

6. Masculinities, Colour, Dyeing and the Design of Tweeds 1829–1914

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Introduction

Colour has been a key element within the design of tweeds from the 1830s up until today.

This chapter focuses on interdisciplinary and material culture research into nineteenth-century tweed design, which shows that novel ways of using colour in woollen textile design evolved from the 1830s in Scotland. In that decade, many of what became the key visual characteristics of the ‘family’ of textiles known as tweeds initially developed. The historical and international significance of these colour and design developments is shown by the continued popularity of tweeds within men’s and women’s fashion since the late nineteenth century. This chapter explores the influence of Romanticism, landscape, sport, fashion and gender on the development of the newly colourful Scottish woollen designs for menswear, which by the 1830s had become known as tweeds. It investigates how the significant focus on colour, design, fashionable novelty and high quality in Scottish mill-based tweed manufacturing interconnected with technological changes in dye chemistry between 1858 and 1914.

The term ‘tweed’ is used in this chapter to describe a wide family of woollen cloths that evolved in mainland Scotland from 1829 onwards.¹

1 The origin of the term ‘tweed’ is examined in Fiona Anderson, *Tweed* (London: Bloomsbury Academic, 2017), pp. 7–9. This chapter extends some arguments brought forth in that book and investigates dyeing in the Scottish mill-based tweed

This essay primarily focuses on the centre of that mill-based sector in the Scottish Borders where the colour and design characteristics examined here first emerged. The domestic, handwoven tweed industry that produced Harris Tweed is outside the scope of this chapter because it developed in the later nineteenth century, and the 1930s shift towards the use of artificial dyes in that sector has already been researched by Janet Hunter.² By contrast, the published literature on the history of tweed does not address when synthetic dyes began to be used in the production of these textiles in mainland Scottish mills.³

This chapter is broadly situated within the significantly under-researched fields of wool textiles and design, and textiles and masculinities between 1829 and 1914. It extends the existing literature on artificial dyes, colour and fashion between 1856 and 1914, which has mainly focused on textiles designed for womenswear. That principal focus of research thus far is not surprising, because the new synthetic dyes initially had a more dramatic and widespread impact on silk and cotton fabrics created for the European and American female markets than on wool cloths designed for menswear (extending that field, in this volume Alessandra Ronetti examines the impact of the new sensorium of the aniline dyes on the emerging field of psychology, which often pathologised women).⁴ However, tweeds were originally adopted as

industry for the first time.

- 2 Janet Hunter, *The Islanders and the Orb: The History of the Harris Tweed Industry 1835–1995* (Stornoway, Lewis: Acair Limited, 2001), pp. 27–45.
- 3 Synthetic dyes are not mentioned in E.S. Harrison, *Scottish Woollens* (Edinburgh: The National Association of Scottish Woollen Manufacturers, 1956); T.A. Stillie, 'The Evolution of Pattern Design in the Scottish Woollen Textile Industry in the Nineteenth Century', *Textile History*, 3 (1970), 309–31; Clifford Gulvin, *The Tweedmakers: A History of the Scottish Fancy Woollen Industry 1600–1914* (Newton Abbot: David & Charles, 1973); Kenneth Ponting, 'The Scottish Contribution to Wool Textile Design in the Nineteenth Century', in *Scottish Textile History*, ed. by John Butt (Aberdeen: Aberdeen University Press, 1987), pp. 78–96; Anderson, *Tweed*; E.P. Harrison, *Scottish Estate Tweeds* (Elgin: Johnstons of Elgin, 1995); Janet Rae and Ian Urquhart, *Fabric of Scotland: The Story of Johnstons* (Elgin: Johnstons of Elgin, 2018).
- 4 Regina Lee Blaszczyk, *The Color Revolution* (Cambridge, MA: The MIT Press, 2012), pp. 21–44; Charlotte Nicklas, 'One Essential Thing to Learn is Colour: Harmony, Science and Colour Theory in Mid-Nineteenth-Century Fashion Advice', *Journal of Design History*, 27 (2014), 218–36; Charlotte Nicklas, 'New Words and Fanciful Names: Dyes, Color and Fashion in the Mid-Nineteenth Century', in *Bright Modernity: Color, Commerce and Consumer Culture*, ed. by Regina Lee Blaszczyk and Uwe Spiekermann (Cham, Switzerland: Palgrave MacMillan, 2017), pp. 97–111;

menswear cloths and T. A. Stillie argues that in the latter half of the nineteenth century, Scottish production was ‘almost wholly in gents’ wear, and only a few select companies dealt in ladies wear [...] and this was often through sportswear cloths designed for the gents’ trade’.⁵ Furthermore, Edward S. Harrison’s original account, ‘The Ladies Trade’, confirms that only a small proportion of Scottish mill-woven tweeds were adopted by women before 1919.⁶ Previous research indicates that although tweeds were increasingly popular amongst British middle- and upper-class women from the 1870s, these cloths were still worn predominantly by men. In addition, before 1919, female consumption of tweeds in Britain mainly involved cloths made in Yorkshire, which lie outside the scope of this chapter.⁷ The scant published research on European and American men’s fashion textiles of the nineteenth century has primarily focused on English broadcloths in black, or other dark colours, which were only worn for formal day and evening wear.⁸ Furthermore, the influence of the ideas of the psychologist J. C. Flugel and John Harvey’s *Men in Black* has tended to persist within the literature on colour, fashion and synthetic dyeing in the late nineteenth and early twentieth centuries.⁹ By contrast, this chapter investigates the nuanced use of colour within the Scottish tweeds that were increasingly worn by men within the modern contexts of informal daywear, sport and leisure between 1829 and 1914. It further challenges the lingering acceptance of the Flugellian idea that nineteenth-century textiles for menswear

Alexander Engel, ‘Coloring the World: Marketing German Dyestuffs in the Late Nineteenth and Early Twentieth Centuries’ in *Bright Modernity*, pp. 37–53.

5 Stillie, ‘The Evolution’, pp. 330–31.

6 E.S. Harrison, *Scottish Woollens*, pp. 169–70.

7 *Ibid.*; Lou Taylor, ‘Wool Cloth and Gender: the use of woollen cloth in women’s dress in Britain, 1865–85’ in *Defining Dress: Dress as Object, Meaning and Identity*, ed. by Amy de la Haye and Elizabeth Wilson (Manchester: Manchester University Press, 1999), pp. 30–47 (p. 43); Anderson, *Tweed*, pp. 64–72.

8 Anne Hollander, *Sex and Suits* (New York: Kodansha America Ltd, 1995), pp. 92–3; Laurie Anne Brewer ‘The Material Education of the Dandy’ in *Artist, Rebel, Dandy*, ed. by Kate Irvin and Laurie Anne Brewer (New Haven: Yale University Press, 2013), pp. 105–09. As Dominic Janes argues in this volume, men’s use of bright colours, especially towards the end of the century, came to be associated with ‘aesthetic’ and homosexual tastes.

9 J.C. Flugel, *The Psychology of Clothes* (London: Hogarth Press, 1930), pp. 110–13; John Harvey, *Men in Black* (London: Reaktion Books, 1997); Błaszczyk, *Color Revolution*, p. 84; Nicklas, ‘New Words’, p. 98; Dominique Grisard, ‘Real Men Wear Pink’? A Gender History of Color’, in *Bright Modernity*, pp. 77–96 (p. 80).

exclusively came in 'austere' black, or dark colours that were expressive of singular masculine ideals of middle class sobriety and asceticism.¹⁰

Colour, Design, Fashionable Novelty and Gender in the Scottish Mill-based Tweed Industry 1829–1914

The textile historian Kenneth Ponting argues that design was of pivotal importance to the leading reputation for creating high-quality woollen cloths that Scottish tweed manufacturers had developed by the later nineteenth century. He states:

Several of the manufacturers became well-known names in the trade, maintaining over the years a reputation for quality of manufacture rarely equalled elsewhere. There is no doubt that in all its varied aspects the continual emphasis on design, using the word in its widest sense to include care in the use of raw material, was mainly responsible for this.¹¹

The Scottish tweed trade began to develop into the elite branch of the British wool textile industry in terms of design and quality of manufacture from around 1829. At that time, wool textile producers in Scotland principally used coarse, native wool to make simple blue or grey woollens. The substantial academic interest in the history of tartan has led to the importance of these plain cloths to the Scottish woollen industry being overlooked, apart from by Clifford Gulvin. These basic textiles were either undyed, or coloured with indigo, and the gradual adoption of more sophisticated dyeing techniques was pivotal to the success of the new focus on the novelty trade that developed from 1829 onwards.¹² These early developments towards making the fancy woollens that by the 1830s were called tweeds were prompted by a new fashion for adopting the shepherd's check. This simple, checked pattern derived from shepherd's plaids, which were lengths of cloth made from contrasting light and dark colours of natural, undyed wool. These plaids were commonly adopted by shepherds in the Scottish Borders to protect themselves and young lambs from poor weather. From the late 1820s, the new mode for trousers in the shepherd's check brought this long-

10 Flugel, *The Psychology*, pp. 110–13.

11 Ponting, 'The Scottish Contribution', p. 87.

12 Gulvin, *The Tweedmakers*, pp. 32–71.

established rural product of the Scottish woollen industry into the realm of male urban, fashionable consumption.¹³ By that time, the Romantic movement had swept through Europe, and the literary works of Sir Walter Scott had ‘saturated the British fiction market, outselling all other novels combined’, as Ian Duncan confirms.¹⁴ The tweed manufacturer Adam Cochrane argued in 1864 that Scott indirectly popularised items woven in the shepherd’s check through the significant public impact of his work. His well-known novel *Waverley*, for example, features a ghostly character attired in ‘a grey plaid, such as shepherds wear in the south of Scotland’.¹⁵ The lingering cultural influence of Romantic ideas proved to be pivotal to the development of an approach to design and colouring that became typical of Scottish tweeds. The historical and cultural contexts linked to Romanticism are succinctly captured by Elizabeth Wilson. She states that the

Romantic movement of the late eighteenth century and early nineteenth century was one early response to the advance of science and the ‘dark Satanic mills’ of industrialism. It offered a counter-ideology that spoke against the machine age and yet espoused the intense individualism of the new order. [...] nature began to be idealized just at the time when a new and much more wholly urban society was being created by the industrial revolution.¹⁶

Significantly, this idealisation of nature encouraged the fashionability and significant growth of sporting tourism to Scotland from the early 1830s. Furthermore, it influenced the development of new woollen designs and colourings that were linked to the rural environments in which deer stalking, grouse shooting and salmon fishing were increasingly

13 James Locke, ‘A Few Facts on the Tweed Trade’, *The Border Advertiser*, 18 September 1863, 3; Alexander Craig, ‘Reminiscences of the Tweed Trade (1829–1836) By a Pioneer’, *The Border Advertiser*, 9 December 1874, 2; Hugh Cheape, *Tartan* (Edinburgh: National Museums Scotland, 2006), pp. 7–9.

14 Ian Duncan, *Scott’s Shadow: The Novel in Romantic Edinburgh* (Princeton: Princeton University Press, 2007), Preface, p. xi.

15 Walter Scott, *Waverley* (London: Simpkin and Marshall, 1829 edn), p. 324; Adam Cochrane, ‘Notes on the Scotch Tweed Trade’, *Transactions of the National Association for the Promotion of Social Science* (London: Longman, Roberts and Green, 1864), 792–99 (p. 793).

16 Elizabeth Wilson, *Adorned in Dreams: Fashion and Modernity*, 2nd edn (London: I.B. Tauris, 2003), p. 61.

practised.¹⁷ The intermingling of rural and urban contexts was pivotal to the emergence of the tweed trade, as the woollen merchants who played a key role in its early success were located in London and Edinburgh. James Locke, who had premises in the upmarket London location of 119, Regent Street, was particularly influential in developing the early tweed trade, as confirmed by Alexander Craig in 1875. Craig, who worked for a merchant in Edinburgh, also encouraged the early popularity in the metropolis of these new, fancy wool cloths. These merchants were involved with designing tweeds, and they often interpreted design ideas from male consumers and tailors when placing orders with manufacturers in Scotland.¹⁸ James Locke published his recollections of these early developments in the local newspaper *The Border Advertiser* of 18 September 1863. Following the initial popularity of shepherd's check trousers, continued demand was encouraged by over-dyeing them in shades of blue, green and brown, and by weaving broken checks and larger checks.¹⁹ Furthermore, prompted by the desires of his London gentlemen clients, Locke placed an order with a Scottish Borders manufacturer in the early 1830s for 'tweels' in 'thin granite colours [...] in black and white, brown and white running into lighter and darker mixtures'.²⁰ The term 'mixture' denotes a textile created from dyed wool fibres in a range of shades that are mixed together before they are spun into yarn, which produces appealing colours. These blended yarns were not only produced in Scotland, but they unquestionably became one of the key characteristics of Scottish tweeds. Kenneth Ponting confirms that manufacturers in Scotland created 'mixture colours not known before, heather mixtures, for example', which have an overall purple colour effect.²¹

The business historian Regina Blaszczyk notes that 'in the mid-1850s, French mills introduced lilac and purple textiles tinted with natural dyes', thus confirming that these colours were fashionable in womenswear before William Henry Perkins famously created 'mauveine', the first aniline dye.²² It is notable that nearly two decades earlier a fashion for

17 Alistair Durie, 'Unconscious Benefactors': Grouse-shooting in Scotland, 1780-1914', *The International Journal of the History of Sport*, 15 (1998) 57-73 (pp. 58-59).

18 Craig, 'Reminiscences of the Tweed Trade', p. 2; Alexander Craig, 'The Early Stages of the Tweed Trade', *The Border Advertiser*, 20 October 1875, 2.

19 Locke, 'A Few Facts', p. 3; Cochrane, 'Notes on the Scotch Tweed Trade', p. 793.

20 Locke, 'A Few Facts', p. 3.

21 Ponting, 'The Scottish Contribution', p. 84.

22 Blaszczyk, *Color Revolution*, pp. 21-26.

purple-toned heather mixtures developed initially for use in men's sporting tweeds, as James Locke noted in 1863. He explains how and why the novel and more colourful designs of the later 1830s developed:

When first mixtures were enquired for which should resemble the moors and different shooting grounds, by many gentlemen of the rod and gun, we at this time had nothing of the kind, neither was there any in the market. We [...] wrote to a house in Galashiels [...] but as we anticipated, they replied they had never heard of such a name or article [...] we requested them just to imitate the side of Buckholm Hill which overshadowed them [...] A boy was despatched to fetch home some. [...] Now when a handful of this was "squashed" together it had different shades [...] This proved to be the very thing we wanted and led to the introduction of a variety of colours before unknown. These first obtained the name of *heather mixtures*.²³

This account shows that the notion of making tweeds from shades that were selected to 'resemble' the colours of Scottish country landscapes was completely novel. Notably, an 1838 advertisement confirms that Locke was offering 'Heather and Granite Stone Mixtures for Shooting Jackets' for sale through his establishment in fashionable Regent Street.²⁴ It is significant that the development of these new designs took place at a time when Alistair Durie notes there was a substantial increase in upper-class and upper-middle-class men travelling to Scotland to take part in field sports.²⁵ In his text of 1863, Locke makes further revealing statements about the influence of his gentlemen clientele and the colours of domestically woven cloths from the Scottish Highlands on the characteristics of some early tweeds:

we for the first time introduced a yellow colour never seen before in town, although we remembered to have seen it on a Highland drover. This colour, so hateful in general, has become, when tastefully contrasted with others a very favourite one and we maintain that "Scotchified" patterns did not originate with the makers of Scotch tweeds. It was the Highland glens that gave many of them to the trade. Gentlemen brought the colours up from their shooting boxes, as they could not be produced there in any quantity.²⁶

23 Locke, 'A Few Facts', p. 3.

24 *The Satirist*, 2 September 1838, front cover.

25 Durie, 'Unconscious Benefactors', pp. 58–59.

26 Locke, 'A Few Facts', p. 3.

Locke capitalised on the desires of his customers for the domestically woven woollens they had acquired on Scottish sporting trips. He subsequently had tweed designs influenced by these cloths woven in substantial quantities in Scottish Borders mills.²⁷ These new approaches to incorporating vivid colours from rural environments—including autumnal shades of orange, red and yellow—into fashionable sporting tweeds for menswear are further evidenced by an artefact in the collections of Heriot-Watt University. This very rare pattern book dates from 1836–1837 and was created by the Edinburgh-based designers and drapers, J&A Ogilvie.²⁸ Alexander Craig recalled that James and Archibald Ogilvie ‘took a lead in designing patterns, in fact they were undoubtedly the first designers of their day. Their patterns became well known, and were much sought after by the leading wholesale houses in London’.²⁹ It is notable that textile samples within the J&A Ogilvie volume illustrate and confirm the descriptions by Cochrane, Craig and Locke of the design characteristics of the early tweeds. Significantly, some of the Ogilvie designs demonstrate the initial development of what became the principal features of many tweeds from the mid-nineteenth century onwards. These characteristics include the importance of ‘broken effects of colour, attained either by pattern, or by blends of colour’, as identified by Edward S. Harrison in his 1944 text ‘WHAT IS TWEED?’³⁰ Another key feature was the employment of both bright and subtle shades from Scottish rural environments, as illustrated by swatches in the Ogilvie book, which include small areas of vivid orange within an overall design that is principally black and white (see Figure 6.1). These colour effects were similar to the ‘beautifully mottled’ colourings of stones noted by Craig in 1875. He states:

The most successful colourings for mixtures I myself ever hit upon were taken from waterworn stones I collected from the bed of the river Garry in the pass of Killiecrankie—mostly granites, porphyries and jaspers, which I found to be particularly rich in colourings such as reds, greys, and greens, beautifully mottled, and mixed with other finely contrasted colours.³¹

²⁷ *Ibid.*

²⁸ J. & A. Ogilvie pattern book, Textile Archive, Heriot-Watt University, GH.6.1.1.

²⁹ Craig, ‘The Early Stages of the Tweed Trade’, p. 2.

³⁰ E.S. Harrison, *Scottish Woollens*, p. 150.

³¹ Craig, ‘The Early Stages of the Tweed Trade’, p. 2.



Fig. 6.1. J&A Ogilvie pattern book, 1836–37, tweed samples, Heritage Information and Governance, Heriot-Watt University, G.H. 6.1.1.3, photo by Fiona Anderson.

This approach of incorporating bright colours from nature in limited proportions within an overall design to yield attractive variegated colour effects has proven to be highly influential on tweed design since the 1830s. A key characteristic of these methods is that they provide scope for endless novelty and variety in colour and pattern, whilst maintaining a visually coherent relationship to the broad ‘family’ of tweed. Significantly, the overall appearance of these tweeds designed for menswear was often dark or subdued, with bright shades of yarn only obvious when close up to the wearer. The leading woollen merchant George Harrison & Co. of Edinburgh published a trade circular ‘The Tweed Trade’ on 24 March 1864, which confirms these points:

The patterns for next winter have nearly all been prepared, and exhibit great ingenuity and improving taste on the part of the designers. So far as we are able to judge, dark grounds with small patterns of bright and fancy colourings, will be the style for plain goods, and as the public taste apparently requires something more *recherche* than has appeared

in the market for some seasons, fancy checks in considerable variety will likewise be shown.³²

This emphasis on colour, design and fashionable novelty encouraged the British and international demand for Scottish tweeds, which was 'becoming very great among commission and export houses', as further noted in the Harrison circular.³³ In addition, the influence of Scottish tweed designs was commented on within the Juror's Report on Woollen Goods linked to the London-based International Exhibition of 1862: 'To the Scottish manufacturers belong the credit of [...] having led for a considerable period the public taste. So largely have their productions been imitated on the Continent, that many of the choicest fancy trouserings of France and other countries are easily traceable in design and colouring to their Scotch origin'.³⁴

From the early 1850s, tweeds became increasingly popular for making the newly fashionable lounge suits that were considered socially appropriate attire in the country and as informal morning wear in town. The term 'business suit' that is more familiar today was also used to describe this modern combination of matching jacket, trousers and waistcoat from the early twentieth century, as Christopher Breward notes.³⁵ Significantly, the approach to variegated colour in tweed design that initially developed for the purpose of country sporting camouflage was subsequently adapted for use in urban settings. Examples of tweed suiting cloths for wear in town are contained within a Blenkhorn Richardson & Co. Ltd range book of winter 1907. These samples are essentially dark in colour, but they have silk or wool yarns in vivid tones of orange, yellow, red, green and purple running through them. Notably, these subtle colour effects position these tweeds at the elite, luxury end of the menswear market. Additional, more colourful tweed swatches in this range book confirm that by the early twentieth century, British men still had more freedom to experiment with colour in cloths that were adopted in sporting, country or leisure contexts.³⁶

32 George Harrison & Co., trade circular 'The Tweed Trade', 24 March, 1864.

33 *Ibid.*

34 'Juror's Report on Woollen Goods in the International Exhibition of 1862', in Adam Cochrane, 'Notes on the Scotch Tweed Trade', p. 799.

35 Christopher Breward, *The Hidden Consumer: Masculinities, Fashion and City Life 1860-1914* (Manchester: Manchester University Press, 1999), p. 46.

36 A.1996.279, National Museums Scotland.

Colour, Gender and Dyeing in the Scottish Mill-based Tweed Industry 1856–1914

In an early twentieth-century booklet, *The Manufacture of Scotch Tweeds*, David Christie posited that ‘the popularity of Scotch Tweeds depends upon three things: The sterling value and soundness of the wools and yarns employed; the artistic effects of the blending and arrangement of the colours; and lastly, great care that the dyes should not be of a fugitive nature’.³⁷ Christie argued that these factors were pivotal to maintaining the high-quality standards that distinguished the ‘real Scotch Tweed’ from cheaper imitations of these cloths.³⁸ Notably, he did not mention which types of dyes were commonly used to make these textiles by the early twentieth century. Furthermore, the published literature on the history of tweed does not address the question of when synthetic dyes began to be used to make these cloths in mainland Scottish mills.³⁹ This section therefore focuses initially on investigating the limited published sources that consider the development of synthetic dyeing in the British wool textiles industry. Primary research is then used to explore the extent to which dyeing practices in the Scottish Borders tweed industry were similar to, or diverged from, that broad pattern of development.

In their economic history study *The British Wool Textiles Industry 1770–1914*, David Jenkins and Kenneth Ponting argue that the most important technological advances in that branch of manufacturing between 1870 and 1914 related to dyeing and other chemical processes such as carbonising. Regarding the use of dyes in that industry in the seventy years before the development of synthetic colourants, they confirm that:

Indigo was the most widely used dye, not only for blues but with various yellow dyes for greens, with various reds for purples, and still to some extent for blacks when overdyed with fustic or madder. For blacks, however, more often logwood was used by 1800 [...] Logwood

³⁷ David Christie, *The Manufacture of Scotch Tweeds* (promotional booklet for Peter Anderson Ltd, undated), p. 4.

³⁸ *Ibid.*

³⁹ E.S. Harrison, *Scottish Woollens*; Stillie, ‘The Evolution’, 309–31; Gulvin, *The Tweedmakers*; Ponting, ‘The Scottish Contribution’, pp. 78–96; Anderson, *Tweed*; E.P. Harrison, *Scottish Estate Tweeds*; Rae and Urquhart, *Fabric of Scotland*.

gave an excellent black, when mordanted with iron, and a better one still when chrome mordants were introduced in the middle of the nineteenth century.⁴⁰

Jenkins and Ponting also identify, through their material cultural analysis of pattern books, that 'the main problem facing the earlier dyers was matching one batch to another and this had always been the case with the natural dyes which were not usually standardised'.⁴¹ From the mid-1850s, new technological developments in dyeing began to transform the potential ways of colouring textiles. As has been well-documented, the first aniline dye, mauveine, was created by the English chemist William Henry Perkin in 1856, although it was not available commercially until late 1858.⁴² It was followed by a range of other aniline dyes that could be applied directly to wool, without mordanting or vatting. David Jenkins confirms that the development of synthetic dyes had a significant impact on the European and American wool textile industries by the early twentieth century, as it helped manufacturers to offer consistent shades of colour and also to dye woollens more cheaply.⁴³ Jenkins and Ponting argue, however, that the use of the new aniline dyes was 'limited' at first in the British wool textiles industry due to problems with their fastness.⁴⁴ In 1884, the renowned dyeing expert J. J. Hummel expressed the similar view that it was 'unfortunate [...] that the brilliant series of colouring matters first derived from aniline were so fugitive'.⁴⁵ Regarding further changes in dyeing within the British wool textile industry in the later nineteenth century, Jenkins and Ponting argue that:

the synthesis of madder also by Perkin and by two German chemists, Graebe and Liebermann, meant that this natural dye could be made artificially. This synthesis led to the coming of a wide range of alizarine

40 David Jenkins and Kenneth Ponting, *The British Wool Textile Industry 1770–1914* (Aldershot: Scolar Press, 1987), p. 214.

41 *Ibid.*

42 Anthony S. Travis, *The Rainbow Makers: The Origins of the Synthetic Dyestuffs Industry in Western Europe* (Bethlehem, PA: Lehigh University, 1993), pp. 36–51; Engel, 'Coloring the World', p. 38.

43 David Jenkins, 'The Western Wool Textile Industry in the Nineteenth Century', in *The Cambridge History of Western Textiles, II*, ed. by David Jenkins (Cambridge: Cambridge University Press, 2003), 761–89 (p. 764).

44 Jenkins and Ponting, *The British Wool Textile Industry* p. 215.

45 J.J. Hummel, 'Notes on the Application of Alizarine and Allied Colouring Matters to Wool Dyeing', *Journal of the Society of Dyers and Colourists*, 1 (1884–85), 11–16 (p. 11).

dyes and these provided many valuable additions to the repertoire of the wool textile trade. But, until the end of the century natural dyes to a large extent held their position, indigo for the various purposes already listed and logwood as the best black. Then the last years of the century brought two developments: synthetic indigo was introduced and because of its better standardisation soon replaced the natural product, and a series of chrome blacks were invented which, after quite a struggle, largely replaced logwood.⁴⁶

The long-term impact of these developments was confirmed by the *Yorkshire Observer's Annual Review* of 1915, which stated that manufacturers of heavy woollens had become so dependent on aniline dyes from Germany by 1914 that the 'difficulty of procuring them will be one of the chief obstacles in the way of the woollen trade until the end of the war'.⁴⁷ The term 'heavy woollen' was another name for the mass market cloths made in great volume in Yorkshire from recycled wool. Significantly, Hummel confirmed in 1884 that these cheap woollens required a high degree of 'permanency of colour', which underlines the major improvements made by the early twentieth century in the fastness of synthetic dyes.⁴⁸

Primary research completed for this chapter has explored the extent to which dyeing practices in the Scottish tweed industry aligned with the broad developments identified by Jenkins and Ponting. In 1856, National Museums Scotland (formerly the Industrial Museum of Scotland) acquired an extensive group of dyestuffs used by the leading tweed manufacturer P & R Sanderson of Galashiels, Scottish Borders. The dyes collected were ground logwood, indigo, madder, cudbear, lac, cochineal, camwood or redwood, quercitron, ground fustic and woad.⁴⁹ These natural dyes, with the exception of quercitron bark from America, were long established as being 'typical and common for dyeing wool' in eighteenth-century Europe, as confirmed by Anita Quye, Dominique Cardon and Paul Balfour.⁵⁰ In addition, they align well with Jenkins

46 Jenkins and Ponting, *The British Wool Textile Industry*, p. 215.

47 *Yorkshire Observer's Annual Review*, 1915, text reproduced in *The Economist*, 19 February 1916, 69.

48 Hummel, 'Notes on the Application of Alizarine', p. 11; Engel, 'Coloring the World', p. 43.

49 T.1856.80.B.2-21, National Museums Scotland.

50 Anita Quye, Dominique Cardon and Paul Balfour, 'The Crutchley Archive: Red Colours on Wool Fabrics from Master Dyers, London, 1716–1744', *Textile History*, 51

and Ponting's description of typical British dyeing practices for wool before the availability of synthetic colourants.⁵¹ A trade circular from the merchant George Harrison & Co. of 5 October 1864 features revealing evidence about changing dyeing practices in the tweed industry:

Full advantage has been taken by Tweed manufacturers of the recently-discovered "tar colours," and since they were first introduced a manifest improvement in designs is observable. The brightness of aniline shades, not less than their expensiveness, appeared at first likely to render them unsuitable for modern ideas of gentlemen's dress; but the skill with which they are combined and blended with graver shades, both in wool mixtures and yarns, and the facilities which are afforded by so great a variety of them in forming harmonious amalgamations or bold contrasts, have been of immense service to the trade. The test of several seasons has proved their excellence as durable colours when properly dyed.⁵²

Notably, this text confirms that these cloths were almost exclusively designed for men during this period. By addressing elite wool textiles for menswear, it extends the conclusions of Alexander Engel, who argues that, when it came to silk fabrics for womenswear, 'the aniline dyes of the late 1850s and the 1860s were extremely costly and usually employed in the dyeing of luxury silks, for which new fashionable colors and startling shades were worth almost any price'.⁵³ It is notable that the Harrison circular refers to the brief era when the first aniline dyes became commercially available, and when the luxurious prestige, novelty and modernity of these colourants might have been perceived by George Harrison as excellent selling points for the high-class tweeds he sold. The high cost of utilising these brilliant dyes in the early 1860s would have been mitigated to some extent by their use in small amounts within an overall tweed design. The detailed trade knowledge demonstrated by George Harrison & Co. in their 1864 circular indicates that the assertion that aniline dyes were used by many Scottish tweed manufacturers is worthy of further investigation. Exploring further comment from George Harrison & Co. through other circulars has not been possible, as these documents either did not exist or have not

(2020), 119–66 (p. 15).

51 Jenkins and Ponting, *The British Wool Textile Industry*, p. 214.

52 George Harrison & Co., trade circular 'The Tweed Trade', 5 October 1864.

53 Engel, 'Coloring the World', p. 39.

survived. Comparison of the October 1864 circular with a wider range of research evidence, including a British government report of 1872, local newspapers and a previously unpublished dye book has, however, yielded a more nuanced historical picture.

Major concerns about river pollution in Victorian Britain prompted a series of government reports, which contain detailed information about dyeing practices in the wool textile producing districts of England and Scotland. The fourth report commissioned in 1868, and published in 1872, incorporates findings from the Scottish Borders region, including responses from thirty-eight woollen manufacturers, two specialist dyers and one woollen yarn spinner to standard questions about the use and disposal of dyes and other waste. Significantly, only three of these forty-one companies declared that they used aniline dyes, namely the tweed manufacturers George Lees and Company of Galashiels, George Roberts & Company of Selkirk and William Watson & Sons of Hawick.⁵⁴ The latter firm did not quantify the proportions of different dyes used, simply stating that ‘we use as dye wares, chiefly logwood, aniline dyes and cochineal 52 tons yearly’.⁵⁵ By contrast, the first two mills reported that they predominantly used natural dyes, along with some synthetic colourants. George Roberts & Company of Selkirk, for example, stated that they ‘use annually as dye wares, logwood and other vegetable dyes, 99,800 lbs [...] aniline dyes, 660 [...] cochineal 207’.⁵⁶ Artificial colourants would have featured in a greater number of tweeds than simply indicated by these proportions, because bright colours were typically only used in limited amounts within each design. Nevertheless, it is clear that the use of aniline dyes in the Scottish Borders tweed industry was very limited between 1868 and 1872.

The government report of 1872 contains the transcripts of oral witness interviews with the owners of several Scottish Borders tweed mills. Mr Robert Gill of Walker, Gill and Company, Innerleithen who was interviewed on 16 September 1870 responded to the question ‘are you interested at all in aniline colours?’, by stating ‘yes, but they are less dyed here now than they were some time ago, but still

54 Royal Commission on Rivers Pollution Prevention of 1868 (Rivers Pollution Commission of 1868), *Fourth Report* (Scottish Rivers), C.603, 1872, II, 123–37.

55 Rivers Pollution Commission of 1868, *Fourth Report*, II, 131.

56 *Ibid.*

those colours are dyed'.⁵⁷ Significantly, this oral evidence clarifies the apparent contradiction between the findings of the 1872 report about the limited use of aniline dyes, and the marked enthusiasm amongst tweed manufacturers for using synthetic dyes in the early 1860s noted by George Harrison & Co. in 1864. Together, the evidence from Harrison & Co., Mr Robert Gill and the wider 1872 report suggests that while initial interest in experimenting with aniline dyes had waned by 1870, these dyes were still being used by a few tweed producers in that era.⁵⁸

The prompt decline and limited continued use of the early aniline dyes in the tweed industry may be explained with reference to late nineteenth-century texts on dyeing, including Hummel's statement in 1884 that these dyes were 'so fugitive'.⁵⁹ Furthermore, as J. W. Slater noted in his dictionary of dyestuffs of 1870, 'the degree of permanence required varies very much according to the nature of the goods and the circumstances to which they are likely to be exposed. Articles of dress which will only be worn once or twice, and that by artificial light, may be dyed with colours of a very fugitive class'.⁶⁰ A fashionable silk ballgown is a typical example of clothing worn in that type of environment around 1870. By contrast, from the 1850s, Scottish tweeds became increasingly widely worn by upper- and upper-middle-class British men for informal morning wear in town, as well as for country sporting attire worn outside in all types of weather.⁶¹ Appropriate dyeing materials for luxury silks for womenswear therefore diverged significantly from those suitable for fashionable tweeds for menswear, because the latter required a higher degree of fastness, particularly if worn in sporting contexts. In 1885, William Perkin noted in his presidential address to the Society of Chemical Industry that although the first aniline dye he developed was the fastest purple shade on the market at that time, 'the love of brilliancy of colour which it has induced caused less attention

57 Rivers Pollution Commission of 1868, *Fourth Report*, III, 189.

58 George Harrison & Co., 'The Tweed Trade', 5 October 1864; Rivers Pollution Commission of 1868, *Fourth Report*, II, 123–37 and III, 189.

59 Hummel, 'Notes on the Application of Alizarine', p. 11.

60 J.W. Slater, *The Manual of Colours and Dyewares. Their Properties, Applications, Valuation, Impurities and Sophistications. For the Use of Dyers, Printers, Drysalts, Brokers etc.* (London: Lockwood & Co., 1870), pp. 50–51.

61 Anderson, *Tweed*, pp. 49–57.

to be given to the subject of fastness'.⁶² E. Schunk made similar points about fashion and dye selection in a lecture of 1888, stating that 'it is of little consequence, as Chevreul observes, whether the colour of ladies' dresses is permanent or not, since here it is only brilliancy and lustre that are sought'.⁶³ In 1884, Hummel noted the positive impact that this fashionable demand had on technological progress by 'keeping alive the manufacture of even fugitive colouring matters and thus stimulating that particular field of chemical research which has at length yielded colouring matters of greater permanency'.⁶⁴ The interconnections between the environments clothes were worn in, cost, dye fastness, fashion and the gendering of textiles were shifting and highly complex in the late nineteenth century. An example of the nuanced specificities involved was given by James Locke in 1860, who advised that when fishing, 'the drab colour is the best of standing the sun's rays, as heather mixtures soon lose their colours in summer'.⁶⁵ The continued popularity of the heather mixture design despite its limited fastness at that time confirms that tweed manufacturers had to strike an appropriate balance between fashionable novelty and dye permanence. The seasonal imperative to create new and appealing tweeds, as discussed earlier, is a key factor in explaining why, by 1870, George Lees and Company, George Roberts & Company, and William Watson & Sons continued to use limited amounts of the early aniline dyes.

Surviving evidence about tweed dyeing practices between 1873 and 1909 is limited, which is not surprising: firms regarded these matters with some secrecy because colour and design were pivotal factors in their competitiveness. Local Scottish Borders newspapers, however, provide some useful indications that alizarin dyes were becoming more widely used by the period of 1888 to 1891. An advertisement in the *Hawick Express* of 12 May 1888 confirms that the large tweed mill Blenkhorn, Richardson & Co. wished to recruit a Foreman Dyer

62 William Henry Perkin, 'The President's Address', *Journal of the Society of Chemical Industry*, 4 (1885), 427–38 (p. 428).

63 E. Schunk, 'Some Remarks on the Theory of Dyeing', *Journal of the Society of Chemical Industry*, 7 (1888), 815–19 (p. 819).

64 Hummel, 'Notes on the Application of Alizarine', p. 11.

65 James Locke, *Tweed and Don; or, Recollections and reflections of an angler for the last fifty years* (London: Simpkin, Marshall and Co., 1860), p. 19.

with a 'good knowledge of the Alizarine process'.⁶⁶ Furthermore, James Dalziel & Co., a Walkerburn tweed producer, advertised in the *Scottish Border Record* of 15 June 1889 for an experienced dyer 'accustomed to Alizarine dyeing', and a similar advertisement from another manufacturer was published on 27 March 1891.⁶⁷ An article on the tweed trade in the *Hawick News and Border Chronicle* of 26 December 1890 explains why these artificial colourants were becoming more widely used:

Blues, smokes, and slates, which have been the leading colours are now giving place to mouse browns, blue-browns and red-browns. With the new alizarine dyes, browns of almost every shade can now be got much faster in colour than the old, ordinary browns, which used to fade rapidly, so that the public will now have more satisfaction.⁶⁸

These comments are supported by research undertaken by Hummel in 1884 on the light fastness of alizarin dyes when applied to wool, which was a novel technique at that time.⁶⁹ Further evidence that suggests synthetic dyes had become more widely used in the tweed industry around 1900 comes from an article in *The Scotsman* newspaper of 1 December 1905. This article reported on a court action taken by 'Fritz Gans and others, manufacturers of aniline colours [...] Germany, against Kemp, Blair & Co. (Limited) Gala Dye Works, Galashiels'—one of the three specialist dyers in that prominent centre of the Scottish tweed industry. The article notes that these two firms had done business since at least 1901, which is unsurprising given the dominance of Germany in the global market for synthetic dyes by that era, as confirmed by Engel.⁷⁰

An extremely rare dye book held by Heriot-Watt University contains substantial evidence of the extensive use of synthetic dyes by a range of Scottish Borders tweed manufacturers by around 1910. The

66 Advertisement, *Hawick Express*, 12 May 1888.

67 Advertisements, *Scottish Border Record*, 15 June 1889 and 27 March 1891.

68 *Hawick News and Border Chronicle*, 26 December 1890, 3.

69 J.J. Hummel, 'Alizarine in Wool Dyeing', *Journal of the Society of Chemical Industry*, 3 (1884), 594–601 (p. 596).

70 *Scotsman*, 'FRITZ GANS AND OTHERS V. KEMP, BLAIR & CO. (LIMITED) AND OTHERS', 1 December 1905; Engel, 'Coloring the World', p. 37.

original firm that created this volume is not named within it, nor is it identified in the associated archival records. Clues within this book, however, indicate that it belonged to a specialist dyer who did orders for seventeen tweed manufacturers, including George Lees & Co.; Adam L. Cochrane; Sime, Sanderson & Co.; Brown Brothers; Clarke Brothers; and Henry Ballantyne & Sons.⁷¹ Companies that provided dyeing and finishing services to Scottish Borders mills were established during the late nineteenth century, although Gulvin notes that ‘most firms retained control over these processes’.⁷² The book in question contains 220 dyed yarn samples that each correspond to a specific dye recipe, customer name, colour name or number and weight of yarn to be dyed. These wool samples come in a substantial variety of subtly differentiated shades of blue, black, purple, grey, green, brown, red, orange and yellow, and there are only four samples in the glaringly bright colours that are commonly associated with synthetic dyes (see Figure 6.2). Significantly, logwood is only used in three of the samples. By contrast, the other natural dye listed, fustic extract, is employed in 75 of the 220 dye recipes, which results in many different named colours including drab, gold, red brown, amber, chestnut, dark grey, slate, olive and sage. The colourings in this dye book show a clear relationship to fashionable novelty and the design inspiration from rural landscapes discussed earlier in this chapter. A minority of the dye samples are highly textured *fantaisie* yarns for womenswear, which is consistent with Edward S. Harrison’s account that only a small proportion of Scottish mill-woven tweeds were adopted by women before 1919.⁷³ The increasing male adoption of the tweed lounge suit within a wider range of social contexts by 1910, including for urban attire, is reflected in the varied range of dyed shades of black, grey, brown and dark blue, which would typically have been accompanied by other coloured yarns to make a variegated design.⁷⁴

71 Dye book, c.1910, TEPH 8-1, Heriot-Watt University Archive. The date of 14 January 1910 is hand-written inside the front cover.

72 Gulvin, *The Tweedmakers*, p. 155.

73 E.S. Harrison, *Scottish Woollens*, pp. 169–70.

74 Anderson, *Tweed*, p. 52.



Fig. 6.2. Dyed samples, dye book, Scottish Borders, c.1910, Heritage Information and Governance, Heriot-Watt University, TEPH 8-1, photo by Fiona Anderson.

Engel's research on artificial dyes has confirmed that, while 'before 1870, fewer than fifty dyes were known in the market; by 1913, there were around 1,300—marketed in close to 9,000 major varieties'.⁷⁵ This immense variety of available synthetic colourants has informed the large range used within the Heriot-Watt dye recipe book dating from around 1910. In addition to alizarin and acid dyes in many colours, 'Congo Orange', 'Diamine Fast Red', 'Hessian Purple', 'Anthraquinone blue', 'Sulfron Cyanine GR' and 'Delta Purpurine' are just some of the dyes listed. The fact that this dye book contains orders from seventeen Scottish Borders tweed manufacturers strongly indicates that synthetic dyes were well

⁷⁵ Engel, 'Coloring the World', p. 43.

established in that industry by around 1910. By that time, there were many reasons to predominantly use artificial colourants, including their relative cheapness and the greater consistency of shades they offered compared to natural dyes. Other significant factors included the wide variety of colours available to extend the visual repertoire of an industry known for colour and design. Finally, the significant improvements in the degree of fastness offered by synthetic dyes supported the aim of tweed manufacturers to offer cloths of the highest quality standards.⁷⁶

Conclusion

Through the example of Scottish mill-woven tweeds, this chapter has examined the complex relationships between colour, design, new dyeing technologies, masculinities and fashion between 1829 and 1914. It has shown that sweeping Flugellian characterisations of nineteenth-century textiles for menswear as exclusively black or dark overlook significant, nuanced historical detail.⁷⁷ This chapter does not contest the important research by Charlotte Nicklas and others that has identified the 'central importance of consumer demand, especially that by women, as a spur to dye development'.⁷⁸ Instead, it extends the notion that 'color was the great enabler that permitted many industries to generate endless novelty' by showing the significance of these ideas to wool fashion textiles designed for men in the modern era.⁷⁹ Exploring the use of colour in early tweed design has revealed the powerful influences of Romanticism, rural landscapes, sport, fashion and masculinities on the design evolution of these cloths. The modern activities and sometimes challenging climatic environments related to the wearing of tweeds in this period meant that fastness was of considerable importance, which discouraged the extensive use of synthetic dyes in the Scottish tweed industry until the early twentieth century. Factors that encouraged the substantial use of synthetic dyes by that time included significant improvements in their colour permanency, greater standardisation,

76 Christie, *The Manufacture of Scotch Tweeds*, p. 4; Jenkins, 'The Western Wool Textile Industry', p. 764.

77 Flugel, *The Psychology of Clothes*, pp. 110–13; John Harvey, *Men in Black*.

78 Travis, *The Rainbow Makers*, p. 37–56; Blaszczyk, *Color Revolution*, p. 27; Nicklas, 'New Words', p. 97.

79 Nicklas, 'New Words', p. 99.

reduced costs and the ongoing need for manufacturers to remain competitive by creating appealing and novel colouring effects.⁸⁰

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