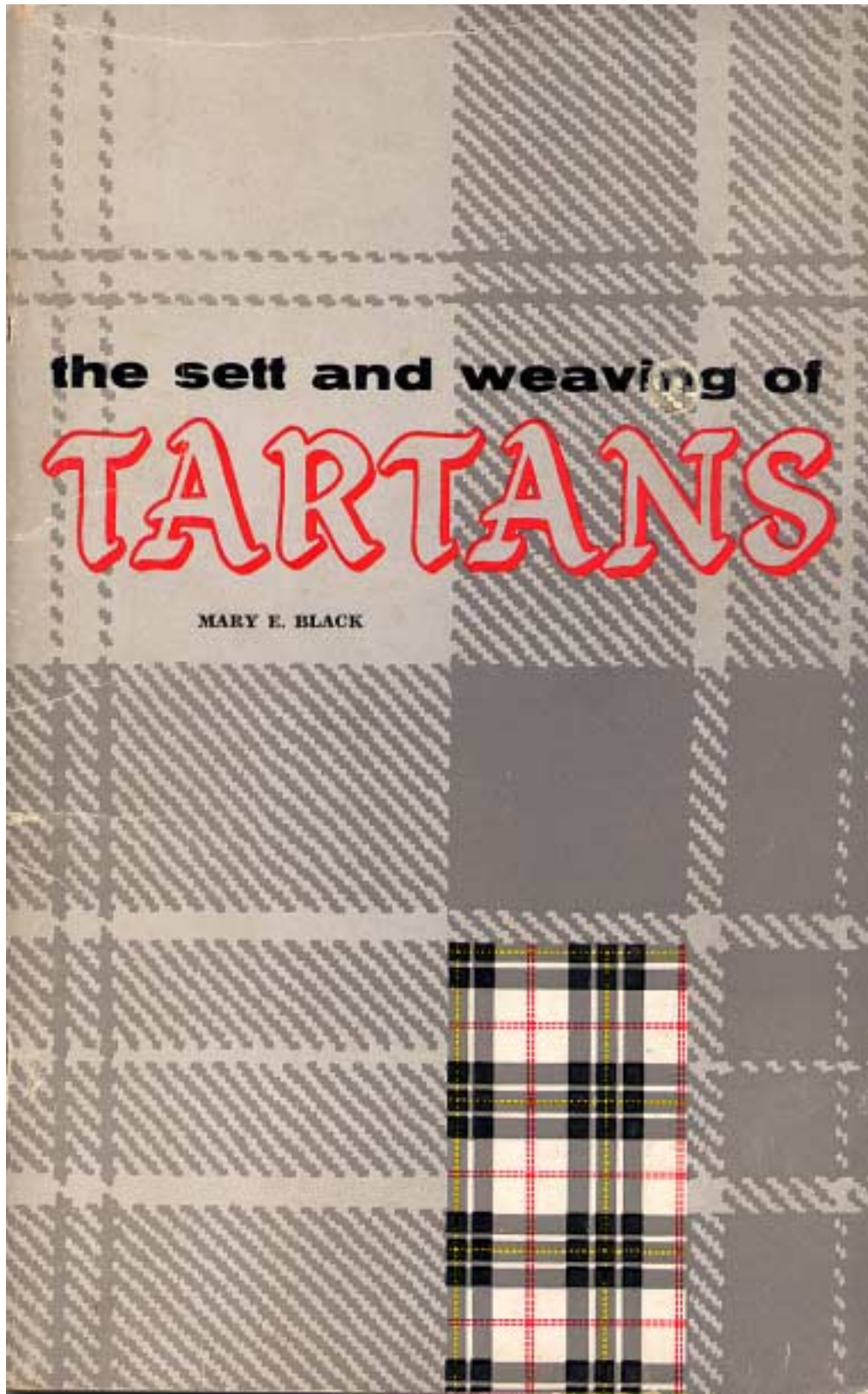


the sett and weaving of

TARTANS

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TARTAN STUDY

by Mary E. Black

This is a study of tartans, with emphasis on the tartan sett and the technique of weaving it rather than on its adaptation to specific uses.

At the beginning it might be well to point out the difference between a plaid and a tartan because a great deal of confusion and misuse of the words exists in the conversation of the layman concerning the two. There is nothing that will arouse the ire of a Scotsman more quickly than to refer to an authentic tartan as a plaid. A plaid is any arrangement of coloured warp stripes woven across with weft threads of the same material in exactly the same order as the warp threads are drawn-in. The threading and treadling should produce either a 50/50 plain or a twill weave, that is one in which there are the same number of weft as warp threads to the inch. The choice and arrangement of the colours may be any the weaver prefers.

On the other hand, the colour arrangement of a tartan must follow the sett as recorded by the clan to which it belongs. There must never be any deviation from the order in which the colours lie, though certain deviations from the number of threads within the stripe are permissible in order to adjust the sett to meet the requirements for which the web is to be used. For example, material for a car robe, if of heavy wool would require a bold design of large blocks, whereas tie material would require miniature blocks. A true tartan must always be woven on a 2/2 twill.

Some historians believe that these bright webs were brought to England and Scotland by the Romans. The first tartans were referred to as district tartans because all those living within the confines of a certain district wore a similar

tartan. As they went about from district to district it was easy to identify their home village by the tartan they wore. When it became necessary for small groups to seek the protection of the larger and stronger groups the clan system was born. The leader, who acted in the capacity of a father to the groups, became known as the chief of the clan. The new members of the clan took the name of the chief and were known as his sons. This is the origin of the prefix "Mac". It is the Gaelic word for "son". Thus we have, for example, MacDonald, son of Donald the Chief.

Although at first all wore the tartan indigenous to the district, other tartans were soon designed to designate different ranks and occupations within the clan which is one reason we find tartans with different colours and setts bearing the same name. The clan Chief and his family had their own tartan, there was another for the members of the clan at large for everyday wear, with usually a light, gay one for special dress occasions. In addition there was the hunting tartan of subdued colours which would blend into the gorse and heather. In some histories reference has been made to a special tartan worn by the stewards who managed the finances of the clan, to the clergy tartan worn by those who administered to the spiritual needs of the clansmen and to the well known shepherds check. The clergy tartan with which we are most familiar is that of the MacPhersons. A literal translation of this name being "son of the parson."

When two large clans joined forces a new tartan was sometimes designed which embodied parts of the tartans of each clan.

The clan system was dissolved in 1745 following Bonnie Prince Charlie's futile attempt to regain the Scottish throne and it was not until several generations later that it became permissible to wear the tartan again. Queen Victoria en-

couraged its use during her summer vacations at Balmoral Castle in the Highlands of Scotland.

Its popularity has increased over the years and it can always be relied upon to hold its own among the high styles of the year.

Originally the wool used in tartans was dyed with vegetable dyes. Weavers who have experimented with natural dyes can appreciate the difficulties encountered in trying to reproduce an exact shade of red, green or blue. Though there remain only a few fragments of the early tartans, which is not strange as it was a matter of death if any tartans were found in the homes during the "forty-fives," the early tartans must have been much more beautiful than the present day commercially dyed ones, many of which are, unfortunately, rather garish. It is perhaps for this reason that the better Scottish firms currently are producing tartans in the soft ancient colourings. It is possible to secure swatches of these tartans upon request, but as they are expensive it is best to limit the request to one or two. The Lily Mills threads have the soft tones of the ancient colours and lend themselves well to the weaving of tartan webs.

If there are many colour changes, and most tartans have many, the warps are tedious to wind. If a warping reel is used it is necessary to cut the thread, and tie on the new colour at each colour change. Sometimes this occurs with every other thread and sometimes every fourth thread. While warping on a peg type warping board is, in general, somewhat slower than on a reel, it is quicker for tartan warps because the thread need not be cut at each colour change but can be left hanging down from the board ready to be picked up when needed. It is suggested, however, with this method, that the cross be placed at the opposite end of the warping board from which the threads are started and that the chaining of

the warp begin at the end where the colour changes are made. Counting must be accurate. All blocks have an even number of threads which means that the knots for the colour changes must all be made at the same end. When weaving, the weft colour changes are all made at the same selvedge. Great care must be taken in counting the threads because an error of even one or two threads in a stripe will throw the sett off and the result will be incorrect.

The words "set" and "sett" should not be confused. Sett refers to the number of warp ends in each colour stripe for the particular tartan being woven while set refers to the number of warp ends per inch of a fabric.

True tartans are always threaded on the 1, 2, 3, 4 twill and treadled with the 2 - 2 twill treadling, i.e. harnesses 1 and 2; 2 and 3; 3 and 4; 4 and 1, treadled in succession throughout. All blocks must be squared with the same number of weft threads as there are warp threads and the twill diagonal must lie at a 45 degree angle. Unless beating is kept uniform the 45 degree angle line will be wavy instead of clear cut.

Tartan weavers are born, not made, and it takes a bit of doing for most of us to achieve a well woven tartan until we have had considerable practice. The eye should be trained to watch the diagonal until it becomes intuitive to know when it deviates from the correct angle. There may be an inclination to beat too loosely at first, then in order to get the required number of threads into the space left, the beating becomes too hard and the result is anything but pleasing. Count the weft shots as they are entered making a final check before changing the colour for the new block. It is easiest to count the weft threads where they lie over a contrasting warp colour.

It is not well to state that a tartan should be beaten

with either a hard or light beat because the use to which the web is to be put governs this. It is quite obvious that material for a kilt, which needs to be firm, almost to the point of stiffness, would be sleyed and beaten quite differently from material for a girl's suit though the two are woven of the same wool. As with all types of weaving the sleying and beating is governed entirely by the use intended for the finished web.

What happens to a tartan sett when it is poorly beaten is shown herewith



*correct beating
45 degree angle*

*uneven beating
...note wavy diagonal*

*not squared
poor beating*

*fairly even beating —
but not squared*

Results of poor beating

Even though the selvedge of most tartan webs is concealed in the garment seams the weaver should take pride in achieving as perfect an edge as possible. The question is often asked should the weft thread be cut and turned in when the change to a different colour is made. This depends entirely on what is being woven and the amount which will be woven before the colour is picked up again. In general it can be stated that for material which will be sewn into a garment it is permissible, and sensible, to carry the colours along

the selvedge, though if the block is over an inch square there will be no saving of thread and the long skip is apt to catch and pull out the threads as the material is handled. Some weavers turn in the end of the weft at the beginning and end of each colour but those who weave yardages for sale, when it is necessary to conserve both time and material, clip their weft threads about $\frac{1}{2}$ or $\frac{3}{4}$ of an inch beyond the selvedge. All ends must be neatly turned in on neck and head scarves, car rugs, bed blankets, baby carriage robes, place mats, towels, etc. Hems are never turned up on kilts so it is a requirement that one selvedge must be perfect. Tartan setts always have an even number of threads in each square so all colour changes occur on the same side of the web. The rule which applies to all twill weaving with regard to the edge threads applies here as well. If the first thread of the 1, 2, 3, 4 twill sequence is threaded on harness one on the right and the last thread on the left through harness 4, as the weaver faces the loom, treadles one and two should be depressed (on a counter balanced loom) and the shuttle thrown in from the left side. If this routine is followed there will not be any difficulty with edge threads failing to fall into place. This routine will bring all colour changes at the left selvedge. If a different threading sequence is used, or if the weaver prefers he can reverse the treadling sequence and bring the colour changes at the right selvedge. The point to remember is that once the routine is established it must be followed throughout with all the threads starting and ending at the same selvedge.

The finish of a tartan web depends entirely on the use to which it is to be put. Wool webs should be steam pressed with care being taken not to stretch the web. Pat, rather than stroke the material with the iron.

Plain and mercerized cottons should also be steam pressed. Lily colours are fast so there need be no worry about washing in the usual manner when the article becomes soiled.

SHEPHERDS CHECK



Shepherds Check treadled in plain weave

The sett of the most simple tartan, the Shepherds Check, is one of the most controversial among students of the tartan.

The question has always been - how many threads in each square, four, six or eight, and was it originally woven as twill or plain weave?

As we cannot speak with authority on either of these points we have chosen to illustrate a four thread check tread-

ling it in both plain (1 and 3 and 2 and 4) and twill (1 and 2; 2 and 3; 3 and 4; 4 and 1) in alternating succession.

Material: Art. 114 - Lily Mercerized Cotton, size 5,
1 - 2 oz. tube Blue 476

Art. 114 - Lily Mercerized Cotton, size 5,
1 - 2 oz. tube White 984

Sley: 20 threads per inch, double sley in a ten dent reed.

Warp: Length 40 inches.

Warp Sett: 4 threads white
4 threads blue

Wound in alternating succession until desired number of threads are wound. Be generous in the length of warp wound as this problem is an excellent one for practice preparatory to weaving tartans. As scales are to a musician so are checks to a weaver. Constant practice of check weaving will establish rhythm, an even beat and a good web.

Use of finished material: Suitable for place mats, summer bags, bureau covers, unlined summer sports jacket, pillow covers and many other articles.

Treadle: bottom section - 1½ inches in blue - 1 and 3 and
2 and 4
centre section - 3 inches in check - 1 and 3 and
2 and 4
alternating 4 threads white
4 threads blue
repeat for desired length.
top section - 1½ inches in white

Note the loops along the left selvedge where the threads have been carried from one block to the other. As pointed out previously this method would be used only for material where the selvedge would be concealed in a seam. Otherwise the ends should be cut and turned in.

SHEPHERDS CHECK



Shepherds Check in twill

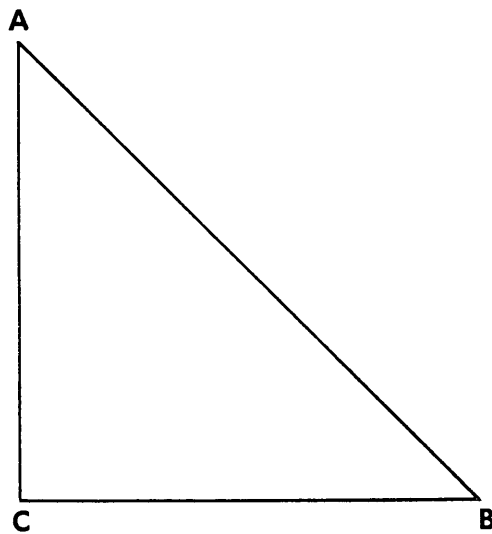
A close study of the selvages will reveal that every fourth thread lies in identical order forming a regular pattern.

Warp, weft and sley same as for Shepherds Check in plain weave.

This sample is treadled twill instead of plain weave. If the threading ends on harness four on the left, treadle har-

nesses 1 and 2 together and insert the shuttle from the left, this will insure a good selvedge.

It is here that we gain our first experience with the 45 degree angle. In order to measure the diagonal a guide is necessary. Cut a piece of light cardboard or heavy paper with a 45 degree angle - i.e.



To measure the diagonal of the weaving place the base (C & B) of the guide along the weft threads and follow along the line of twill A to B, if correctly woven the twill will follow this line. If the woven angle is too low it will disappear under the guide; this means the beating is too hard and it will require more than the allotted number of threads to square the square. On the other hand, if the line veers from the A B line to the right at A then the beating has not been hard enough and the square will not have as many threads in the weft as in the warp stripe.

To the uninitiated the tartan sett is a puzzle, it does not seem to start or end anywhere. There are many books with splendid colour plates showing the various tartans but none, with the exception of Stewarts' *, attempts to assist the handweaver in reproducing the authentic tartan setts. While Stewart does give the basic number of threads for each sett the manner of presentation still leaves the beginner in doubt as to where to start and where to end. To help the beginner clarify his thoughts all tartan setts used in this study have been broken down into blocks and are threaded and treadled throughout following this block system.

In studying the tartan books to find setts which would lead the beginner from the simple two block designs to the more difficult three and four block and to the use of different materials, the Menzies (pronounced Mengies) seemed to offer the greater possibilities. Tartans of other clans have been used but each choice has been to illustrate some special point. Technique, rather than designing and weaving samples for some specific purpose has been stressed. It will not be difficult, once the weaver comes to thoroughly understand the technique and the materials to arrange them for various practical purposes.

* Stewart, Donald Calder - The Setts of the Scottish Tartans

MENZIES



Menzies, red and white sett

For the first attempt at tartan weaving a simple two colour sett and coarse thread, which will stand several “take-outs” and “reweaves” should be used.

Material: Art. 414 - Lily Carpet Warp, size 4/8, 1/2 lb. tube
Red 1327

Art. 414 - Lily Carpet Warp, size 4/8, 1/2 lb. tube
White 845

Sley: 18 dents per inch or double sley in 9 dent reed. Wherever possible double sley in a coarse reed rather than single sley in a fine. It is easier on materials and eyesight.

Warp Length: 2 yards long to allow for loom waste, experimentation and practice.

Warp Sett:

Block A	2 red	Block B	24 white
	4 white		
	12 red		
	8 white		
	6 red		
	8 white		
	72 red		
	8 white		
	6 red		
	8 white		
	12 red		
	4 white		
	2 red		

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Threading order of blocks: B A B - 200 threads

This threading resulted in a web set $11\frac{1}{8}$ inches wide in the reed which wove in to $9\frac{5}{8}$ inches. If a full size place mat had been desired it would have been necessary to add a sufficient number of threads from the A block at both the beginning and end of the above sett to obtain this wider width.

On the right the sett would then read:-

2 red
4 white
12 red
8 white
6 red

and on the left:-

6 red
8 white
12 red
4 white
2 red

or whatever number of threads was required. It is well to maintain some semblance of design and refrain from breaking off in the centre of a stripe, better to run a few threads over or under the requirement than to distort the stripe.

Threading: 1, 2, 3, 4 simple twill threading.

Treadling: 2/2 twill, i.e. harnesses 1 and 2; 2 and 3; 3 and 4; 4 and 1 repeated and repeated throughout the length of the web.

The above threading and treadling is used for all the samples so will not be repeated again in the text.

In treadling, the order of the colour in the weft follows exactly the order in which the warp thread colours are drawn-in.

To prevent confusion, until the process of weaving tartan becomes second nature, stick a large headed pin in the square being woven. As soon as the square has been squared up with the required number of threads move the pin over to the next square to the left, and so on. It is well to follow the squares

up along the diagonal; in this way it is possible to tell at a glance the exact spot in the web that is being woven. One word of caution here however, sometimes the tartan is set up with a half or quarter block at the sides. It is correct to start the weaving exactly as drawn-in but care must be taken, after the half or quarter block is woven, to weave only full blocks until the end of the warp is reached, then end with the half or quarter block to match the beginning. The weaver should be quite sure to establish in his own mind which colour stripes form the outside boundaries of the different blocks. These can be established from the threading chart or sett. Keep in mind that Blocks A and B are repeated in order, i.e. A. B. A. B. A. etc.

Two place mats were woven with fringe allowance between, but upon removal from the loom they seemed a bit long for their width. However, since they had served their original purpose of giving initial training in beating and practice in following the sett of the tartan, they were put into use, after weaving napkins to match.

NAPKINS



Napkin with one half of block A

To weave napkins to match the place mats, proceed as follows:-

Material: Art. 214 - Lily Mercerized Cotton, size 20/3,
1 - 2 oz. tube Red 95

Art. 214 - Lily Mercerized Cotton, size 20/3,
1 - 2 oz. tube White

Sley: 30 threads per inch.



Napkin with white weft

Napkin with red weft

Warp Length: 2 yard warp will weave 4 napkins $7\frac{1}{2}$ x $7\frac{1}{2}$ inches and allow for loom waste, practice and samples.

As it was desirable to have a plain, or a plain with a border napkin, rather than an all tartan one, only part of the sett was used.

Warp Sett:

36 red
8 white
6 red
8 white
12 red
4 white
2 red

76 threads for tartan border, which is one half of block A.

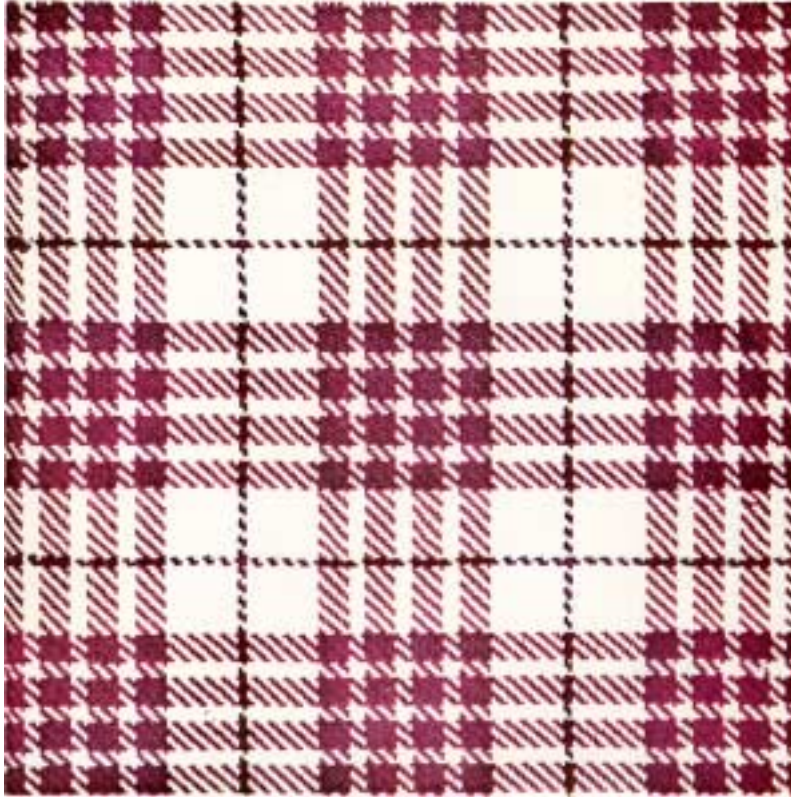
200 threads white for plain part of napkin.

Treadling: Napkin with one-half block A border.

2/2 twill treadling. Weave $\frac{3}{4}$ inch plain weave white for hem. Weave the half A block once then continue rest of napkin in white ending with $\frac{3}{4}$ inch plain weave for hem.

Two other napkins were woven, one with white weft in plain weave, the other with red weft in plain weave. These were $7\frac{3}{4}$ x $11\frac{3}{8}$ when finished, hemmed and steamed pressed, and were folded with the border at the bottom. The one woven in white was much more pleasing than the other as the crossing of the white warp over the red weft threads gave a pinkish cast. Pink is one colour which is not found in authentic tartans and should be avoided.

BUCHANAN



Buchanan tartan showing overcheck in black

Although the Buchanan illustrated here is not one of the more popular tartans it does have a nicely balanced design and illustrates the over check which, though it appears in many tartans, is not always as plainly seen as it is here. The over check threads, which usually appear in white, yellow or red, do not always show up in small samples but are very evident in the large webs. They show up very plainly in "pattern pleated" kilts and skirts. There is much to be learned about

tartan design and pleating and how it is arrived at but it is too involved to be included in an article of this length. The serious tartan student should refer to the many excellent books on the subject to be found in the public libraries of the larger cities.

Material: Art. 714 - Lily Three Strand, size 5,
1 - 2 oz. tube Tuscan Wine 108

Art. 714 - Lily Three Strand, size 5,
1 - 2 oz. tube Black 2

Art. 714 - Lily Three Strand, size 5,
1 - 2 oz. tube White 1

Sley: 24 threads per inch, double in a 12 dent reed.

Warp Length: 40 inches long included loom waste.

Warp Sett: 208 threads wound as follows:-

Block A - 18 white	Block B - 8 crimson
2 black	4 white
18 white	8 crimson
	4 white
	8 crimson
	4 white
	8 crimson

The arrangement of the blocks for the sample woven, suitable for a small purse, was as follows: Blocks B. A. B. A. B. Size of sample after steam pressing - $10\frac{3}{4}$ x $7\frac{3}{4}$ inches.

For a place mat thread the blocks: A. B. A. B. A. B. A.

For yardage calculate the number of threads needed for the desired width and divide by the number of threads required for the total of the A and B blocks. The result probably will not equal the total number of threads needed but the nec-

essary adjustment can be made by using a half or quarter block on the last repeat or by weaving a wider or narrower web. Where the material is to be cut this will not matter. In this sample the colour changes have been made at the right selvedge.

Lily Art. 714, size 5, set at 24 to the inch weaves up easily into a firm bodied material suitable for place mats, bags, tailored purses, pillow covers, upholstery, summer jackets and many other practical uses.

If a jacket or other garment is to be cut from a wide web it is well to stitch around the edges of all pieces, as soon as they are cut, to prevent ravelling. Extra material should be allowed if the garment is to be seamed down the centre of the back because the design of the two pieces should match perfectly. The design should also match in the front.

A certain amount of draw-in is inevitable with all hand-woven material so it is advisable to add two extra threads at each selvedge to offset this, otherwise the edge blocks will be rectangular instead of square. This can be seen in photograph.

MENZIES No. 2



Menzies sett showing use of two shades of one color

With this sample we return again to the Menzies setts. Here we find a seldom used tartan and one that is rather rare in that it uses two shades of red, a clear bright red and a crimson. Navy and azure or light and dark greens are used together in many tartans, but it is unusual to find two shades of red together. This is a gay, clear tartan suitable for upholstery, or draperies, in a boys' room or den. It is cheerful

and can be used to good advantage to bring light into a dark room. Though the design is large it is attractive for summer dresses or skirts in fine material.

Material: Art. 714 - Lily Three Strand, size 10/3,
1 - 2 oz. tube White 1

Art. 714 - Lily Three Strand, size 10/3,
1 - 2 oz. tube Red 95

Art. 714 - Lily Three Strand, size 10/3,
1 - 2 oz. tube Tuscan Wine 108

Warp: Length wound 40 inches.

Warp: Number of threads 384.

Sley: 24 threads per inch, double sley in 12 dent reed.

Sett:	Block A -	48 white	Block B -	10 crimson
		6 red		6 red
		4 white		2 crimson
		2 red		2 red
		8 white		2 crimson
		2 red		40 red
		4 white		4 white
		6 red		40 red
		48 white		2 crimson
		—		2 red
		128		2 crimson
				6 red
				10 crimson
				—
				128

Arrangement of Blocks: A. B. A. for a total of 384 threads. When woven the web was 14½ inches wide and 25 inches long. The blocks were treadled in the following order: A. B. A. B. A.

MENZIES No. 3



Ancient Menzies

In direct contrast to the very attractive Menzies sett used in Menzies No. 2 is another Menzies, perhaps the oldest Menzies sett of which we have any record. It is seldom used, which is not surprising, as the design areas are too similar in size and colouring; it lacks contrast and the white over check appears much too frequently making the whole web "too busy." It does not pleat up attractively.

However there are advantages in weaving a tartan with many small blocks, chief among them being the experience gained in following the sett and keeping the correct diagonal while squaring up the small blocks.

Material: Art. 114 - Lily Mercerized Pearl Cotton, size 5,
1 - 2 oz. tube Blue 476

Art. 114 - Lily Mercerized Pearl Cotton, size 5,
1 - 2 oz. tube Green 459

Art. 114 - Lily Mercerized Pearl Cotton, size 5,
2 - 2 oz. tubes White 984

Art. 114 - Lily Mercerized Pearl Cotton, size 5,
2 - 2 oz. tubes Scarlet 440

Warp: length wound 40 inches.

Warp: number of threads wound 282.

Sley: 20 threads per inch. Double sley in 10 dent reed.

The Lily mercerized cotton, set at 20 to the inch is easy to weave and produces a material suitable for place mats, upholstery, draperies for den or sun room, pillow covers, summer purses and bags.

Sett:	Block A -	10 green	Block B -	2 white
		10 red		4 azure
		10 green		10 red
		—		4 azure
		30 threads		2 white
				—
				22 threads

Arrangement of blocks - B. A. B. A. B. A. B. A. B. A. B.
Size of finished sample - steam pressed - $12\frac{3}{4}$ x 25 inches.

MACLEOD



MacLeod dress tartan woven with Lily wool

The Dress MacLeod, one of the most popular of all tartans, has been chosen for the first wool sample.

Its design and colouring are both pleasing.

The Clan MacLeod has throughout the years of recorded clan history maintained its leadership which today rests in

the hands of Dame Flora MacLeod who resides in the Clan castle on the Isle of Skye, Scotland.

The general directions which apply to all tartan weaves plus those which apply to wool weaving are combined when weaving wool tartans.

Originally all tartans were woven of wool simply because cottons or linens were not available and also because woolen garments were needed for warmth in the rather cool, moist climate of the Scottish Highlands and the Isles off the coast. Aside from the colourful kilts the tartan material was used for blankets, and draperies to keep out the cold. In Robert Louis Stevenson's "Kidnapped", David Balfour, the hero of the story, speaks of the "plaids upon the wall (which) dwindled down and swelled out again, like firelight shadows on the roof". The word plaid is used here to describe the length of cloth which the Scotsman wears folded across his shoulders in the daytime and sleeps under, on the moors, at night. To this he has given the affectionate name of plaidie, a word which perhaps has been responsible for the confusion between plaid and tartan.

Tartan weaving, if undertaken for only one article, or only one sett, is apt to be a bit expensive. For instance, it would be necessary to purchase a 2 oz. skein to obtain the few threads of red needed for the red over check in a MacLeod neck scarf. The ideal method is, of course, to plan a series of scarves each of a different sett and purchase the range of colours found in them. The choice of setts should be such that the colour of the main block is different for each one, this will utilize all the colours to the best advantage.

It is not possible to calculate with any final degree of exactness, until experience has been gained, just how much of each colour will be needed to weave a skirt length. If there is a competent mathematician in the family, turn the problem

over to him, otherwise figure the amount of material needed for the skirt or jacket and order half or one quarter of the total amount in the most prominent colour of the tartan and divide the remainder among the other colours. Experience will help here.

To weave the wool samples used to illustrate this article, 26 ozs. of Lily's weaving wool were ordered. The amount of each colour was as follows:-

Material: Art. 110 - Lily Weaving Wool,
1 - 2 oz. tube Yellow 10

Art. 110 - Lily Weaving Wool,
2 - 2 oz. tubes Dark Blue 30

Art. 110 - Lily Weaving Wool,
2 - 2 oz. tubes Emerald 62

Art. 110 - Lily Weaving Wool,
2 - 2 oz. tubes Black 2

Art. 110 - Lily Weaving Wool,
3 - 2 oz. tubes White 1

Art. 110 - Lily Weaving Wool,
3 - 2 oz. tubes Red 95

The combined weight of the finished samples, including loom waste, was approximately 20 ozs. This left a balance of 6 oz. for additional samples, however a careful choice of sett must be made before weaving them as only a few strands of white were left, enough perhaps for an over check in some dark tartan.

It would perhaps be well to mention here that practically all the wool tartan samples were set at 24 threads to the inch, double sley in a 12 dent reed. After experimenting with several sleyings the 24 threads to the inch produced a web suit-

able for winter skirts, jackets and coats. A sleying of 20 to the inch produces a web of suitable weight for neck and head scarves but is much more difficult to weave. Tartan material for garments should be firm in order to keep its press. A well woven, well tailored tartan suit or coat will last for years, in spite of hard wear and frequent cleaning. For a man's kilt the sleying should be even closer than 24 to the inch as the material needs to be very firm. A setting of 28 to the inch, which would require very hard beating in order to square up the squares with the correct number of threads, would produce a suitable weight. It requires from 7 to 15 yards of material for a man's kilt, depending upon the sett used, the type of pleating and the occasion for which the kilt is designed.

The sett for the MacLeod dress tartan sample is as follows:

Block A - 24 yellow	Block B - 16 black
2 red	2 yellow
24 yellow	16 black
—	2 yellow
50 threads	16 black
	—
	52 threads

The arrangement of the blocks in the warp: A. B. A.

Treadle the blocks: A. B. A. B. A. B.

Size of sample after steam pressing $10\frac{5}{8}$ x $5\frac{3}{4}$ inches.

Strive for an even beat. Considerable difference will be noticed between handling the wool and handling the cottons. Refrain from too tight a warp tension and from stretching the wool.

JOHNSTONE



Johnstone tartan, full size basic sett

The Johnstone tartan is attractive in colouring and should appeal to those who prefer a tartan with subdued colouring. The blocks are somewhat large which is one reason why it has been chosen for this particular sample.

If woven and pleated in its basic form the design would be much too large for the average woman or girl to wear successfully. As stated earlier in this study it is quite permissible to reduce the number of threads in the larger squares to obtain a miniature sett. But before doing this it is well to weave the full size basic sett sample so that the proportions can be studied.

Material: Art. 110 - Lily Weaving Wool,
1 - 2 oz. tube Black 2

Art. 110 - Lily Weaving Wool,
1 - 2 oz. tube Yellow 10

Art. 110 - Lily Weaving Wool,
1 - 2 oz. tube Dark Blue 30

Art. 110 - Lily Weaving Wool,
1 - 2 oz. tube Emerald 62

Sley: 24 threads per inch. Double sley in a 12 dent reed.

Warp Length: 40 inches allowing for two samples and loom waste.

Warp Sett:	Block A - 60 green	Block B - 48 blue
	2 black	4 black
	4 green	4 blue
	6 yellow	4 black
	4 green	4 blue
	2 black	4 black
	60 green	48 blue
	—————	—————
	138 threads	116 threads

Order of blocks in warp: A. B.

Order of treadling blocks: A. B.

Size of sample after steam pressing $9\frac{1}{2}$ x $8\frac{3}{4}$ inches.

JOHNSTONE - REDUCED



Johnstone tartan, miniature sett

According to authoritative books on the tartan setts it is not necessary to conform absolutely to the given count of threads in the sett, they can be varied as desired as long as the original proportions are maintained. The size of material used will determine to a great extent the number of threads to be used in each stripe in relationship to the desired size of pattern or design. It must be kept in mind however, when reducing or enlarging a tartan sett design that all warp stripes

must have an even number of threads and that no warp stripe can have less than two threads. Therefore it can be seen that the reduction must take place in the wider warp stripes.

This was done in reducing the Johnstone sett. The reduced Johnstone being set up with the same wool and sleying as the basic sett given in the Johnstone.

The miniature Johnstone sett:

Block A -	30 green	Block B -	24 blue
	2 black		4 black
	4 green		4 blue
	4 yellow		4 black
	4 green		4 blue
	2 black		4 black
	30 green		24 blue
	<hr/>		<hr/>
	76 threads		68 threads

Comparing this miniature sett with the original basic sett we find that the green in Block A has been reduced by half the number of threads and the yellow by two threads. In Block B the only change has been to reduce the blue by half, from 48 to 24 threads.

Order of Blocks in warp: 30 green threads
 Block B
 Block A
 24 blue threads

Size sample after steam pressing - $7\frac{1}{2}$ x $9\frac{3}{4}$ inches.

The design in this sample is not a symmetrical. To arrange it for a neck scarf, wind warp Blocks B. A. B., or visa versa if the blue is desired in the centre of the scarf. For a stole, where the greater width is desired, use the larger basic threading, centering whichever block is desired, and working out on either side toward the edges, ending with a half block on either side if necessary to obtain the desired width.

MACPHERSON



Cluny MacPherson sett arranged for sports scarf

One of the most attractive of the dress tartans is the Cluny MacPherson.

For skirts it can be pleated with either the white or black block on the surface. Either one makes a striking costume when worn with either a black or white twin sweater set, or black jacket.

The arrangement here is for a winter sports scarf, approximately $12\frac{1}{4}$ inches wide by 54 inches long including the fringe.

Material: Art. 110 - Lily Weaving Wool,
2 - 2 oz. tubes White 1

Art. 110 - Lily Weaving Wool,
1 - 2 oz. tube Black 2

Art. 110 - Lily Weaving Wool,
1 - 2 oz. tube Red 95

Art. 110 - Lily Weaving Wool,
1 - 2 oz. tube Yellow 10

Warp Length: $21\frac{1}{4}$ yards - allowed for loom waste and generous sample.

Warp - number of threads: 330

Sley: 24 threads to the inch - double sley in 12 dent reed.

Warp Sett:

Block A - 30 white	Block B - 40 black	Block A - 60 white
2 red	6 white	2 red
6 white	18 black	6 white
2 red	2 yellow	2 red
60 white	18 black	30 white
100	6 white	100
	40 black	
	130	

In the above the A block has been cut from 60 white to 30 at each selvedge to keep the scarf within the desired width.

For a wider head scarf wind the A blocks as follows:

60 white

2 red

6 white

2 red

60 white

The block arrangement for the wider scarf would be:
A. B. A. B. A.

Size of scarf after steam pressing - 50 x $12\frac{3}{8}$ inches
without fringe.

If a darker scarf is desired arrange the blocks: B. A. B.
A. B.

It is optional whether or not the fringe is knotted at the
ends of scarves. However, if they are to be subjected to hard
wear a tied fringe is indicated. Tie about 6 or 8 warp threads
to a knot.

MACKINTOSH



Mackintosh Clan tartan arranged for child's skirt

The MacKintosh clan has given us four very colourful tartans. The sett known as the MacKintosh Clan tartan has been chosen and arranged for a child's heavy winter skirt. It is a versatile tartan in that it will blend equally well with a blue, red or green jacket or sweater. This weight is also suitable for sports shirts and jackets.

For tartan skirts one selvedge is used at the hem, the other at the waist. In setting up the warp, plan enough width to allow for the correct skirt length. If a hem is desired allow for it, otherwise plan to use the selvedge as is done for kilts. Plan also extra width to allow for the belt, and suspenders if the skirt is for a small child. Remember too, the web draws in a bit and also may shrink a bit when steam pressed.

Material: Art. 110 - Lily Weaving Wool,
2 - 2 oz. tubes Red 95

Art. 110 - Lily Weaving Wool,
2 - 2 oz. tubes Emerald 62

Art. 110 - Lily Weaving Wool,
2 - 2 oz. tubes Dark Blue 30

Warp Length: 3 yards.

Warp - number of threads: 384

Sley: 24 per inch, or 20 if lighter weight skirt is desired.

Warp sett: Block A -	6 red	Block B -	24 green
	12 blue		8 red
	48 red		2 blue
	12 blue		8 red
	6 red		24 green
	<hr/>		<hr/>
	84		66

Arrangement of blocks: A. B. A. B. A.

Width set in reed - 16 inches

” woven - 15 inches

Length finished web - 2 yards before steam pressing. Shrank to 1 yard 33½ inches.

STEWART



The Dress Stewart, or Victoria, sett

The Victoria, or as it is more generally known the Dress Stewart is perhaps one of the best known tartans. It is undoubtedly the one which has been most frequently produced, and abused, by commercial weavers. It is included in this tartan study in order that hand weavers may have the authen-

tic sett and also to offer a sett that will utilize many of the odds and ends left over from weaving other tartans. With the exception of the white, comparatively small amounts of the other colours are required.

Materials: as used in other wool tartan samples.

Warp length: 1 yard.

Warp - number of threads: 350

Sley: 20 to the inch - double sley in a 10 dent reed. This sleying produces a much softer material than a 24 to the inch sleying.

Warp Sett:

Block A - 6 white	Block B - 12 black	Block B - cont:
6 azure	2 yellow	16 green
48 white	2 black	2 black
4 red	2 white	2 white
48 white	2 black	2 black
6 azure	16 green	2 yellow
6 white	8 red	12 black
—	2 black	—
124 threads	4 red	102 threads
	2 white	
	4 red	
	2 black	
	8 red	

Arrangement of blocks for sample: A. B. A.

Size of sample after steam pressing - $24\frac{1}{2}$ x $15\frac{3}{8}$ inches.

This proved to be the most difficult of all the samples to weave because of the coarser sleying. The threads were not beaten but were gently pressed back into position by the weight of the beater in order to maintain the correct diagonal and to square the blocks.

DRESS STEWART



Dress Stewart tartan skirt or dress length in Lily cotton

For the benefit of those who live in climates where wool is not worn, a web with the Dress Stewart sett has been arranged in Lily 20/3 cotton for skirts, sports shirts, children's dresses, aprons, smocks and other articles.

It is light in weight and its light, yet gay, colouring

makes it quite suitable for wear in sunny climates. The skirts are pretty with either pressed or unpressed pleats, or just gathered.

Material: Art. 214 - Lily Mercerized Cotton, size 20/3,
6 - 2 oz. tubes White

Art. 214 - Lily Mercerized Cotton, size 20/3,
2 - 2 oz. tubes Black 2

Art. 214 - Lily Mercerized Cotton, size 20/3,
2 - 2 oz. tubes Medium Blue 29

Art. 214 - Lily Mercerized Cotton, size 20/3,
2 - 2 oz. tubes Red 95

Art. 214 - Lily Mercerized Cotton, size 20/3,
2 - 2 oz. tubes Emerald 62

Art. 214 - Lily Mercerized Cotton, size 20/3,
1 - 2 oz. tube Yellow 10

Warp Length: 3½ yards allowed for loom waste and extra sample.

Warp - number of threads: 900

Sley: 30 per inch.

Width set in reed: 30 inches. Width when woven and steam pressed 24 inches.

Warp sett: Block A - same number and order of threads as for Dress Stewart.

Block B - same number and order of threads as for Dress Stewart.

Order of blocks: B. A. B. A. B. A. B.

At the above setting the beating should not be too hard or the blocks will not square.

In this, as in all tartan webs the threads at the left (or right) selvedge, where the colour changes occur, are either carried from square to square or cut off. No effort is made to conceal them.

Planning and winding the striped tartan warps plus practice in careful beating in order to square up the squares and blocks and maintain the 45 degree angle in the weaving of the samples given in this tartan study will have served to help the weaver decide whether or not his interest lies in this field of weaving, the real test coming with the weaving of the Dress Stewart yardage.

For those who wish to continue and learn more of the theory of tartan weaving there are several books listed at the end of the article which will prove helpful.

Remember to strive for the same rhythm in tartan weaving as in other types of weaving. This may seem difficult at first because of the frequent colour changes but after a bit of practice, and care in placing the shuttles in order on the web as they are used, a rhythm will build up.

Here are a few other ideas which will aid in the production of good tartan webs.

Tartan setts are not given in block form in the text books, but a study of the sett together with the figures given in the description of each sett, will soon clarify the problem.

Measure the finished squares and blocks in the centre of the web. One variable that exists in tartan weaving is that the stripes at the reed which are set a given number of threads per inch, draw in as weaving progresses and the woven squares do not measure exactly the same. If the woven square must

be an exact size in inches it will be necessary to do some experimenting with both sleying and material to obtain the desired result. However, this does not concern the average weaver too greatly.

Finish a block, especially if it is a large one, before rolling back the warp, then try to achieve the same tension as before. Weather has a definite effect on both cotton and wool warps, especially at times of a sudden change from a dry to a damp day.

Tartans call for plain, rather than for fancy, tailoring. They are not too attractive cut on the bias and the sheath dress does not look well made of tartan. Remember too, unless very dark tartans are used they will broaden, rather than slim the figure.

Use plain white china with tartan place mats or table cloths; figured or flowered designs are not good.

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Innes, Sir Thomas of Learney - *"The Tartans of the Clans and Families of Scotland."*

Stewart, Donald C. - *"The Setts of the Scottish Tartans."*