a pattern. That is the easiest way for me to weave patterns. But there are other possibilities; you can revolve the tablets, so they change their position. Try it, and find out, which method is best for you.

Remember: When Z positioned tablets are turned forwards, the threads will get Z twisted, and when they are turned backwards, the threads will get S twisted. For S positioned tablets it is vice versa. You can still use the patterns with the slanted lines, when you remember, that the threads must get the same twist as the slant of the lines in the pattern.

By the way it is a technique, which gives the possibility to do a lot of exciting patterns – the more tablets the more variation in the pattern. We know many very fine patterns made this way from Persia but also from several European countries.

Here are two bookmarks, the patterns of which you can try, when you dare use some more tablets. Here are 42 pattern tablets; for every ten tablets I draw a vertical line through the pattern, and correspondingly the edge of the tenth tablet has a dotted colour. In this way it is easier to keep order in the weaving. In this technique the slanted pattern lines go one to the side and two up, so they are rather steep. I have made the pattern draft for one of the bookmarks in a different way. Every little rectangle means one tablet and two wefts.
TABLET WEAVING - Two dark two light – double faced with opposite positioned tablets
An easy way to draw patterns for this technique is shown here. Every rectangle symbolizes one tablet and two turns with weft in between.
Two dark two light – diagonal weaving

This pattern is also called Egyptian diagonals; but I prefer simply to call it diagonal weaving, as it is used in many other places around the world. The shown setting up of pattern will give diagonal stripes, as long as you turn the tablets in the same direction, and the band will twist like a spiral. When you change the turning direction regularly this will be no problem. The three black and white bands in the picture have some shadows, which show that they are not quite flat. The lowest one is a belt, which has been finished with a piece of skin, joined with glue and dried under pressure.

You can continue with the sample band for diagonal weaving on the same warp with 8 pattern tablets and 2 border tablets. The threading pattern is a little different; so here it is.

Diagonal patterns can of course have another combination of colours as for example three threads of one colour and one of another colour.

Or you could thread the tablets light-dark-light-dark as it has been done in the red band here. It will give very fine and often different patterns on the two sides.

You can also use three different colours and with four different colours for example yellow, green, red, and blue you can make a copy of a very fine band from the Viking Age like the one, which was found in Snartemo in Norway. The band to the left is made in the same technique as the Snartemo band.
The area between the two red lines shows the pattern repeat in a band from Kaukola in Finland.
1-2-1-2-diagonal

If the threads with the same colour are threaded into diagonally opposite holes, it is possible to make small very fine patterns. Sometime it is the same pattern with reversed colours, and sometimes both sides have very fine but different patterns. If you have warp left in the tablets after the sample bands, you can change two of the threads and try these three patterns, or perhaps make your own patterns.
Two dark two light – twill weaving

Twill or 3/1 Broken Twill is the last tablet weaving technique, we will try on this warp with two light and two dark threads in the tablets, and I think it is the technique, which has given most trouble to inexperienced tablet weavers. But at the same time it is one of the techniques, which gives the possibilities to make extra fine patterns. The slanted twill-line appears, when you after every weft turn 2F-2B all the way through the width of the band. After the next weft you move the 2F-2B turn one tablet to the side; that means that in row number two you turn 1B-2F-1B, in row number three 2B-2F, and in row number four 1F-2B-1F. You go on in this way as long as you want a ground weave in one colour. If you want the twill line to slant into the opposite direction, you move the 2F-2B rhythm to the other side. If you want to change the twill direction through one row, the threads from every second tablet will get a little longer floats than the others.

When the twill line changes direction about a vertical axis, there are no longer floats, as you can see in the drawing.

Here is a little pattern draft, which I hope can explain a bit more of the twill weaving’s mystery. At the bottom in the start the twill lines in the left half slant to the left and in the right half they slant to the right. After the pattern figure the twill direction in the left half has changed about a horizontal axis, and all the twill lines slant to the same side; the pattern uses 15 tablets. When you turn a tablet four quarter turns in the same direction, the colour will change automatically. In the same way the colour will change, when you turn 2F-1B-1F (or 2B-1F-1B), as you can see inside the little pattern.

In the band shown here I have reproduced some of the figures from the woollen Mammen band. The twill has the same direction throughout the band.
Shown here is a pattern for the sample band in twill. If your 2 dark 2 light warp is long enough, you can use it for this pattern too.
**False spiral**

Here is a pattern, in which I have tried to keep one twill direction all the way throughout the weaving, but in some places I have been obliged to give a tablet an extra turn to get the changing of the colour correct.

I have called it “a false spiral” as the figure never twists like a spiral, but two corners of a square have been folded over the center line. In this way I can show, how the tablets are turned, when two pattern bands cross each other.

In this pattern a vertical line is drawn in the mid-column. Correspondingly the mid-tablet has red and black spotted edges.
In the first chapters we have worked with tablets, which were threaded through all four holes in the corners; but of course you can use only three or two of the holes, and in that way get other possibilities for patterns. The simplest way is to use a rather thick weft thread with a colour, which differs from that of the warp. The weft-thread will be visible in every place, where the warp-thread is missing and form the pattern, and that must have given the technique the name “Missed-Hole”. In the recent years many weavers use the name “Vacant-Hole”, and it may be a little more correct. Here I will only talk about the bands, where the tablets have two threads for the ground-weave in diagonally opposite holes, one in another colour and perhaps a little thicker for the pattern, and the fourth hole is empty.

When a tablet is turned in the same direction, the pattern thread will be visible on the top side at every fourth turn – with three turns in between. If you arrange the tablets in the right way, you can get diagonal pattern lines in the band with the two ground threads in between, and the weft thread can faintly be seen between them. If you want more than three turns between the pattern lines, you must turn the tablets forwards and backwards one or more times and in this way get a broader ground between the lines. When the tablets are turned to and fro one or more times with the empty hole in the top, the ground threads will go up and down in turn and make shifting sheds; over a bigger area it will look like a tabby ground, and the pattern threads will be unbound on the back side of the band.

It is always a great help to have a pattern to weave after, and in this technique I prefer to use grey squares for backwards turning and white squares for forward turns. You can draw the pattern on ordinary squared paper. Horizontally the number of squares corresponds to the number of pattern tablets, and vertically the number of squares corresponds to the number of wefts; usually the borders are not drawn in the pattern drafts. Start with the pattern lines, and do not forget, that there must be an odd number of squares between them. Lines
from the lower left corner up towards the upper right corner show a forwards turn, and the lines from the lower right corner up towards the upper left corner show a backwards turn. All squares with a backwards line must be coloured grey, and two squares over and two squares under them must have a grey colour too. But be careful where the lines change direction. Normally there must be two turns in the same direction; but when they change direction, the grey and white squares meet horizontally or vertically along a line over two or three squares. Look at the two small pattern drafts; it is the same draft, but in one of them the red spots show, where the pattern thread is positioned after a turn.

Try to weave the band on the photo as a sample. There are 24 pattern tablets. You can make your own decision concerning the border tablets; the threads in the outermost tablet must have the same colour as the ground threads, but it may have a fine effect to put one or two tablets with threads of the same colour as the pattern threads inside the first border tablet. The border tablets have four threads and are turned in the same direction just like the former sample bands.

Here is the threading draft for the band. The two yellow dots are the ground threads positioned diagonally opposite. The red dot is the pattern thread, and the empty hole is a black circle. The four tablets must be repeated 5 times to get a total of 24 pattern tablets.
On this page you see some photos, which show some effects of the “Missed-Hole” technique.

The three yellow bands are woven on the same warp. The first to the left is a common diagonal band with three yellow and one black warp thread. If you remove the yellow thread diagonally opposite to the black thread, you will get a band woven in missed-hole technique. If you put back the black thread and remove the yellow thread from the opposite hole and use a weft with a third colour and perhaps a little thicker, the weft will show as the pattern in the band as you see in the photo to the right.

Underneath here we have four photos, the front and the back side of two different patterns. Notice that it is possible to weave two different ground weaves. The pattern to the left has a fine ground made by weaving one row 1F1B alternating with one row 1B1F. As you see on the next photo, the pattern thread floats on the back side. If you weave 2 rows with 2F2B alternating with 2 rows with 2B2F, the ground will get a little more rough, and the warp will be bound on the reverse side. You can also let the warp float on the upper side as a part of the pattern, as you see on the first photo.
Two threads in diagonally opposite corners – Latvian patterns

In Latvia tablet woven bands with only two threads per tablet have been found, and the technique dates back to the Bronze Ages. The Latvian bands are mostly woollen and have very beautiful colours, and to get more colours in a band many of them are brocaded.

The tablets are threaded with two differently coloured threads into diagonally opposite holes. They are turned as usual with a quarter turn between the wefts, and because there only are two threads in the tablets, they are very lively and will stand on the corner, so it may be very difficult to keep their order. I put a long knitting needle through one of the lower holes after every turn, and that works.

I will propose that you weave a sample band with 8 tablets, which may give a lot of small patterns. The black band on the photo is woven after the pattern on the next page. The border tablets get four threads as usual. It may be an advantage to turn them only every second time; then you turn the tablet in the side from where you enter the weft thread.

Every two squares in the pattern belong together and are turned in the same way two times with a weft after every turn. I will try to explain the pattern draft with this little “mini draft”:

The threading draft consists of 4 tablets which are repeated a number of times. Look at the left column. Number two tablet is threaded with a red thread in the upper back hole; when it is turned a quarter turn backwards, the thread is visible on the top of the band, but only to the middle of the column. Number one tablet in the same column has the red thread in the lower back hole, and at the first turn the thread will go to the upper back hole. At the next turn the thread will show on the top of the band as a continuation of the thread from tablet number one. The pattern consists of slanted lines and diamonds with a dot inside. Try to weave after the pattern draft on the next page, and try to draw your own patterns.
TABLET WEAVING - Two threads in diagonally opposite corners – Latvian patterns
Here are two patterns which are fine for belts. In the photo you see a gleam of red which is an effect from the red weft thread. I think it is fine. The other pattern has a red border thread and some brocading with a red thread in the pattern. In a brocaded band an extra thread is drawn from side to side on the top of the band to build a pattern. It has been used in many Latvian bands.
Two threads in holes in two neighbour edges – Pebble-weave

The technique of pebble weaving is rather new, and it differs somewhat from common tablet weaving. It is the Dutch weaver Marijke van Epen, who has evolved the technique after having visited South America and seen the many beautiful textiles, which the people there had made on their backstrap looms. It is a ribbed weaving, and changing the two colours makes the pattern; that means that the bands are double faced with reversed patterns on the two sides. There are only two threads per tablet, and they are threaded through holes in the middle of two neighbour edges. The tablets get a quarter turn forwards or backwards, and sometimes they idle. Here is a little pattern for explanation.

We read the pattern from bottom to top. Every square corresponds to a tablet. In the bottom row all the squares are white; that means that the light threads are in the top. In row number two the first square is dark, then follow two lights, two dark all the way to the other side. The dark squares mean that the dark threads must be turned upwards and the light threads are tied. The third row is white, and the light threads all turn up. In the fourth the light and dark squares have changed places compared with row number two, and the other group of light threads are tied. The ground of the band looks like a net of light threads with small dark dots. When you want to do a pattern, you connect the dark squares by drawing dark squares in the white rows. The pattern will mostly consist of slanted lines, but it is possible to make patterns with horizontal lines, as you see in the pattern draft to the right. In two white rows a number of dark squares form a line, and in the dark row between them three dark squares are omitted to form a white row.

Here is a photo, which tells you, why this technique is called pebble weave; the threads are turned as pairs and form a net in which you see the other colour as small spots. The reverse side has the same pattern, but the colours are opposite. In the Latvian technique you can weave the same patterns, but the reverse side looks different. Look at the photo in the chapter about Latvian patterns.
Try to weave a band with 16 pattern tablets after the following pattern draft. The tablet must have holes in the middle of two edges beside each other. The shed is not so big; so perhaps it is an advantage to use tablets which are 8 cm. and it may be a good idea to give the two edges respectively a dark and a light colour. Do not forget that it is important to give the band the correct width at the start. It may be difficult to correct it later on. The border tablets have two threads and are turned in the same way as the pattern tablets. There may be two or four border tablets; but you can also have more so you can weave a little pattern in the border, as I have done in the green band, you see on the photo.

The 16 tablets must be threaded in the same way, and they must be positioned in the same direction all the way throughout the weaving. If the tablets are coloured on the two edges with the threads it is very easy to follow the pattern. If you do a wrong turn the tablet will spring upwards, and you will see the mistake at once. Start the weaving with some stripes and try to get the correct width immediately.
The circles correspond to the pattern row in the top of the previous column.
How can we use the tablet weaving?

There are many possibilities for the use of tablet woven bands. Perhaps we first of all think of belts and small bags; braids on sewn or knitted clothes may look very exciting. I have seen a table cloth with tablet woven bands interwoven into it. I find jewellery attractive, but I am just at the beginning of that project. Small bags, big bags made of several pieces sewn together. The possibilities are boundless, when the imagination works within you.
Books about tablet weaving, websides

Andersen, Paulli: Brikvævning (danish)

Collingwood, Peter: The techniques of Tablet Weaving: The tablet weaver’s bible.

Crockett Candace: Card Weaving.

Van Epen, Marijke: First steps in Tablet Weaving.

Marjke van Epen has made many books about tablet weaving; look at her website!

Hansen, Egon: Brikvævning, historie, teknik, farver, mønster. (Danish and English)

Hendrickson, Linda: Tubular Cardwoven Neckpieces.

Joliet-van den Berg, Marga und Heribert: Brettchenweben: (German).

Joliet-van den Berg, Marga und Heribert: Mit Brettchen gewebt, Bänder, Gürtel, Borten. (German).

Lehmann-Filhés, Margarethe: Om Brickvävning: (A Swedish translation from German).


Michelsen, Lise: Brikvævning, sådan laver du bånd: (Danish).

Spies, Nancy: Ecclesiastical Pomp & Aristocratic Circumstance. (About brocaded bands)

Staudigel, Otfried: Der Zauber des Brettchenwebens: (German and English).

There exist many books about tablet weaving; These are from my own book shelves.

There are also many websites, so many so I will only mention two, which have been very interesting for me to study. They are German: www.flinkhand.de and www.b-oberholz.de.

www.weavershand.com : Here are lots of links to websites with content of interest to tablet weavers and other persons who work with bands and similar things.

“TWIST” means “Tablet Weavers’International Studies & Techniques”, publishes a newspaper about tablet weaving three times a year.
Postscript

The photos on page 14 and on the back of the book show my band loom, which I have constructed and built together with my husband. I can take it apart and assemble it again, so I can use it for both inkle bands and tablet bands. The distance between the two posts is about 70 cm. The start end of the band is fastened to the little beam in the middle of the loom. The threads from every single tablet are passing the edge of the table and given a weight of about 60 g. When the threads get too short, I extend them with another thread, so the weights still hang under the top of the table. We made the box underneath the tablets to give them some support during the weaving. In addition the box gives room to all the things a tablet weaver needs to use.

I hope this book will be useful for many tablet weavers; it is short, if you wish to go into more details you can get much more information about the single techniques as well as the history about tablet weaving on other tablet weavers’ homepages. Visit www.weavershand.com and find them.

I will recommend one more homepage; If you understand German then visit www.gewebte-baender.de, which belongs to Anneliese Bläse. Anneliese Bläse began to tablet weave many years ago and later on, she got so interested in inkle weaving that she has worked with it all her long life. Go to her homepage and read her articles and look at her great gallery.

Wherever I go I bring my tablet weaving with me as on this picture where I am enjoying a nice summer’s afternoon on the terrace.

If you find errors, or if you have any problems, please send an e-mail to me: evase@post.tele.dk