Living Dyeing: Morris, Merton and the Wardles
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‘Chemist and Artist’ is the terse description May Morris gives of George Wardle, who joined Morris Marshall Faulkner & Co. in the year after the move to Queen Square, and who was soon, in practice though not in name, the general manager; becoming so in status when in 1870 Warington Taylor, of whom she gives a much more glowing account, died. But George Wardle was by no means the lesser man, nor less regarded, by Morris above all. In her brevity, May was respecting Wardle’s own requirement of privacy.

‘Chemist and Artist’ is exactly right. Coming from a dyeing and weaving family, passing through the hoops of the South Kensington School of Design by way of local institutions, to become a delicate draughtsman and close observer, George Wardle was exactly what May called him – by contrast with Warington Taylor who, without any technical knowledge, was a gentleman of taste full of admiration for the Firm and anxious for its success.

Those who study Morris as a designer soon realise how deep was his engagement with colour as structure in design; and by extension, how important was his research into dyes as the fundamental means of achieving colour control. The finest pattern in the world could be ruined by variations in the product from the original standard of the design. It was his need to master the art of dyeing that took Morris to Wardle’s brother-in-law (and cousin) Thomas, to work at the vats in his Hencroft Works at Leek, Staffordshire. It was at George Wardle’s urging that as soon as Morris was sole owner and controller of the new Company, 26 Queen Square was vacated to free it for as much of design and production as could be housed, and Morris’s family moved to Horrington House, by the Roebuck at Turnham Green – least loved of their homes. Indeed Wardle had probably begun negotiations with his brother-in-law before the actual move and held arrangements until the dissolution at the end of the March Quarter freed Morris for this new beginning. Back from the Welsh holiday with Faulkner – which did so much to make him recognise his own Welsh origin – Morris set to work in the basement scullery which George Wardle had made into a dye-shop, with vats and storage for the necessary supplies of pigments and mordants from Skilbecks of London Bridge. Then came the first visit to Leek, on 19 July 1875, meant to last a week, it stretched to twice as long. Morris was back home as August began, and the first letter of the famous correspondence with Thomas Wardle was written immediately, on the third of the month. We do not have Tom Wardle’s replies, but Morris’s letters survive in the Library of Duke University, North Carolina, USA: typescript copies in the V & A Library, and all have been published in the Collected Letters (Volume I). These letters, with the ‘Merton Abbey Dye Book’ lent to the 1996 V & A Morris Exhibition by our friends the Bergers, offer the richest source of information on Morris’s way into, and his developed use of, dyeing and printing.

Morris had gone home with samples of the cloths he and Wardle had dyed – and
they had been ‘very much admired by my artistic friends ... one of the blues and one of the greens were among the best of the colours, and I had picked them out for orders at once: but they wash worse than Clarkson’s blues; in fact worse than any I have ever seen... What are we to do? First, can Kay [one of Wardle’s dyers] be driven to make his blues as fast as Hayworth’s? Second, when can we have our indigo vats? we must give up blues and greens till one or both of these things is accomplished....’

The second letter a few days later says – ‘I am quite contented to wait a little bit about the indigo matter’ and ‘I have been looking about for a Gerard for you... Meantime I have sent you a copy of Philemon Holland’s Pliny: a most curious book in itself and the translation a model of English.’ Pliny is the Historia Naturalis of Roman writer and naturalist Gaius Plinius: it, and Herodotus’s History of the World, were among the ancient books most valued by Morris.

In these two letters we have the complementary aspects of the Morris-Wardle relation springing from one root, at the same moment. Morris went to Leek to learn all he could about practical dyeing. All the colours in use at Hencroft were ordinary commercial pigments, including anilines, general in the trade; and seeing instantly that it was the ‘chemical’ Prussian blue that caused the failure to get bright and fast blues and greens, he instantly raised with Wardle the use of indigo, virtually obsolete – though even now, not entirely: it was still imported and used, with equally ancient woad, in a few dyeshops. Wardle was nothing loth to attempt the revival of any of the older, vegetable dyes, just going out of use when his father had set up his dyeworks: he was as much interested as Morris himself. It must never be assumed that Morris went to Wardle as a mere technician who could teach him the craft: he was a man of stature and force, Morris’s equal, in many ways. It was not as an antiquarian that Morris joined forces with him, but as a designer and manufacturer bent on the best.

Early in their work together, Morris in clogs and blouse, blue to the elbows, the idea of Indigo emerged as central to his hopes of perfecting his colour. What has been less noticed is that he is at the same time reading current literature – periodicals and books on current dyeing processes and available pigments. And, much as Morris learns from Wardle, Wardle learning from Morris, begins on his own account to look for out of the way works – in April 1876 sending Morris a copy of the rarest and oldest book on dyeing – Plitcho de Larte de Tentori by Giovanni Ventura Roseta (Venice 1540) – a name which Morris cannot help mistranscribing, as he asks Wardle what he owes for it, as ‘Rossetti’. But let us not follow innocent Mackail into the forest of old books: it was as a producer that Morris came to Leek.

He made three working visits between the summer of 1875 and the summer of 1877, after which, on the basis of agreed samples of dye and pigments, most of Morris’s chintzes were undertaken by Wardle. Exchanges continued in respect of books and information – one October weekend in 1876 the two men met in Paris, where Wardle had business, and visited museums and tapestry works. Morris stayed on, rummaging the bookshops, finding a copy of Macquer (Art de la Teinture en Soie) and of Hommasel (Cours de l’Art de la Teinture), from which he sent extracts to Wardle, made as he read; and two technical manuals, one on carpet weaving, one on cotton velvets – all from one shop, evidently not smart – ‘The old chap will send me a Hellot (Théorie de la Teinture des Etoffes) as soon as he can get one, and any old dyeing books.’ They had already tried indigo but were far from solving its problems.
The two men found much in common beyond dyeing – Wardle joined and was active in the SPAB – shared Morris's fishing at Kelmscott, as Morris fished with him in Derbyshire. The sharp differences that arose in 1880 were solved without loss of friendship; but the increasing sloppiness of the Leek printing meant that goods were too often unsaleable. This set Morris off, with William De Morgan, in that search for the ‘fictionary’ which brought them to the banks of the Wandle. From 1880, realising that he must withdraw his dyeing and printing from Wardle, two hundred miles away in Leek, and bring all production under his own eye – for which Queen Square was by no means big enough – nor could he in London get the absolutely necessary supply of suitable flowing water – Morris began to look about in places where earlier dyeing and papermaking works had been set up. Early in 1881 he and De Morgan settled on the old silk mill at Merton Abbey, which would serve their overlapping needs equally well. Each needed work spaces enough to house a variety of crafts and their materials: some, if simple, machinery – pugmills for clay, levigators for pigments; kilns for pottery and glass; wet and dry storage – and in Morris’s case, three large Jacquard looms. This community of need has not been studied – central to it, both men had become and remained expert colour chemists – which certainly in Morris’s case has never been fully understood.

He put his brother Edgar in charge of dyeing and colour mixing: and as soon as he knew that he must undertake all himself, began to record the many recipes for dyes and mordants used – in the case of printing, this might mean six or eight recipes, according to the number of blocks in the suite required to print one pattern. In the ‘Merton Abbey Dye Book’ we have the critical record of production of most of the chintzes. It begins with a short off-the-cuff list of the old books to which Morris had turned: but the name which occurs often, not in that list, nor in any of the letters to Wardle, is that of Persoz. This above all disposes of the myth of Morris as a mere antiquarian.

Some time between working with Wardle and the move to Merton, Morris – who read the current periodical literature of dyeing as well as books old and new – had bought the monumental four-volume, encyclopedic book which Persoz had researched and published in 1846 – ten years before the first anilines were isolated by Perkin in Manchester. It was thirty years before the new anilines were as stable and reliable as Morris needed – brilliance and variety they had too abundantly, but without due control these were hardly an advantage; least of all to Morris.

Persoz is so important a book, and Morris’s use of it so vital to his work, so indicative of the modernity of his research, that anybody interested in the man whether in this aspect of his work or not, must be glad to know something of the book – too easily references to books remain abstract, which Morris could never bear: the material world was his great joy even though the social ills we have generated enraged him to the end. Here then is the excellent account of this treasure, which we reprint from a recent catalogue issued by William Duck of Brightling, Sussex, with his generous permission.

FIRST EDITION. Paris. Victor Masson, Libraire des Sociétés Savantes près le Ministère de l'Instruction Publique, Place de l'École-de-Médecine. Même Maison, chez L. Michelsen, à Leipzig. 1846. 4 vols demy 8vo, 140 × 218 mm, together with 1 vol roy 4to, 273 × 316 mm, all in French uniform orig or contemp burgundy ¼-mor (8vo vols) and ¼-mor (4to vol), gilt-lettered sps with plain panels and raised bands, characteristic French glazed mottled bd sides, finely sprinkled t.e.'s, uncut, glazed mbld e.p.'s.

The four 8vo text/fabric-specimen vols collate (iv) + lx + (1) pp.; (iv) + 558 pp.; (iv) + 458 pp.; (iv) + 560 pp. They contain a total of (correctly) 1 all-colours-of-the-spectrum specimen 'Contraste de Ton' in Vol 2 at p.204, colour-printed on paper, and numbered as 'Échantillon 15' in the general numbering of the fabric specimens + (correctly) 427 original coloured and printed fabric specimens, dimensions varying marginally from approx obl 93 × 46 mm, but one is f/lp, and several others consist of two smaller examples in place of one larger one, but counted as one, all being stuck down in the numbered black-ruled frames provided for them + 165 f/lp and other wd-engr ills. and figures numbered 1-164 + one bis. In Vol 3 at p. 397 the frame for 'Échantillon 190' is empty, the following note being printed in it in place of a fabric sample: "L'Éditeur n'a pu se procurer du Solanum de Guinée pour faire exécuter cet échantillon", hence the discrepancy between the number quoted in the title, and the number as actually called for. In Vol 4 at p.459, 'Échantillon 375' is misnumbered '349' but is itself correct, answering the description of it in the adjacent letterpress. There are also numerous tables in the text. In Vol 1, bound in between pp. (iv)/i, is a 4-page report on this work, issued 13 May 1846 by the Comité des Art Chimiques of the Société d'Encouragement pour l'Industrie Nationale. All volumes still have their orig green silk marker ribbons, the one in Vol 1 now being detached, but the others still secure.

The 4to 'Atlas' volume collates (vi) pp. + Tableaux I-III, being 3 d/p colour-printed litho plts, each with multiple figures demonstrating the effects of contrasting colours + Planches 1 + 1 bis – XVI = 17 steel-engr plts, some with two or more figures (nine b/w d/p, one single-page hand-cold., and seven single-page blw), illustrating dye-making and textile-printing machinery: making, together with the other three, 20 plts altogether, as called for...

At the time this work was published the synthetic dyes had not yet been discovered, and the repertoire of those available – in essence not much more than a dozen or so, and all of them still derived from plants or insects – was still fundamentally what it had been in the Middle Ages. The most important of them were cochineal and kermes, madder, indigo, logwood and brazil-wood, fustic, weld, cutch, and the yellow dyes saffron, safflower and annatto. Although already in use for centuries, their application was nonetheless enormously increased in the early 19th century as a result of the industrial revolution and burgeoning population and affluence, all greatly increasing demand, and also by the great advances in chemistry at the end of the 18th and beginning of the 19th centuries. These, while they had no very profound immediate impact on textile dyes, nonetheless caused a fresh attention to be turned to them ... which culminated in the aniline dyes. In France, long before that happened, the government had during the Revolution invested in the dyeing industry, among other things subsidizing the cultivation of madder in Alsace and Provence, and breaking what was virtually a Dutch monopoly. Patronage was continued by later governments.
Louis-Philippe, at the time the present work was published, providing a colourful stimulus by dressing his infantry in the famous madder-red pantalon-garance. The madder industry survived until the discovery of the chemical composition of alizarin by Graebe and Liebermann in 1868.

The Swiss-born chemist Jean François Persoz (1805-1868) first worked in Neuchâtel and Paris before moving to Strasbourg, in Alsace, centre of the government-sponsored madder industry, where between 1833 and 1850 he held various scientific, teaching and administrative posts, including those of professor of chemistry at the Faculty of Sciences, assayer of the Mint, and professor of chemistry and director of the Strasbourg School of Pharmacy. Returning to Paris, in 1852 he obtained a professorship at the Conservatoire des Arts et Métiers, lecturing on dyeing and the printing of textiles.

In the present work as a preliminary the first twenty-six chapters are devoted to inorganic substances, methods of processing them, and their applications; while the following six deal similarly with organic ones. The second volume covers the chemical and mechanical processes of manufacture, the bleaching of textile fabrics, and different methods of drying and heating. Persoz then discusses the physical and chemical principles of the 'adhérence des matières colorantes aux tissus'; mordants; the laws of contrasting colours; design; textile-printing machinery; the mixing of dyes; printing techniques; and the basic 'genres' or families of dyes, with the compositions of many mordants and colours, for practical use by textile manufactures. This is all presented at great length, together with many other aspects of the subject, all of it highly scientific and technical. The plates in the Atlas have already been mentioned. The work is simultaneously dedicated to M. E. Chevreul and to Daniel Koechlin Schouc, manufacturer, of Mulhouse.

Books on dyeing and colours referred to by Morris in his letters to Thomas Wardle (1875–1878) or listed in the notebook headed 'The Merton Abbey Practice', August 1883.


Scheffer, Henrik Theophilus, Essai sur l’Art de la Teinture (Paris 1787).

Koechlin, Camille of Toulouse; devised a new system of dyeing Turkey-red: Morris’s rough list seems to suggest a book published in Paris in 1800 but he may have known of the system through current journals: the method was used by James Thorp of Clithero, Lancashire.


Chaptal, Jean-Antoine: an article on his method of Turkey-red dyeing cotton published in The Textile Colourist, No. 4 (1876), which Morris knew.

John Gerard’s Herball: A Generall Historie of Plants (1597) which Morris knew from childhood. The 1636 edition was in his library at his death.

Philemon Holland’s translation of Pliny’s De Historia Naturalis, or, The Natural History of the World (London 1601), a book much loved by Morris for its information and style.

Matthioli, Pietro Andrea, *Commentarii in Sex Libros* (Venice 1544), a materia medica not specifically a dyebook. An edition with large woodcuts published by Valgrisius [Balgrisi] (Venice 1565) was much admired by Morris.


Fuchs, Leonard, *De Historia Stirpium Commentarii Insignes* (Basel 1542) with c.500 fine large woodcuts: Morris had. Like Gerard, not a dyebook but a general account of plants and their properties.

