

SUBMISSION FROM JAMES D SCARLETT

Tartan Register

I was consulted in the initial stages of the Bill but am indebted to a friend who passed me a cutting from THE TIMES of 7th October.

In finalizing this Bill it will be of the greatest importance that those dealing with it should know something about tartan, especially in the matter of definition, and I enclose a couple of pamphlets that may help with this. Especially it should be borne in mind that the word Tartan has several shades of meaning; originally, it was a type of cloth and did not need a pattern, then it became, successively, a type of cloth with a particular type of pattern woven in, the type of pattern woven into any kind of cloth and, finally, the type of pattern applied to any type of material, textile or otherwise. If these different meanings are not taken into account I can foresee the occurrence of awkward anomalies.

Compiling a register, should the proposal get that far, will be no simple matter. To my knowledge there are two possible bases, one more comprehensive than the other but both derived from the same sources; I have studied the more comprehensive version and found it so seriously flawed and muddled as to be nearly impossible to correct. Under one name - Campbell - which I looked at in detail, 85% of the entries required correction or deletion. With the knowledge that there are about 6000 entries in all, the magnitude of the task becomes clear.

I hold the only two uncorrupted copies of the Tartan Register compiled by the old Scottish Tartans Society, and any rights that may exist regarding their use. They are twenty-five years out of date but are the best possible basis for a new Register and could be made available under suitable conditions.

ENCLOSURES:-

THE TARTAN ARTFORM.

Tartan is a form of abstract art which is governed by strict arithmetical and geometrical rules; the structure of the fabric also has a bearing on the visual impact.

The 'standard' tartan pattern, which is normally expressed as a 'half-sett', comprises a group of stripes, the same in both directions of the cloth, which repeats along and across the web, reversing at each repetition, so that each half-sett is the mirror image of its neighbours.

There are exceptions to these rules, in that the pattern may repeat without reversing, as in the case of the Buchanan tartan, or that the stripes in the weft may differ from those in the warp, but these are uncommon and outside the scope of the present paper.

The unit of tartan pattern, the SETT, is a square, composed of a number of rectangles, square and oblong, arranged symmetrically around a central square. Each of these elements occurs four times, at intervals of ninety degrees, and each is rotated ninety degrees in relation to its fellows. The proportions of the elements are determined by the relative widths of the stripes that form them.

Each stripe in one direction of the cloth crosses every stripe in the other. Where a stripe crosses another of the same colour, the resultant rectangle is of that colour and where stripes of different colours cross an equal mixture of the two results. The plain twill weave which is traditional for tartan produces a diagonal rib in the woven pattern and the two colours thus appear as alternating lines of colour, analogous to pencil shading. A subtle change in appearance according to the direction of viewing gives 'life' to the composition. Historically, tartan was an unbalanced cloth, with the weft up to one third thicker than the warp, so that this effect was enhanced; old tartans often appear more striped than chequered.

No plain colour can appear next to another plain colour and the total number of colours, including mixed shades, increases rapidly out of proportion to the number of base colours, in accordance with the formula $T = (B + 1)B/2$, where B is the number of basic colours and T the total number of colours in the final product¹. Thus, the more stripes to the sett and the more colours used, the more diffuse and 'blurred' the pattern.

Research suggests that the basic colours of aboriginal Highland tartans were red, green of approximately equal 'weight', which gave colour contrast, and dark blue, which supplied 'grey-scale' contrast with both. In less specific terms, this would indicate that any basic tartan type of design should have for its background², a 'high impact' colour and two others, of which one should be the complement to the first and the other a darker and more neutral shade; other colours, introduced to break up the pattern or as accents, should be a matter of taste. It is important that no colour should be so strong as to 'swamp' another; otherwise, the blending of colours at the crossing will be adversely affected.

Notes.

1. Two base colours give a total of three, and seven, the normal maximum, twenty-eight.
 2. Strictly, since the pattern is woven into the cloth, tartan does not have a background colour, but it is convenient and aids explanation if the principal colour is so regarded.
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Tartan: A descriptive specification

Despite attempts to give it some Gaelic meaning, the most probable origin of the word *Tartan* is in the French *Tiretaine* which became the Scots *Tertane*. The Larousse *Nouveau Dictionnaire Encyclopedique*, defines *tiretaine* as “*Nom de plusieurs étoffes anciennes en laine pure ou mélangée*”. Credulity is tested by the assertion that it originated at Tire, in Babylon, but it seems more likely that the name derives from the French verb ‘tirer’ and relates to a woven, rather than knitted, cloth. The cloth woven by the Highlanders, for which we have no technical name, matches well to the general description of *tiretaine*. From observation, it was fine and made from hard-spun wool with a markedly thicker weft than warp¹, and woven in plain (or 2/2) twill which, for a given gauge of yarn, yields a cloth 50% heavier – and hence more weather-proof – than the simple 1/1 weave. A further corruption of the original name led to its being called Tartan but, at this stage, it did not need to have a pattern; well into the third decade of the nineteenth century merchants were ordering ‘plain coloured tartan, without pattern’, from the weavers, William Wilson & Son. Highland cloth was ‘*tiretaine*’ but it had a pattern, so they called it ‘breacan’, which means almost any kind of parti-colour, and gradually the two meanings converged, so that ‘tartan’ came to mean a particular kind of cloth with a particular kind of pattern; to-day, tartan is the pattern and it is applied to anything, not necessarily even a textile.

Tartan is a complex abstract art-form with a strong mathematical undertone, far removed from a simple check with a few lines of contrasting colours scattered over it. It appears in Bhutan, at archaeological sites in mountainous southern China and in Alpine central Europe, and in Scandinavia before reaching the Scottish Highlands where it reached its peak of development and gathered strength to reach out into the Lowlands and the rest of the world. The characteristic tartan pattern is square and comprises a symmetrical arrangement of squares and rectangles around a central square; the warp and weft patterns being the same, each element appears four times, turning ninety degrees at each occurrence². Each weft stripe crosses every warp stripe; therefore, where a stripe crosses another of the same colour a block of plain colour results, whereas where it crosses one of another colour the result is an equal mixture of the two³.

There is an insufficiency of material for safe diagnosis, but it appears probable that the main colours of ‘aboriginal’ Highland tartans were red, green and blue, the two former, lighter and brighter, supplying colour contrast and the latter, dark to very dark, taking care of light and shade. Such specimens as have survived show that precise shades varied according to locality; in particular, where a good black was easily available, dark blue was less used⁴. Specimens from the period immediately before The ’45 indicate that the sett of a typical Highland tartan of the ‘aboriginal’ type would have been red, with broad stripes of green and blue and a leavening of fine lines of the principal or contrasting colours. Examples of these can be seen in the Ross and Mackintosh groups of patterns and in the MacDonald patterns styled ‘of the Isles’ and ‘of Sleat’.

With black and white (or, at any rate, undyed yarn) and the three primary colours used in varying strengths and in shades that depended, to some extent at least, on locality, the Highland dyers were able to produce the colours they needed; it may be supposed that the limited range was forced upon them, but the dyers were highly skilled and those few colours can be blended to make many shades that were not used, so it seems at least arguable that they knew where to stop.

The ‘rules’ for tartan that emerge from the above analysis are:-

- a) The pattern is 'warp as weft' and consists of two half-sets which reverse along and across the web.
- b) There are three main, 'background', colours of which two are bright and complementary and one dark and tending towards neutrality.
- c) One of the bright colours should predominate.
- d) For best effect the cloth should be woven in 2/2 Twill⁵.

The transmutation of meaning from cloth to pattern, and particularly to a pattern denoting identity, allowed many anomalies to creep in and while a pattern conforming to these rules would be a tartan there are many patterns regarded as tartans that do not conform. Simple universal definitions have been attempted, but the final arbiter is the informed human eye. If it looks like tartan, it probably is a tartan.

NOTES.

1. The spinning wheel came late to the Highlands and spinning was, perforce, by the drop-spindle. A standard weight of whorl and a little practice can produce a very fine and consistent yarn, and cheapness and portability, given the availability of a large number of spinners, would have offset the labour-intensiveness of the spindle. There would inevitably, however, have been some inconsistency in the product and the best way to deal with this would have been to use the finest and best yarn for the warp and let the weft take care of any inequalities. I have seen a specimen in which different colours in the weft are of different thickness.

2. The unit of pattern, termed the *Sett*, is composed of two opposed *Half-setts* which repeat, reversing at each repetition, along and across the web, so that each half-sett is the mirror-image of its neighbours in all directions. In a significant proportion of tartans the half-setts do not reverse but join end to end, so that the half-sett becomes, in effect, a whole sett. In such cases, the elements occur only twice each and the 'central' square is in a corner. Rarely, the weft pattern differs from that of the warp on these occasions the strict rules cannot be followed.

3. The twill weave produces a diagonal ribbing in the cloth and the two colours appear as alternate lines and not as 'pepper and salt' as they would in a plain-woven cloth. The number of mixed colours increases rapidly out of proportion to number of 'starter' colours, in accordance with the formula $M = \frac{1}{2}[N^2 - N]$ where M is the number of mixtures and N the number of 'starter' colours. Two 'starter' colours give one mixture and seven, the normal maximum, give twenty-one.

4. Red, blue and green have been recorded as the first colours to appear in all primitive art, so there may be some deep physiological or psychological reason for the predominance of these colours.

5. In theory, there are sound reasons why such a type of pattern-textile should have developed almost automatically in isolated, self-sufficient mountain communities. Such communities are unlikely to possess large dye-vats, and so cannot piece-dye woven cloth; such processes as Batik and tie-dye are unavailable. Even to-day, exact matches of successive dye batches are almost impossible to achieve and so a plain-coloured would be streaked. Stripes are the practical solution, since they use small quantities of a colour at a time and are interspersed with other colours, but the scope is limited, the result is not very exciting and the colours are degraded by a white basis; stripes across both brighten the colours and add many mixtures. From there on it is really only a matter of getting organised; the – now – geometric pattern reduces to a small unit, easier to remember and to follow in a world where little was written down, it is further simplified by being split into two equal halves and, with weft as warp, the weft pattern can be followed from the warp. And then there is the extra density of the twill-woven cloth, a real benefit to mountain people. All of which appears plausible, though no proof is likely to be forthcoming. For an extended explanation, see my Presidential Address to the Inverness Field Club, March 1999.