



AperTO - Archivio Istituzionale Open Access dell'Università di Torino

An English medieval embroidered folded almanac: identification of the dyes

This is the author's manuscript	
Original Citation:	
Availability:	
This version is available http://hdl.handle.net/2318/1720678	since 2019-12-27T19:37:17Z
Publisher:	
DHA36	
Terms of use:	
Open Access	
Anyone can freely access the full text of works made available as under a Creative Commons license can be used according to the t of all other works requires consent of the right holder (author or protection by the applicable law.	erms and conditions of said license. Use

(Article begins on next page)

An English medieval embroidered folded almanac: identification of the dyes

Elisa Calà^{1*}, Maurizio Aceto¹, Monica Gulmini², Ambra Idone², Patrizia Davit², Annalisa Salis³, Gianluca Damonte³, Stefania Signorello⁴, Elma Brenner⁴, Jacqui Carey⁵

¹Dipartimento di Scienze e Innovazione Tecnologica, Università degli Studi del Piemonte Orientale, viale T. Michel, 11 – 15121 Alessandria, Italy

²Dipartimento di Chimica, Università degli Studi di Torino, via P. Giuria, 7 - 10125 Torino, Italy

³Center of Excellence for Biomedical Research (CEBR), Università degli Studi di Genova, viale Benedetto XV, 5 - 16132 Genova, Italy

⁴Wellcome Collection, 183 Euston Road – London NW1 2BE, United Kingdom

⁵Carey Company, Summercourt Ridgeway – Ottery St. Mary EX11 1DT, United Kingdom

*elisa.cala@uniupo.it

The folded almanac MS.8932, written in Latin and produced in England around 1400, is a remarkable artefact. Astronomy and astrology played a significant role in medieval life, and calendars, based on Metonic cycles, enabled the sun and moon's movements to be predicted. Almanacs containing these calendars became increasingly popular with a wide range of users, including the clergy who used them to forecast the dates of religious festivals, and medical practitioners who related celestial activity to health.

MS.8932, previously in a private collection, was purchased by the Wellcome Library in London in 2013. It is a small book (H160 x W38 x D21 mm) consisting of eight vellum leaves sitting within an embroidered binding. The leaves are joined at their extended tabs and folded three times to fit within the covers. Few examples of this type of medieval folded manuscript have survived. It was probably worn hanging from a belt. On the opening page, John Somer identifies himself as the author and his text contains a calendar with additional information, including the Zodiac Man, a diagram depicting the association of the signs of the zodiac with specific parts of the human body. The brief but practical nature of the text suggests its use as a working manual. On the other hand, MS.8932's exquisite embroidered binding is unique and indicates a prestigious artefact. Each cover is made of three layers: woollen fabric, vellum and linen embroidered with silk, all stitched together around the edge. Braids sewn down the middle may once have extended out beyond the binding, to fasten the almanac and create an attaching handle. The study of medieval embroidery has been limited by its poor survival rate. MS.8932 therefore presents an unrivalled opportunity to learn more about bindings, embroidery and production methods dating from the medieval period.

The identification of the dyes in the embroidery was achieved by means of micro-invasive techniques such as Surface Enhanced Raman Spectroscopy (SERS) and HPLC-MS. Despite the small size of the micro samples (less than 2 mm of very thin threads), it was possible to identify orchil for pink hues, indigo/madder double dyeing with aloe (possibly used as mordant and/or as antibacterial agent) for purple hues, and indigo/weld double dyeing for green hues. This information will enable comparisons to be made, helping to situate the artefact and understand its significance.