

Report

Turkey red – Annotated bibliography

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Description

1765. Mémoire contenant le procédé de la teinture du coton rouge-incarnat d'Andrinople sur le coton filé. Paris: l'Imprimerie Royale.

First publicly available method for dyeing Turkey red published by French Government. Provides description of typical 'old process' for Turkey red dyeing.

Full Text Link



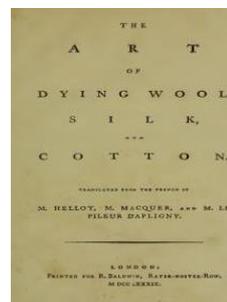
1776. L. d'Apligny, L'art de la teinture des fils et étoffes de coton : précédé d'une théorie nouvelle des véritables causes de la fixité des couleurs de bon teint, & suivi des Cultures du pastel, de la gaude, de la garance. Paris: Chez Servière, Libraire

Another French description of the 'old' Turkey red process as practiced in Darnetal, and in other manufactories of France.



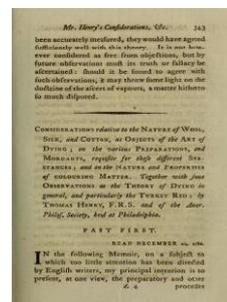
1789. The Art of Dying Wool, Silk, and Cotton. Translated from the French of M Hellot, M. Macquer, and Le Pilleur d'Apligny. London: Printed for R. Baldwin

This English translation of works of Hellot, Macquer, and d'Apligny provides the process described by d'Apligny for dyeing 100 pounds of cotton Turkey red. It further describes the role of oil (source of oil and how it should be applied on the cotton) and dung in the process.



1790. T. Henry, Considerations Relative to the Nature of Wool, Silk, and Cotton, as Objects of the Art of Dying; on the Various Preparations, and Mordants, Requisite for These Different Substances; and on the Nature and Properties of Colouring Matter. Together with Some Observations on the Theory of Dying in General, and Particularly the Turkey Red, *Memoirs of the Literary and Philosophical Society of Manchester*, 3:343–408.

The part second of the memoir by Thomas Henry, a chemist and member of the Manchester Philosophical Society, provides a detailed account of the 'old' Turkey red process for dyeing sixty-six pounds of cotton yarn employing fifteen successive operations and involves use of Alicante barilla, sheep dung, Gallipoli oil, gall decoction, Roman alum, Smyrna or Cyprus madder and sheep blood. Special emphasis on use of freshest possible dung and blood. In part third, he further discusses chemistry of



different operations and action of the substances employed in the preparation for the Turkey red.

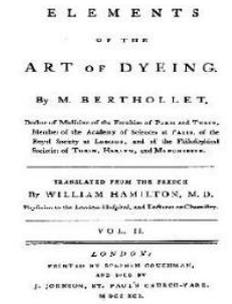
1791. C.L. Berthollet, *Éléments de l'art de la teinture*. Vol. 2. Paris: F. Didot.

French chemist Berthollet provides 'old' process for dyeing Adrianople or Turkey red.



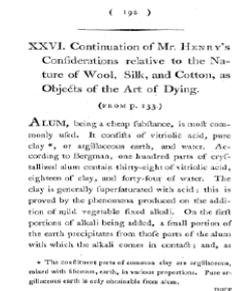
1791. C.L. Berthollet, *Elements of the Art of Dyeing*, Vol. II, Translated by William Hamilton. London: Stephen Couchman.

English translation of above text. Berthollet provides 'old' process for dyeing Adrianople or Turkey red in seventeen successive operations – Scouring, dung bath, white bath (bath with olive oil), four salt treatments (treatment with soda), washing, galling, aluming, washing from the alum, second white bath, three salt treatments, dyeing and brightening. He gave a detailed discussion of the chemistry of various ingredients and steps. He emphasized that the type of madder employed has great influence on the colour produced.



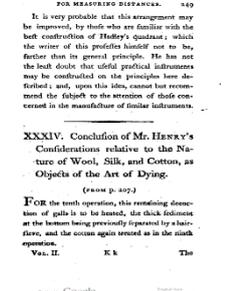
1795. H. Thomas, XXVI. Continuation of Mr. Henry's Considerations Relative to the Nature of Wool, Silk, and Cotton, as Objects of the Art of Dying, &c., *The Repertory of Arts and Manufactures*, 2: 192-207.

In this third in a series of four articles on the topic, Henry describes particular preparatory operations practiced for dyeing Adrianople or Turkey red for sixty six pound of cotton. It gives description of first to ninth operation of fifteen step process.



1795. H. Thomas, XXXIV. Conclusions of Mr. Henry's Considerations Relative to the Nature of Wool, Silk, and Cotton, as Objects of the Art of Dying, Part 1, *The Repertory of Arts and Manufactures*, 2: 249-275.

Henry continues to give details of tenth to fifteenth operation of Turkey red process. Also describes theory of dyeing for the process.



both aluminium (alum) and calcium (quicklime). The clearing step involves a boil with wheat bran.

1802. J.M. Haussmann, LVIII. Observations on dyeing with madder; followed by a simple and invariable process for obtaining, in its great beauty and solidity, the colour known by the appellation of Levant or adrianople red, The Repertory of Arts and Manufactures, 16 : 338-343.

Same text as in Haussmann's observations on maddering related to improvement in dyeing quality published in Philosophical Magazine Series 1.

1802. J.M. Haussmann, LXVIII. Observations on dyeing with madder; followed by a simple and invariable process for obtaining, in its great beauty and solidity, the colour known by the appellation of Levant or adrianople red, The Repertory of Arts and Manufactures, 16 : 398-410.

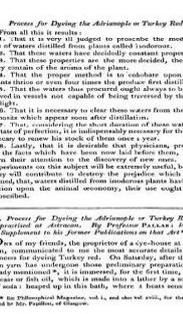
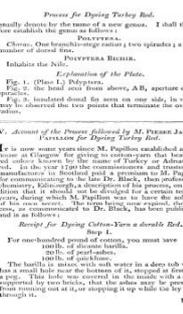
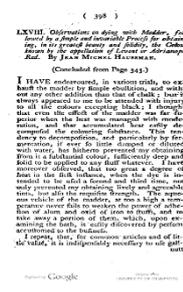
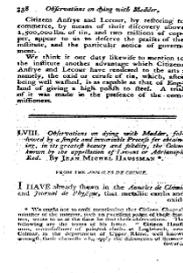
Same text as in Haussmann's description of his Turkey red dyeing published in Philosophical Magazine Series 1.

1804. V. Account of the Process Followed by M. Pierre Jacques Papillon for Dyeing Turkey Red. Philosophical Magazine Series 1, 18 (69): 43–47.

This is the description of Turkey red process communicated by Papillon to Dr. Black, a professor of Chemistry in Edinburgh, as a part of his agreement with commissioners and trustees and manufactures in Scotland. The method describes Turkey red process for dyeing one hundred pound of cotton in nine successive steps using alicante barilla, pearl ashes, quicklime, sheep's dung, oil of vitriol, gum arabic, sal ammoniac, galls, Roman alum, ox blood, madder. The process description is very similar to typical 'old' process, with some modifications like usage of oil of vitriol, gum arabic, sal ammoniac.

1806. S.P. Pallas, II. Process for Dyeing the Adrianople or Turkey Red, as Practised at Astracan: Being a Supplement to His Former Publications on That Art. Philosophical Magazine Series 1, 25 (97): 8–9.

Here, Pallas describes the amounts of different materials used in 'old' Turkey red process using fish oil and time taken in completing different steps.



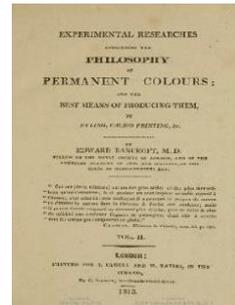
1812. J. Galt, Voyages and travels in the years 1809, 1810, and 1811: containing statistical, commercial, and miscellaneous observations on Gibraltar, Sardinia, Sicily, Malta, Serigo, and Turkey, London : Printed for T. Cadell and W. Davies

Galt describes Persian, Greek, German and Glasgow method of Turkey red dyeing.



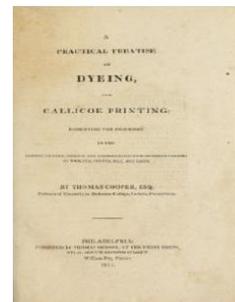
1813. E. Bancroft, Experimental researches concerning the philosophy of permanent colours: and the best means of producing them, by dyeing, calico printing, & c. Vol. II, London: T. Cadell, Jun and W. Davies

A section on 'Rubia peregrina, Lin. Smyrna or Levant Madder, and its application for dyeing the Turkey Red' gives an brief account of historical journey of Turkey red followed by detailed description of Papillon's Turkey red process along with critical remarks on each step showing comparison with process practiced in Rouen. He cited want of chemical knowledge in Papillon's description of using sulphuric acid, sal ammoniac and gum arabic, which he thought as peculiarity added by Papillon to render it more deserving of a reward. He further provides discussions on chemistry of Turkey red process citing works of contemporaries on suitability of different steps and ingredients used.



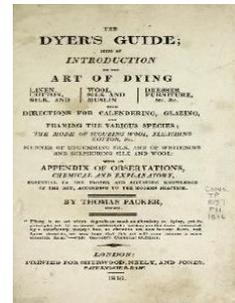
1815. T. Cooper, A Practical Treatise on Dyeing, and Callicoe Printing: Exhibiting the Processes in the French, German, English, and American Practice of Fixing Colours on Woollen, Cotton, Silk, and Linen. Philadelphia: Thomas Dobson.

Details of Borrel's process of dyeing Turkey red followed by Editor's own process for dyeing an imitation of Turkey red. Remarks on type and quantities of ingredients such as madder, alum, barilla etc. used in different Turkey red methods with explanations and some reasons for preferring one process to another.

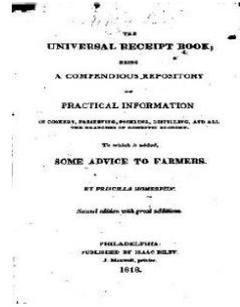


1816. T. Packer, The dyer's guide: being an introduction to the art of dyeing linen, cotton, silk, wool, London: Sherwood, Neely, and Jones

Provides a method for dyeing one hundred pounds of unbleached cotton Adrianople or Turkey red using alicant soda, fresh wood ashes, quicklime, sheep's dung and intestinal liquor, good olive oil, galls, alum, lizary madder, sheep's blood and white soap.

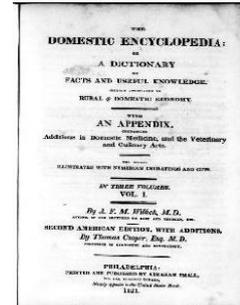


1818. P. Homespun. The Universal Receipt Book: Being a Compendious Repository of Practical Information. Philadelphia: Isaac Riley



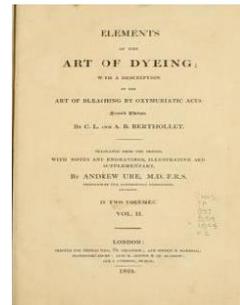
Describes process of dyeing cotton or linen Turkey red. Homespun notes that the intensity of the red colour will be in proportion to the quantity of madder used in the dyeing: if the quantity of madder used is equal to the weight of cotton a red will be produced which will change to rose colour after freshening (clearing); for carmine colours two, three or even four parts madder should be used. Also suggests to add little chalk if water used do not contain it.

1821. A.F.M. Willich, T. Cooper, The Domestic Encyclopedia, Vol. 2, Philadelphia : Abraham Small



The section on dyeing gives description of Turkey red process by M. Haussman.

1824. C.L. Berthollet, A.B. Berthollet, Elements of the art of dyeing: with a description of the art of bleaching by oxymuriatic acid, 2nd Ed., with notes and engravings, supplementary and illustrative by Andrew Ure, Vol. 2, London: Thomas Tegg.



English translation of Berthollet's description of Turkey red process by Scottish chemist Dr Andrew Ure. Also gives notes on different printing methods of Turkey red.

1827. C. Cameron, III.—Soda ley for dyers, Transactions of the Society, Instituted at London, for the Encouragement of Arts, Manufactures, and Commerce, 45, 68-70.



Cameron describes a cheap and simple process of for making cheap soda liquor by decomposing muriate of soda by pearl-ash for the use of the Turkey red dyers.

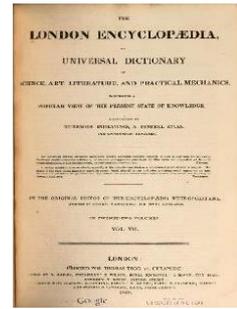
1828. C. Cameron, Method of making a cheap soda liquor, without crystallizing, for the use of the Turkey-red dyers, Journal of the Franklin Institute, 5(6), 388-389.



Same as Cameron's earlier description entitled 'III. Soda ley for dyers.'

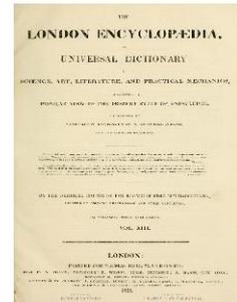
1829. London Encyclopedia, Vol. VII, London : Thomas Tegg

The section under heading ‘Of dyeing red’ provides account of process as given by Dr. Bancroft and his remarks in reference to the process observed at Rouen in France.



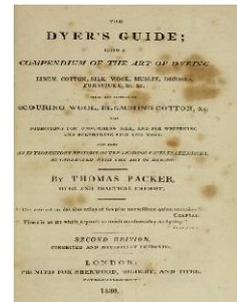
1829. London Encyclopedia, Vol. XIII, London : Thomas Tegg

The section under heading ‘Madder’ provides Papillon’s Turkey red process.



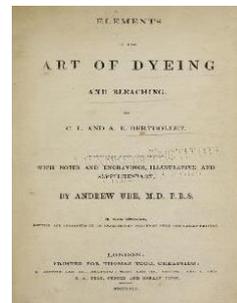
1830. T. Packer, The dyer's guide: being an introduction to the art of dyeing linen, cotton, silk, wool, 2nd Edition, London: Sherwood, Gilbert and Piper

Provides a method for Turkey red dyeing of one hundred pounds of unbleached cotton. Also cites miscellaneous observations relative to Adrianople red by contemporaries.



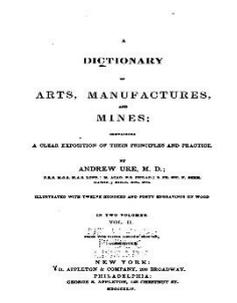
1841. C.L. Berthollet, A.B. Berthollet. Elements of the Art of Dyeing and Bleaching, with notes and engravings, supplementary and illustrative by Andrew Ure, A new edition. London: Thomas Tegg.

English translation of description of Turkey red process given in Berthollet’s ‘Éléments de l’art de la teinture’ by Scottish chemist Dr Andrew Ure.



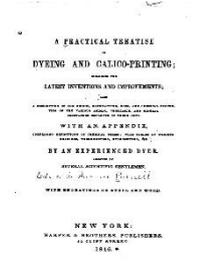
1844. A. Ure, A Dictionary of Arts, Manufactures, and Mines. 3rd ed. Vol. 2. New York: D. Appleton & Company.

Ure discusses technological advances Turkey red dying, describes the process in a production environment and comments on methods from other dyers.



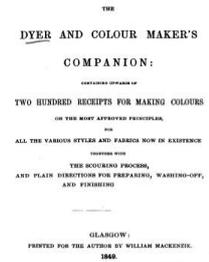
1846. E.A. Parnell, A practical treatise on dyeing and calico printing. New York: Harper and Brothers Publishers

Gives description of six variations of Turkey red process practiced at different places: German process, Elberfeld process, M. Hausmann process, French process by M. Vitalis, Process of Messrs. Montieth and Co. and Improved French process.



1849. The dyer and colour maker's companion, Glasgow: William Mackenzie

Describes method for preparing cloth for Turkey red dyeing and gives recipes for producing white, yellow, green, blue and black discharges on Turkey red.



1860. C. O'Neill, A dictionary of calico printing and dyeing : containing a brief account of all the substances and processes in use in the arts of printing and dyeing textile fabrics

Gives a very brief overview of Turkey red process.



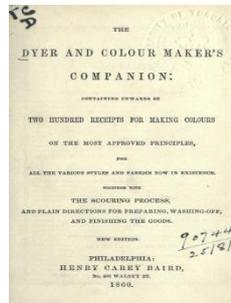
1860. S. Muspratt, E.N. Horsford, Chemistry, theoretical, practical, and analytical: as applied and relating to the arts and manufactures, London: W. Mackenzie

Section on Turkey red begins with brief details on its historical journey followed by description of Turkey red processes practiced in Glasgow and France. Further, it provides rationale of the Turkey-red Process explaining the action of the different ingredients employed.

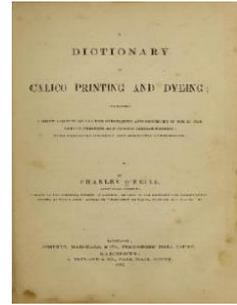


1860. The dyer and colour maker's companion: containing upwards of two hundred receipts for making colours on the most approved principles, for all the various styles and fabrics now in existence. New ed. Philadelphia: Henry Carey Baird.

Gives very brief details of preparation of cloth for Turkey red dyeing followed by recipes for white, yellow, green, blue and black discharge for printing of Turkey red.



1862. C. O'Neill. A dictionary of calico printing and dyeing: containing a brief account of all the substances and processes in use in the arts of printing and dyeing textile fabrics. Manchester: A. Ireland and Co.



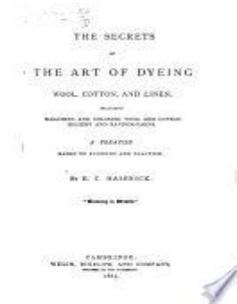
Provides a brief general illustration of Turkey red process. Mentions increased usage of garancine in Turkey red dyeing during the period. See also for explanation of terms such as red liquor, dung substitute etc. Also give a description of various types of discharges on Turkey red.

1869. D. Bremner, The industries of Scotland; their rise, progress, and present condition. Edinburgh: Adam and Charles Black



A chapter entitled 'Calico-Printing and Turkey-Red Dyeing' provides an overview of introduction and progress of calico printing and Turkey red dyeing in Europe, especially in British context.

1869. E.C. Haserick, The Secrets of the Art of dyeing Wool, Cotton, and Linen, including bleaching and coloring Wool and Cotton Hosiery and Random-yarns. A Treatise based on Economy and Practice. Cambridge: Welch, Bigelow, and Company



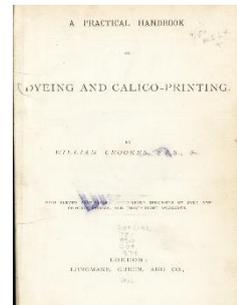
Provides details of eleven operation Turkey red process practiced in Elberfeld, Prussia.

1872. W.B. Dick, Encyclopedia of practical receipts and processes, containing over 6400 receipts; embracing thorough information, in plain language, applicable to almost every possible industrial and domestic requirement, New York, Dick & Fitzgerald



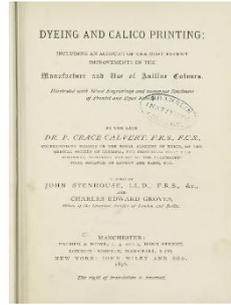
The section of Art of dyeing gives details of French process of dyeing Turkey red.

1874. W. Crookes, A practical handbook of dyeing and calico-printing. With eleven page-plates, forty-seven specimens of dyed and printed fabrics, and thirty-eight woodcuts, London: Longmans, Green.



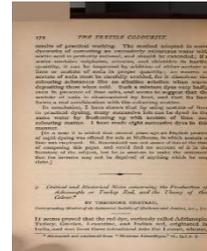
Provides critical overview of Turkey red process and its chemistry citing experiments of contemporaries. Also contains Turkey red samples dyed with madder and alizarin.

1876. F.C. Calvert, Dyeing and calico printing; including an account of the most recent improvements in the manufacture and use of aniline colours. John Stenhouse and Charles Edward Groves (Eds.) 2nd Ed. Manchester: Palmer and Howe



This text provides an outline of the Turkey red process as practiced in Manchester and Glasgow during the period along with samples of Turkey red as dyed, Turkey red after first clearing and Turkey red finished provided by Messrs. Steiner and Co.

1876. T. Chateau, Critical and Historical Notes Concerning the Production of Adrianople or Turkey Red, and the Theory of This Colour. *The Textile Colourist*, 1: 172-178.



In first of eight part series of articles, Chateau gives historical account of origin of Turkey red and its migration to Europe.

1876. T. Chateau, Critical and Historical Notes Concerning the Production of Adrianople or Turkey Red, and the Theory of This Colour. Ed. Charles O'Neill. *The Textile Colourist* 1: 217-231.



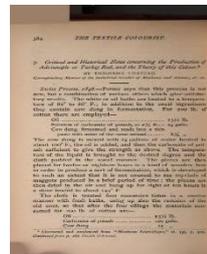
In next three parts Chateau describes the details of processes of Turkey red dyeing at various places and by different dyers. This section gives details of Greek or Levantine process, Armenian process, Turkish process, Grecian process by Felix, Early French processes, Papillon process, Haussman process, Vogler process, Gmelin process and Chatpal process.

1876. T. Chateau, Critical and Historical Notes Concerning the Production of Adrianople or Turkey Red, and the Theory of This Colour. *The Textile Colourist* 1: 276-282.



Gives details of four process of Turkey red dyeing - Koechlin process, Vitalis process, Dumas process and Fries process.

1876. T. Chateau, Critical and Historical Notes Concerning the Production of Adrianople or Turkey Red, and the Theory of This Colour. *The Textile Colourist* 1: 384-397.



Gives details of Swiss process, Mercer and Greenwood process, Steiner process, Gastard process, Bernard process, Cardiner process, Rance process, Russian process and modern process by Schutzenberger.

1876. T. Chateau, Critical and Historical Notes Concerning the Production of Adrianople or Turkey Red, and the Theory of This Colour. *The Textile Colourist 2: 27–33.*

Describes use of oil in Turkey red dyeing and various processes of preparing the oil.

1876. T. Chateau, Critical and Historical Notes Concerning the Production of Adrianople or Turkey Red, and the Theory of This Colour. *The Textile Colourist 2: 131–141.*

Comments on theory of Turkey red dyeing based on opinions of Pallas, Alpigny, Chatpal, Bancroft, Vutich, Dingler and Vitalis.

1876. T. Chateau, Critical and Historical Notes Concerning the Production of Adrianople or Turkey Red, and the Theory of This Colour. *The Textile Colourist 2: 191–200.*

Provides accounts of Dumas, Persoz, Weisberger and Schutzenbeger's observations on theory of Turkey red dyeing.

1876. T. Chateau, Critical and Historical Notes Concerning the Production of Adrianople or Turkey Red, and the Theory of This Colour. *The Textile Colourist 2: 262–272.*

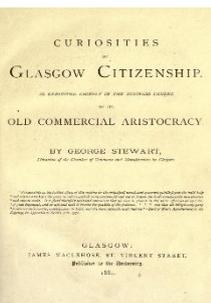
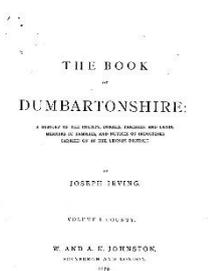
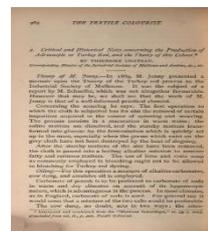
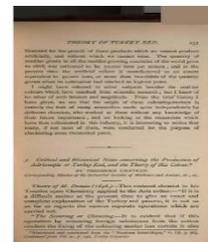
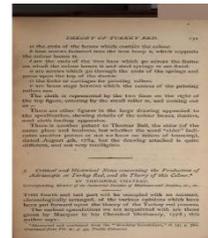
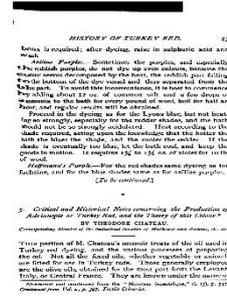
Continues to discuss theory of Turkey red dyeing based opinions of Henry, Wartha, Muller and M. Chateau and gives his conclusions on observations of different methods of dyeing and theory of dyeing.

1879. Joseph Irving, The Book of Dumbartonshire: A history of the county, burghs, parishes, and lands, memoirs of families, and notices of industries carried on in the Lennox district. Edinburgh: W. and A. K. Johnston

A chapter entitled 'Vale of Leven Industries: Turkey-red dyeing and printing' discusses industrial history and progress of the art of Turkey-red dyeing on the banks of the river Leven.

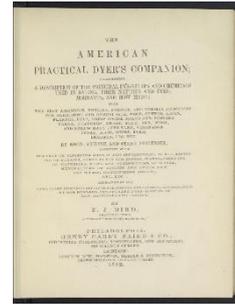
1881. G. Stewart, Curiosities of Glasgow citizenship; as exhibited chiefly in the business career of its old commercial aristocracy. Glasgow: J. Maclehouse

See for story of Turkey red journey and people involved in establishment of Turkey red industry in Glasgow: David Dale of Rosebank, George Macintosh of Dunchattan, James Monteith of Anderston.



1882. F.J. Bird, *The American practical dyer's companion*, Philadelphia: Henry Carey Baird & Co.

Gives a method for dyeing twist Turkey red by means of alizarin.



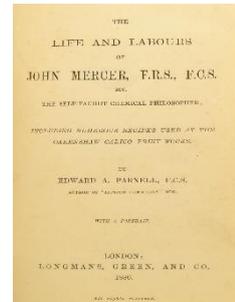
1885. A. Sansone, *Alizarin-Red and Turkey Red Dyeing and Printing on Cotton*. *Journal of the Society of Dyers and Colourists* 1 (8): 203–11.

Sansone describes the present state of Turkey red dyeing, which at that time had recently adjusted to the 'new' process. He also proposes potential structures for the colour complex, discusses dye sources, and hypothesises about the chemistry of the process.



1886. *The life and labours of John Mercer, F.R.S., F.S.C. etc., the self-taught chemical philosopher: including numerous recipes used at the Oakenshaw Calico Print-Works, London : Longmans, Green*

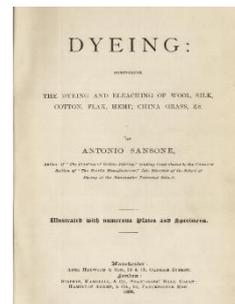
A chapter entitled 'On Turkey red, madder and garancin' comments on Mercer's experimentations on simplifying and shortening the process. The appendix at the end gives specification of patents granted to John Mercer and John Greenwood for 'certain improvements in dyeing and printing Turkey red and other colours' in 1846 and 'improvements in the oiling process in Turkey red dyeing' in 1852.



1888. A. Sansone, *Dyeing: comprising the dyeing and bleaching of wool, silk, cotton, flax, hemp, china grass &c.* Vol 1 and Vol. 2. Manchester : Abel Heywood & Son

Vol. 1 gives a brief overview of a 7-step Turkey red process using caustic soda, alizarin oil, acetate of alumina, chalk, cow dung, alizarin and sumach.

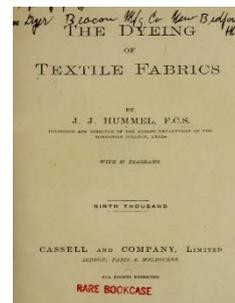
Vol. 2 contains samples of Turkey red.



1885. J.J. Hummel, *The Dyeing of Textile Fabrics*. London: Cassell & Company, Limited.

(First Ed. Sept. 1885, Reprinted April 1886, 1888, 1890, 1893, 1896, 1898)

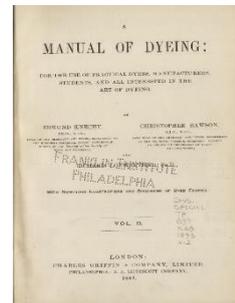
This book provides the most illustrative description of Turkey red process with fine details of ingredients, process conditions and machinery used. Though some specific details related to amount of alum and sodium carbonate used in different steps is missing. Hummel describes three different methods for producing Turkey red using alizarin: Emulsion process for dyeing 500 kilos. of Turkey-red yarn;



Steiner's process for dyeing 500 kilos. of Turkey-red cloth; and Sulphated oil process for dyeing 500 kilos. of yarn or cloth. Also gives details of machinery used in the process with drawings.

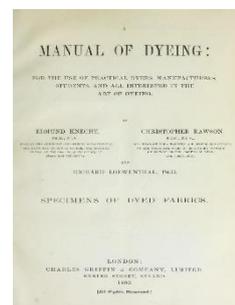
1893. E. Knecht, Christopher Rawson, and Richard Loewenthal. A Manual of Dyeing. Vol. 2. London: Charles Griffin & Company, Limited.

Knecht provides a brief overview of the process under the heading 'Turkey-Red (Adrianople Red; Indian Red)' followed by details of three different TR methods: I. Old Process or Emulsion Process, II. Steiner's Process for Turkey-Red on Cotton Piece Goods and III. New Turkey-Red Process (for Yarn and Piece Goods).



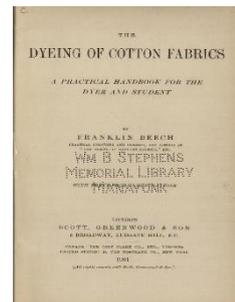
1893. E. Knecht, R. Christopher, R. Loewenthal. A Manual of Dyeing. Vol. 3. London: Charles Griffin & Company, Limited.

Two samples of dyed TR red in Pattern Sheet No. 7 Cotton: No. 37. Turkey red (Before oiling and steaming) and No. 38 Turkey red (After oiling and steaming).



1901. F. Beech, The dyeing of cotton fabrics - a practical handbook for the dyer and student. London: Scott, Greenwood & Son.

Describes two process for dyeing Turkey red; a 12-step process using Gallipoli oil and a 7-step process using alizarine oil or Turkey-red oil. Suggests use of phosphate of soda in place of sheep dung for preparing green liquor used in 'old' process.



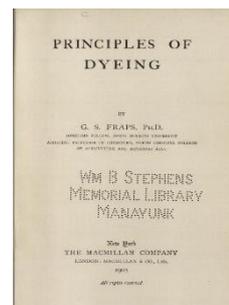
1902. G. von Georgievics, Chemical Technology of Textile fibers, London: Scott, Greenwood.

The section on 'Turkey red dyeing' begins with brief historical overview, followed by chemistry of Turkey red lake formation and preparatory step and overview of old and new Turkey red processes. A section on Turkey-red discharge style describes two methods for the discharge of Tukey red – the 'cuve decolorante' (decolorising vat) introduced by D. Koechlin and the caustic soda discharge.



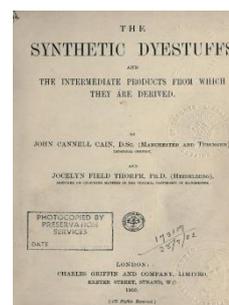
1903. G.S. Fraps, Principles of dyeing. New York: The Macmillan Company.

Brief description of new Turkey-red process using Turkey red oil, alum, sodium carbonate, chalk and alizarin in nine steps- boiling off, oil preparing, stoving, chalking, dyeing, second oil preparing, steaming and clearing.



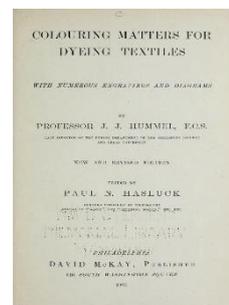
1905. J.C. Cain, J.F. Thorpe, The synthetic dyestuffs and the intermediate products from which they are derived. London: Charles Griffin and Co. Ltd.

Describes method for producing Turkey red using Turkey red oil for oiling, aluminium acetate as mordant and alizarin as dye.



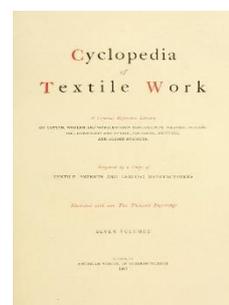
1906. J.J. Hummel, A. R. Foster, P.N. Hasluck, Colouring matters for dyeing textiles, Philadelphia: David McKay

Descriptions of Turkey red process same as in 'The Dyeing of Textile Fabrics' by J.J. Hummel.



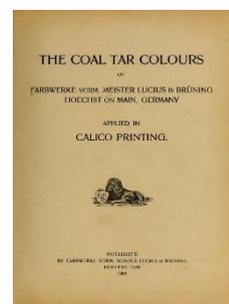
1907. Cyclopedia of textile work : a general reference library on cotton, woollen and worsted yarn manufacture, weaving, designing, chemistry and dyeing, finishing, knitting, and allied subjects, Vol. VI, Chicago : American school of correspondence

Give brief overview of a 13 step emulsion or old process and a 9 step the Turkey red oil or new process for Turkey red dyeing with alizarin paste.

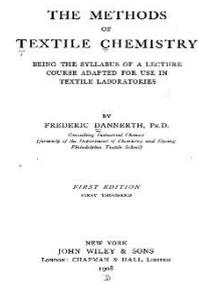


1908. Farbwerke vorm. Meister Lucius & Brüning, The coal tar colours of Farbwerke vorm. Meister, Lucius & Brüning, Hoechst on Main, Germany, applied in calico printing, Hoechst o/M

Provides a new red process for dyeing Turkey red with Turkey red oil and alizarin. Also gives methods of discharging Turkey red by means of chloride of lime, glucose alkali process and hydrosulphite-caustic soda process with examples of printed fabric samples.



1908. F. Dannerth, The methods of textile chemistry; being the syllabus of a lecture course adapted for use in textile laboratories. New York: John Wiley & Sons



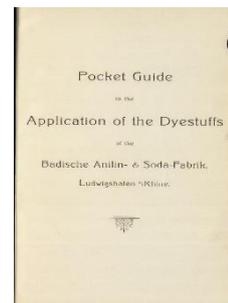
A section under heading Turkey red starts with comments on chemical control of the materials used in the turkey-red dyehouses followed by brief description of Old Style or Emulsion Method and New Style or Sulphated Oil Method. Describe different tests for examination of the bleached goods before dyeing, detection and determination of aluminium, calcium, and tin in the finished fabric, examination of the red for purity of shade, fastness of the red to various agencies and tests to distinguish turkey-red from other cotton reds.

1911. W.S. Carruthers, A New Process of Dyeing Turkey Red. Journal of the Society of Dyers and Colourists 27 (5): 123–26.



Carruthers describes a new process for dyeing Turkey Red and various other Alizarin dyestuffs discovered and patented by Mr. Rene Ott and the firm of Messrs. F. Bayer & Co., Elberfeld.

1911. Pocket guide to the application of the dyestuffs of the Badische Anilin- & Soda-Fabrik, Ludwigshafen o/Rhine, New York : Badische Company



Provides Turkey red process as new red, old red and simplified Turkey red process using alizarin as dye.

1912. E. Knecht, J.B. Fothergill, The principles and practice of textile printing, London : Charles Griffin



Detailed comments on mordant, oils and other substances used in Turkey red dyeing. Gives a summary of a method used on large scale for the production of a bluish Turkey red dyed with alizarin specially for discharging and a method of Turkey red dyeing patented by Erban and Spetch. Also gives details of acid and alkali discharge on Turkey red dyed cloths with examples of printed fabrics.

1962. R.A. Peel, Turkey red dyeing in Scotland: its heyday and decline, 68 (12) 496-505.

Peel discusses rise and fall of Turkey red industry in Scotland. Provides a critical overview of transformation of Turkey red process over time giving description of technical advancements through old to new processes.



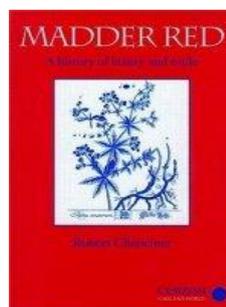
1989. J. Lopez, The transition from natural madder to synthetic alizarine in the American textile industry, 1870-1890. Ph.D. Thesis, Iowa State University.

Comments on historical journey of Turkey red and transition from natural madder, garancine and synthetic alizarin in the industry.



2000. R. Chenciner, Madder Red: A History of Luxury and Trade, Richmond: Curzon

A chapter entitled 'secret recipes of Turkey red' gives historical details, process of dyeing and trading.



2007. R.Karadag, E. Dolen, Re-examination of Turkey red, Annali di Chimica 97(7): 583-589.

Investigates the amount of the dyestuffs bound to mordanted cotton fibre and impact of number of oiling treatment of the cotton yarn in reconstructed Turkey red by using TLC (thin layer chromatography) and spectrophotometry.

[Link](#)

2010. W.T. Johnston, The secret of Turkey red – technology transfer with a Scottish connection, Biotechnic & Histochemistry 85(5):295-303.

Presents a historical account of Turkey red technology transfer in Scottish context. Also gives details of Papillon's TR process.

[Link](#)

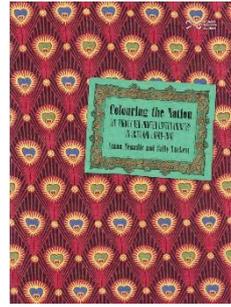
2012. S. Tuckett, S. Nenadic, Colouring the Nation: A New In-Depth Study of the Turkey Red Pattern Books in the National Museums Scotland, Textile History 43(2): 161-182.

Gives a brief overview of TR industry in Scotland, followed by details of Turkey red collection at National Museums Scotland and interpretation of pattern books.

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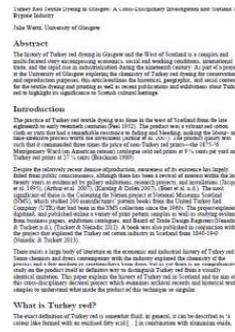
2013. S. Nenadic, S. Tuckett, *Colouring the Nation: The Turkey Red Printed Cotton Industry in Scotland, c.1840-1940*. National Museums of Scotland: Edinburgh

Tells the history of the TR industry with examples of fabrics from archive of Turkey red patterns at National Museums Scotland.



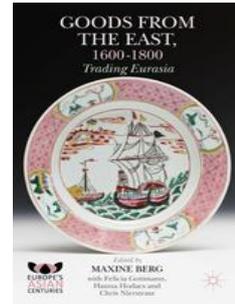
2014. J. Wertz, Turkey red textile dyeing in Glasgow: a cross-disciplinary investigation into Scotland's bygone industry. *Scottish Business and Industrial History*, 29:74-97.

Outlines the historical, geographic, and social context Turkey red to highlight its significance to Scottish cultural heritage.



2015. O. Raveux, *The Orient and the Dawn of Western Industrialization: Armenian Calico Printers from Constantinople in Marseilles (1669–1686)*, in: M. Berg, F. Gottmann, H. Hodacs, C. Nierstrasz (Eds.), *Goods from the East, 1600-1800: trading Eurasia*. Springer.

Describes transfer of Turkey red techniques from East to West.



2015. H. Martinsen, *Fashionable Chemistry: The History of Printing Cotton in France in the Second Half of the Eighteenth and First Decades of the Nineteenth Century*, Ph.D. Thesis, University of Toronto.

Provides historical and account and developments in Turkey red industry in French context.

[Link](#)

2017. S. O. Demirkan, *Rebirth of Turkey red, Scandinavian Weaving Magazine*, 4: 18-21

Gives an outline of history of Turkey red and research in Cultural Heritage preservation and Natural dyes laboratory in Istanbul for its recreation for modern industrial practices.

[Link](#)

2017. J.H. Wertz, *Turkey red dyeing in late-19th century Glasgow: Interpreting the historical process through re-creation and chemical analysis for heritage research and conservation*. PhD thesis, University of Glasgow.

Presents a multi-disciplinary investigation of the chemistry of TR textiles and processes in the context of 19th c. Scotland using historical material re-creations and modern analytical chemistry.

[Link](#)

2017. J.H. Wertz, A. Quye, D. France, P.L. Tang, L. Richmond, Authenticating Turkey red textiles through material investigations by FTIR and UHPLC, ICOM-CC 18th Triennial Meeting Preprints.

Presents an idea of authenticating Turkey red based on the presence of an oil treatment on the cotton through non-invasive Fourier transform infrared (FTIR) spectroscopy and micro-analysis by ultra-high-performance liquid chromatography (UHPLC).



2017. J.H. Wertz, A. Quye, D. France. Taking historical chemistry to the bench: A new perspective for modern chemists through the re-creation and analysis of 19th-century Scottish Turkey red dyed textiles. *Mitteilungen: Gesellschaft Deutscher Chemiker*, 25: 302-328.

Gives historical overview of TR dyeing in Europe in general and Scotland in specific context. Describes 'old' and 'new' TR process and chemistry, followed by historical recreation and analysis of reconstructed TR. Also gives historical overview of alizarin synthesis and laboratory recreation of synthetic alizarin following historical methods.



2018. J.H. Wertz, P.L. Tang, A. Quye, D.J. France, Characterisation of oil and aluminium complex on replica and historical 19th c. Turkey red textiles by non-destructive diffuse reflectance FTIR spectroscopy, *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, 204: 267-275.

Presents an investigation on historical and replica TR textiles with diffuse reflectance infrared (DRIFT) spectroscopy to study the coordination complex between cellulose, fatty acids, and the aluminium ions that form the basis of the colour lake.



2018. J.H. Wertz, A. Quye, D. France, Turkey red prints: Identification of lead chromate, Prussian blue and logwood on Turkey red calico. *Conservar Património: Studies in Historical Textiles*

Provides analytical evidence for use of lead chromate, Prussian blue, and logwood for creating the distinctive prints on Turkey red calico from the 19th c.



Acknowledgement



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