Supplementary Material S1: The Use of Scanning XRF to Map the Reduction of Foxing Stains on Paper with Chelating Agents

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S1. Introduction

Two areas of the print with large amounts of foxing were selected for examination and analysis by scanning XRF (Figure S1). Areas along the edge of plate mark were selected to allow for easier orientation of repeated measurements.

Additional images of the print, including photographs taken under UV illumination and photomicrographs, are given in section S2. Additional scanning XRF results for the larger area, the subject of the main article, are presented in section S3.



Figure S1. Overall view of *The Cornfield* (E.776-1991) before treatment, showing locations of the two areas analysed with scanning XRF (within black borders).

S2. Additional images

Extra images of the print, including photographs taken under UV illumination and photomicrographs, omitted from the main article for reasons of space, are provided here.



Figure S2. Overall view of the print, before treatment (left) and during treatment (right).

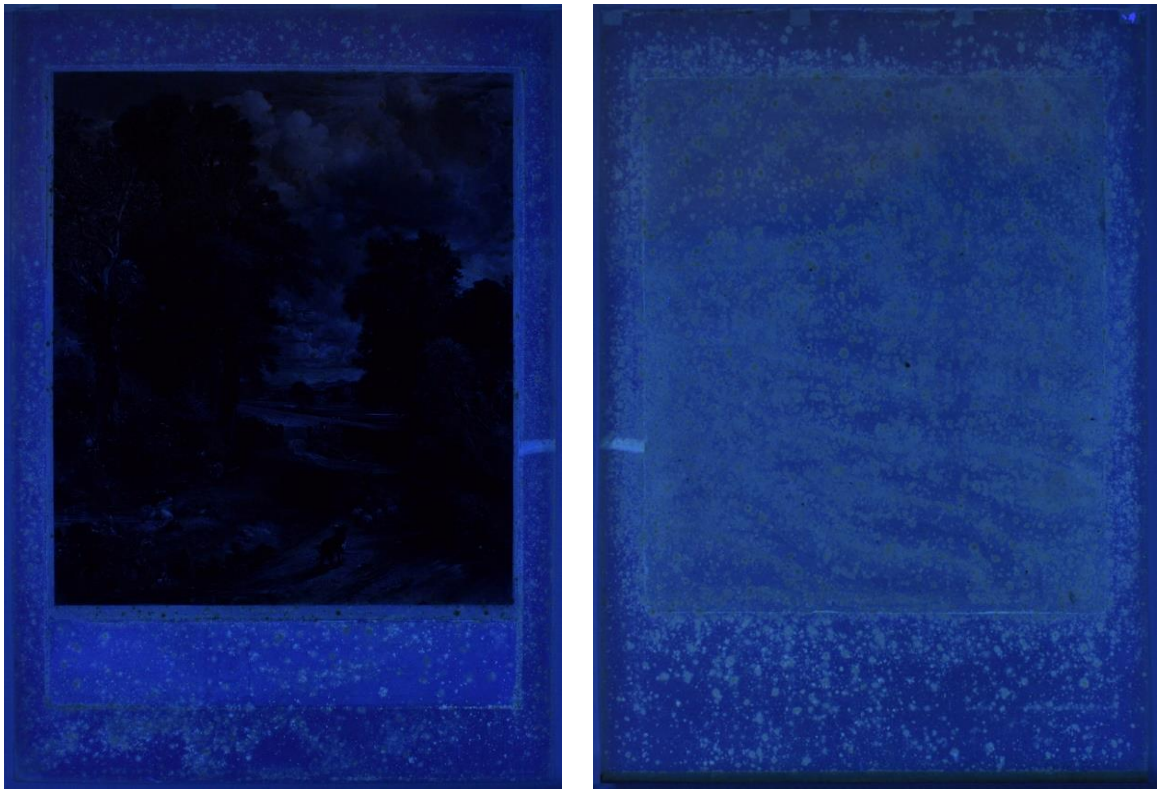


Figure S3. Recto (left) and verso (right) of the print, under ultraviolet illumination, before treatment.



Figure S4. Detail of the upper right corner of the print, before treatment. Images was acquired using a Hirox HRX-01 digital microscope mounted on a flexible arm stand. The images were captured using a wide-range objective, with a ring LED light for illumination, and were processed with the HRX-01 software and Adobe Photoshop.

S3. Additional Scanning XRF Results from Main Scan

An area at the upper right of the print, measuring 65 mm x 65mm, was analysed before, during, and after treatment (Figure S5). Scanning XRF parameters used for this analysis are given in the main body of the article (section 2.3).

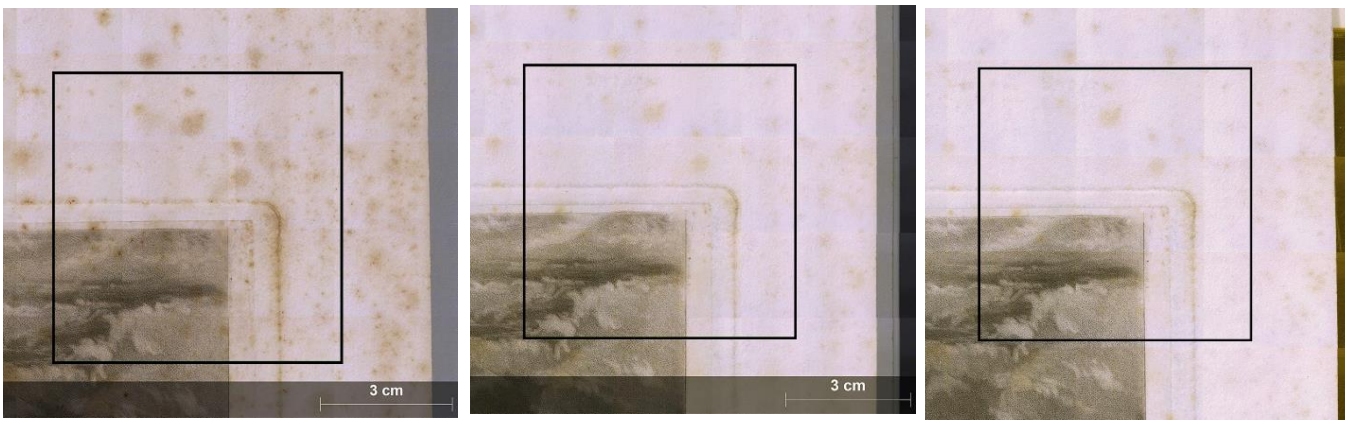


Figure S5. Top right corner of the print, showing area of scanning XRF analysis (within black border), before treatment (left), during treatment (centre) and after treatment (right).

Copper and zinc appeared to be present both as individual elements and combined (i.e. as brass) (Figure S6).

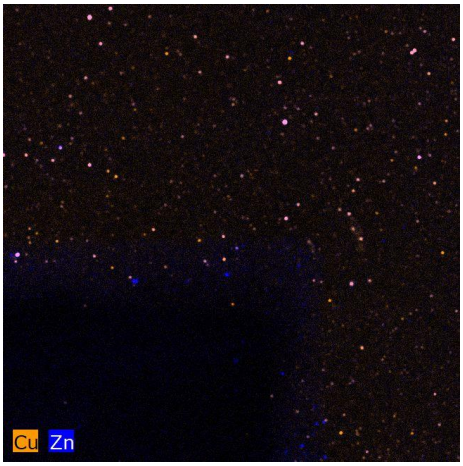


Figure S6. Elemental distribution map of copper (Cu Kα) and zinc (Zn Kα) before treatment. Spots where both elements are present appear pink.

Copper decreased during the course of treatment (Figure S7).

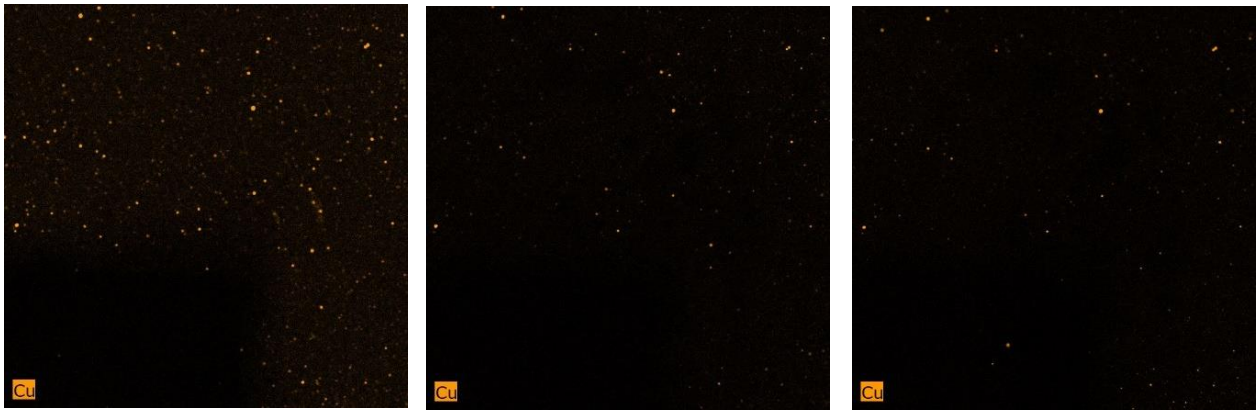


Figure S7. Elemental distribution map of copper (Cu Kα), before treatment (left) and during treatment (right).

Zinc, although minor to begin with, also decreased (Figure S8).

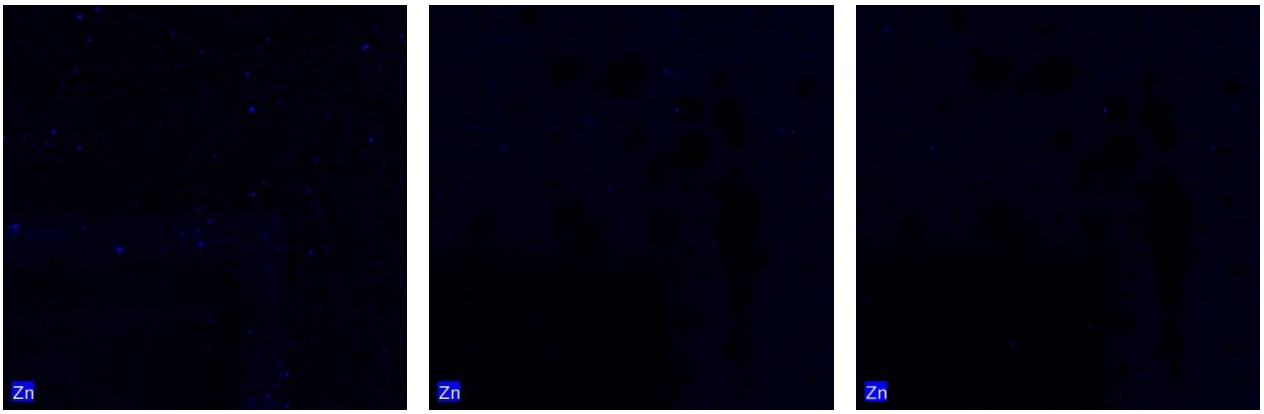


Figure S8. Elemental distribution map of zinc (Zn Kα), before treatment (left) and during treatment (right).