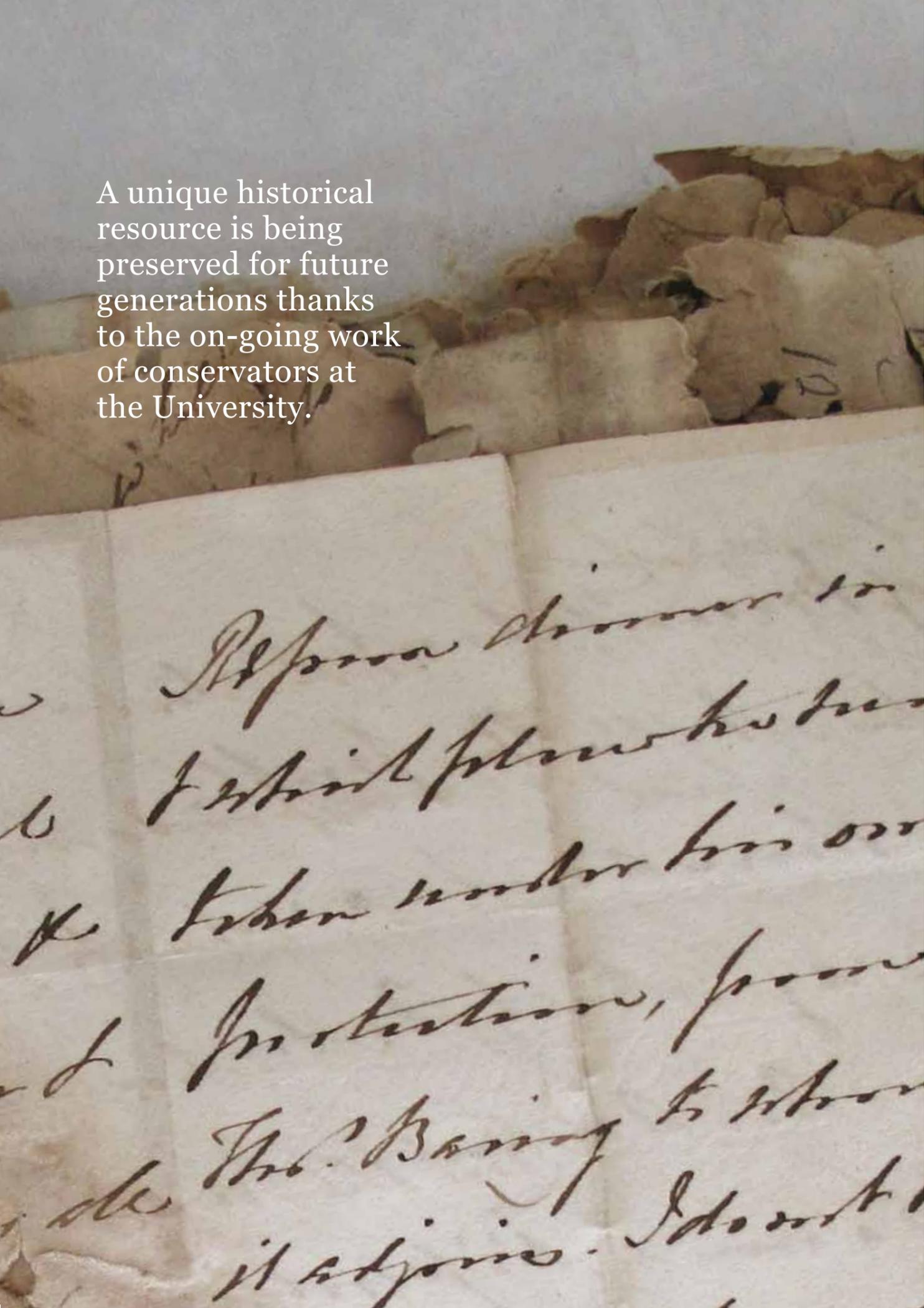




Safeguarding the
Wellington Archive



A unique historical resource is being preserved for future generations thanks to the on-going work of conservators at the University.

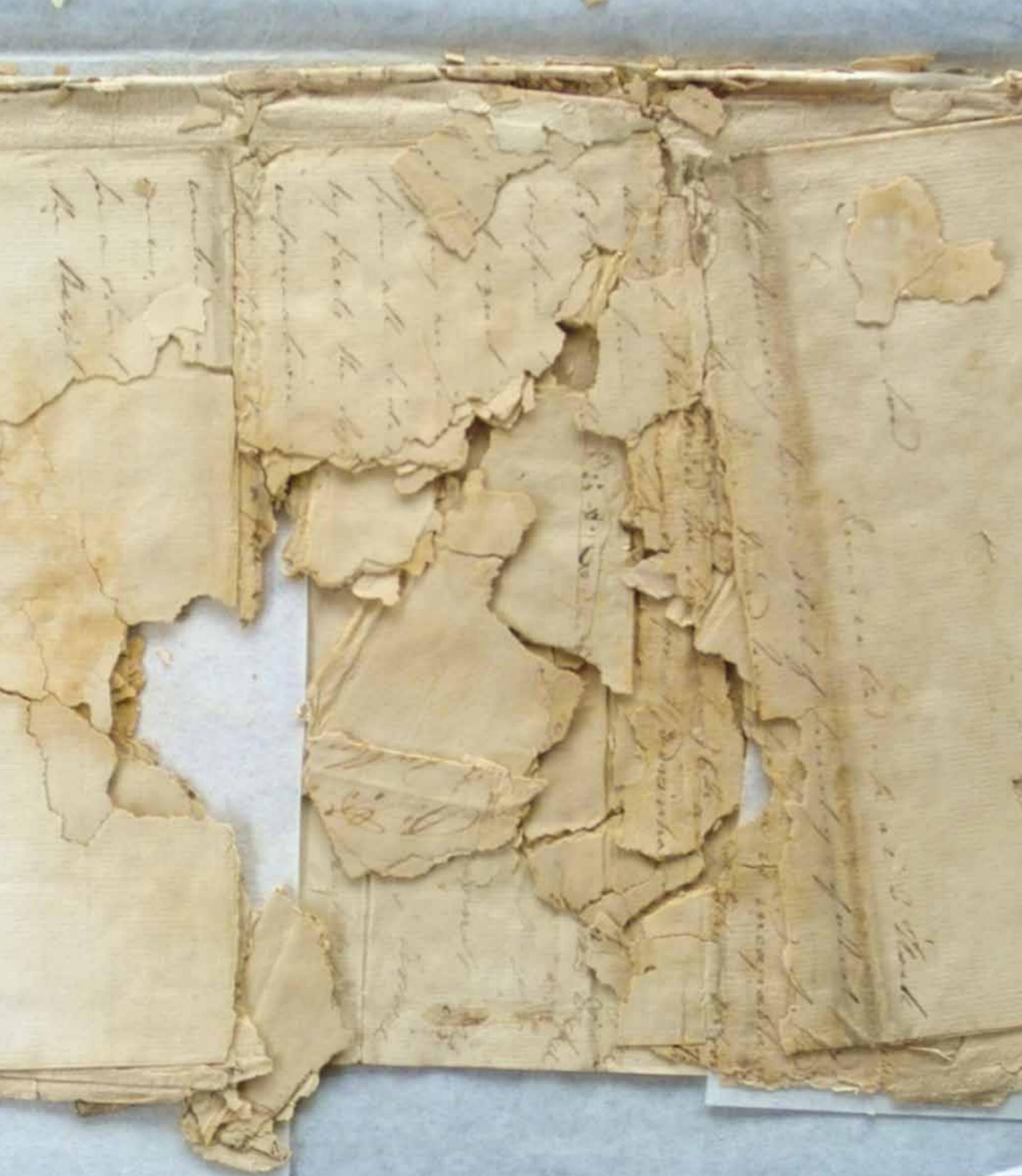
Introduction

The Wellington Papers are an archive from the great age of government by correspondence. The collection contains some 100,000 letters to and from Arthur Wellesley, first Duke of Wellington (1769–1852). When the papers were allocated to the University in 1983 under the national heritage legislation, it came with a major burden of conservation: some 10% of the archive was too fragile to handle. Paper is susceptible to many hazards — water, mould, vermin, all have made an impact on the collection. As early as 1815, part of the archive was damaged in a shipwreck in the Tagus, when the vessel bringing back Wellington's papers sank as it crossed the bar leaving Lisbon. Many parcels of letters were delivered to George Canning, the British ambassador in Portugal, and other British officials, and Canning 'endeavoured to quicken the zeal of finders by promises of reward'. One package had passed through the hands of the Portuguese government, although the ambassador was unclear whether it had contained anything to gratify their curiosity. Seawater is not the best preservative of paper: many items were either completely lost at that stage or have become more susceptible to deterioration because of the damage they sustained in 1815.

fragmented bundles

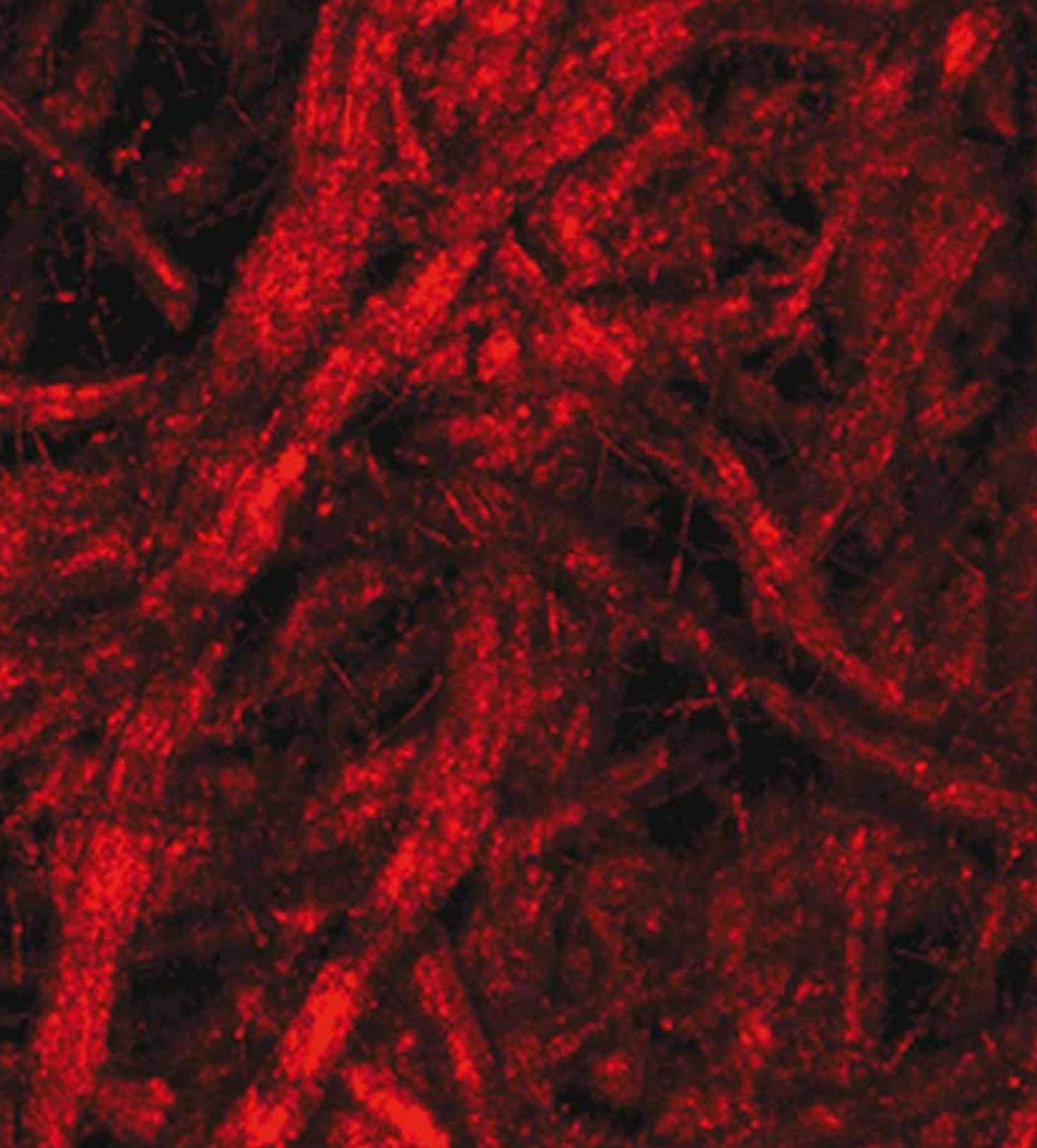
By the late nineteenth century, much of the correspondence was arranged in tightly-folded bundles in chronological order, month by month. Some of these bundles are now badly damaged and very fragile. Most of this damage is the result of storage in a damp environment during World War II. Mould growth has severely weakened and stained the paper, leaving some letters in a fragmentary state. The pattern of damage through the bundles is the consequence of the way in which they were stored, with mould typically occurring along the side or fold of the paper on which the bundle was resting. Certain years have been damaged — 1822, 1829 and 1832 — and within 1822, only bundles of letters to the Duke, and not those from him, have been affected.



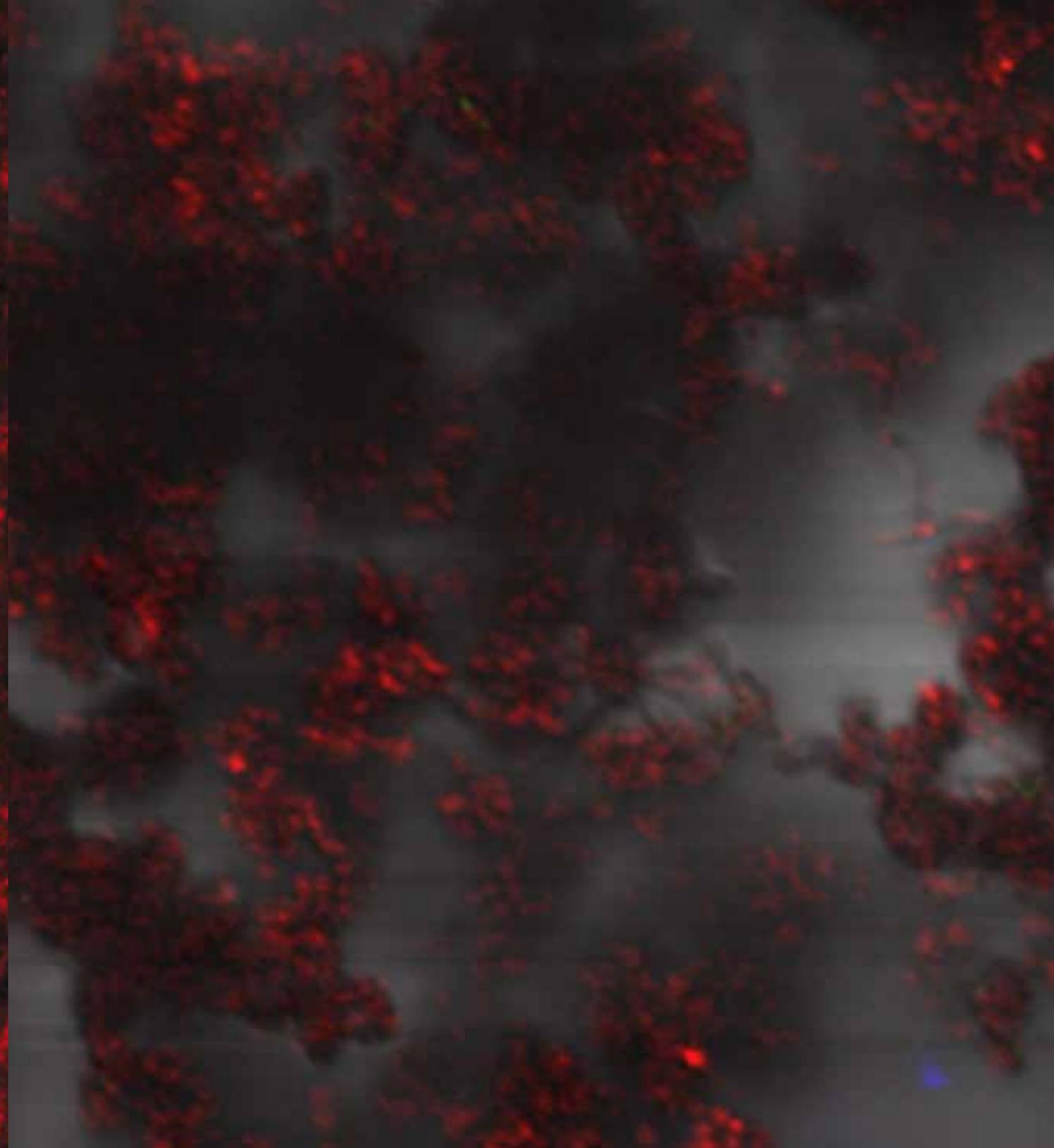


fused paper

A number of bundles from 1809 and 1811, the period of the Peninsular War, had been unfolded and interleaved with twentieth-century lined paper. Original papers and interleaving sheets are now both severely weakened due to fungal growth. This has penetrated through the layers of paper, causing areas to fuse together. Microscopic examination shows the long thin filaments of the fungal structure intertwined with the paper fibres.



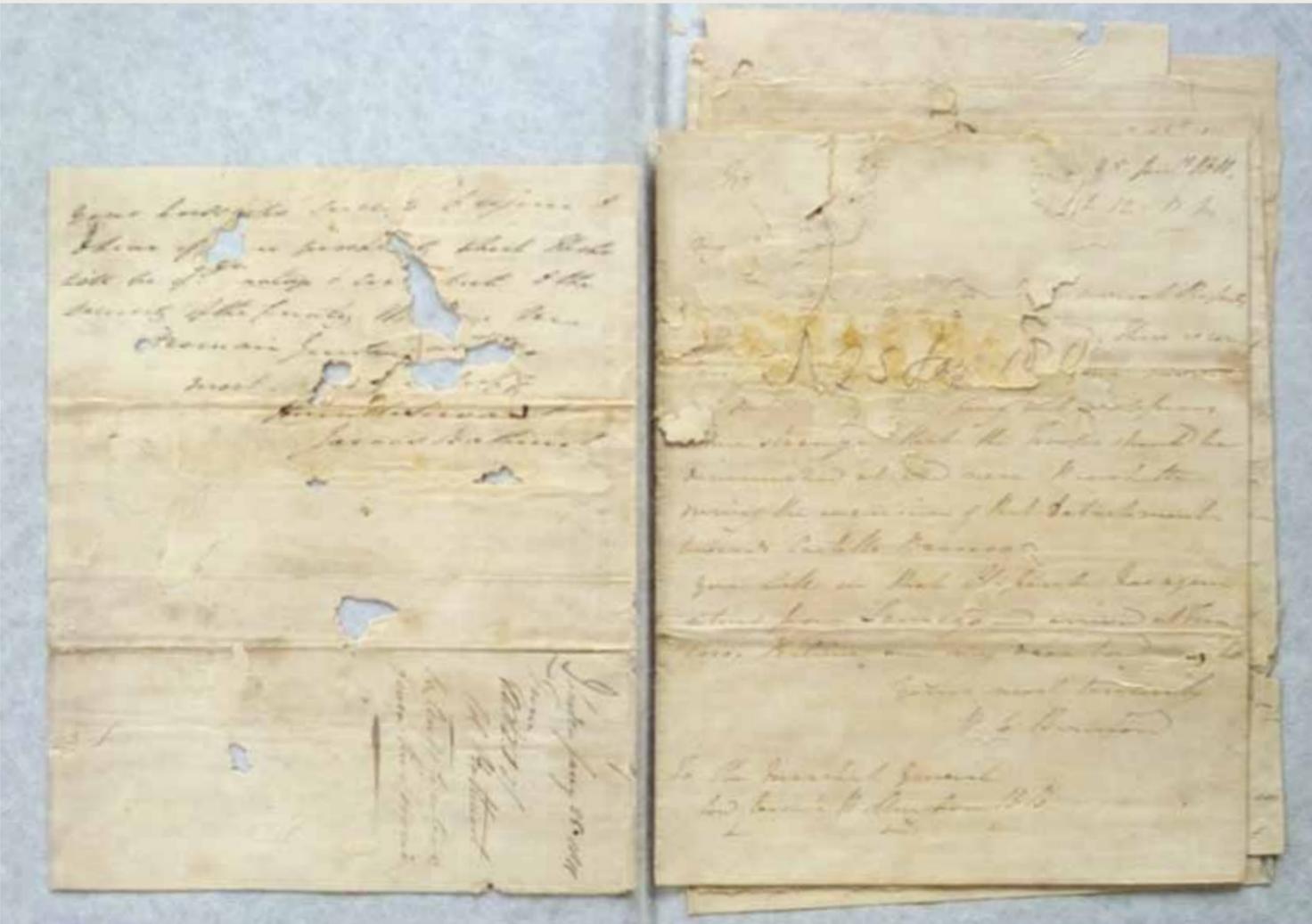
microscopic image of mould infected paper



microscopic image of mould spores



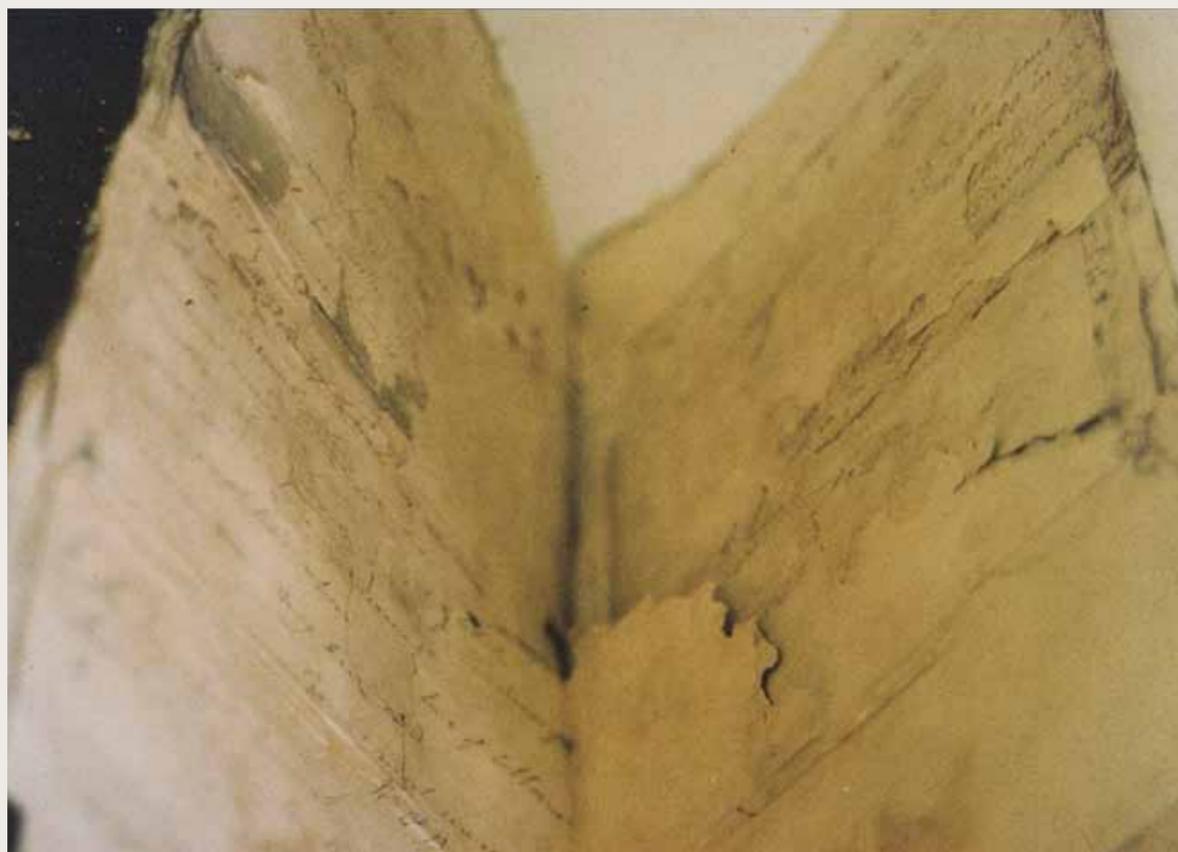
the outer boards of an unfolded bundle



fused, mould damaged paper

treating the papers: separation

In some bundles, documents have fused together, possibly the result of a combination of storage under pressure while damp and mould growing down through the paper layers. Separation of the papers is carried out in stages.



Stage 1 Bundles are broken down where possible into smaller sections and left over a period of time — 6 months, 1 year, 2 years — to alleviate pressure.

Stage 2 Some documents can be separated dry by inserting sable brushes between the leaves to aid release.

Stage 3 Other documents are separated using an ultrasonic humidifier and steam pencil. This method was tested on old interleaving papers removed from the bundles. It was found to be a useful technique for separating the less damaged and thicker papers,

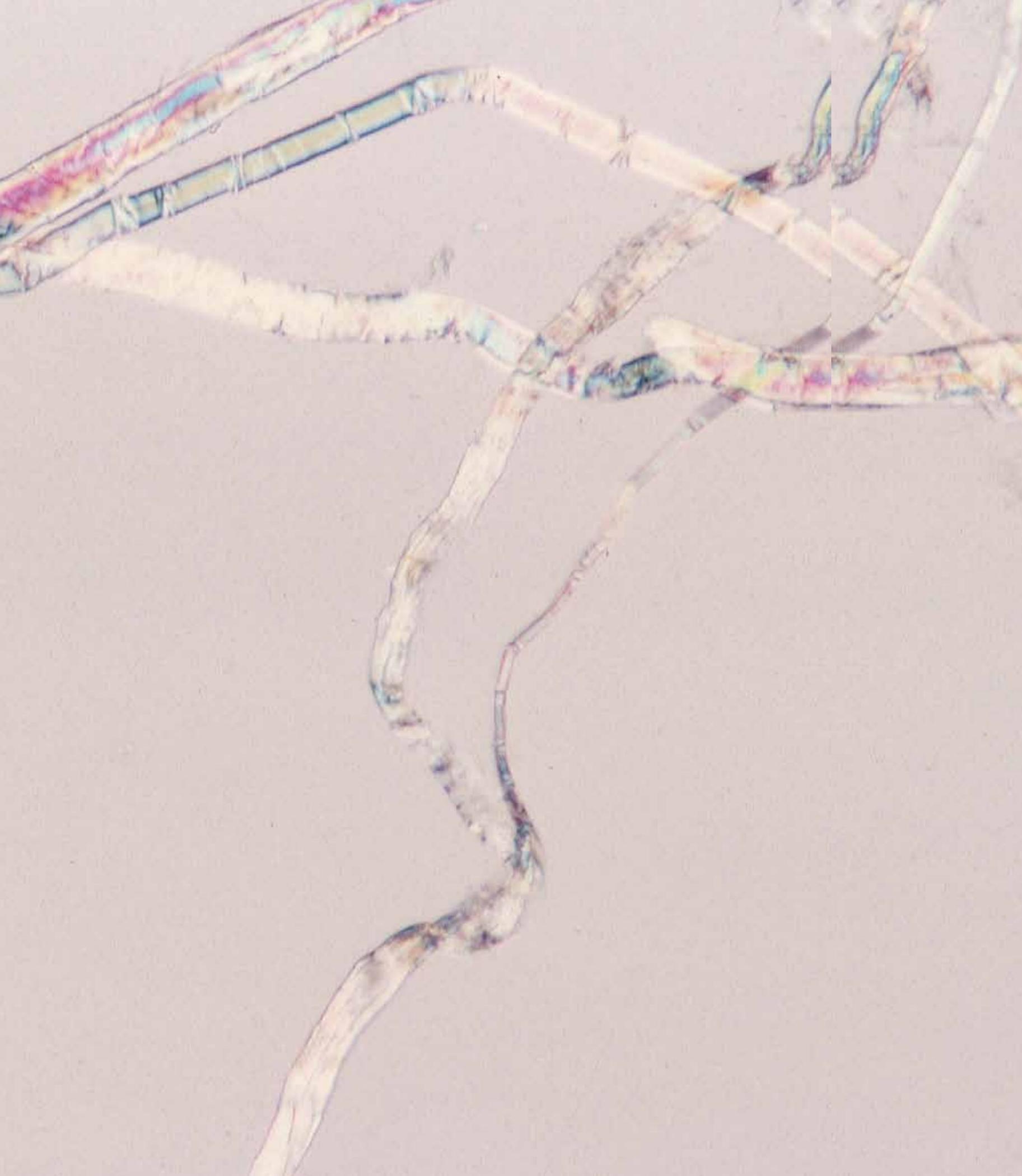
but was not as successful for the separation of thin, soft papers.

Stage 4 Documents are humidified over gortex in a cedar box. This slow and gentle method of relaxing the paper had some success, but in all cases separation was dependent on the amount of mould growth wrapping around the paper fibres.

Stage 5 The possibility of separating papers using enzyme treatments is the subject of on-going investigation.



In some cases, it has not been possible to separate documents without causing significant damage; and these papers have therefore been left for future work.



fibre analysis

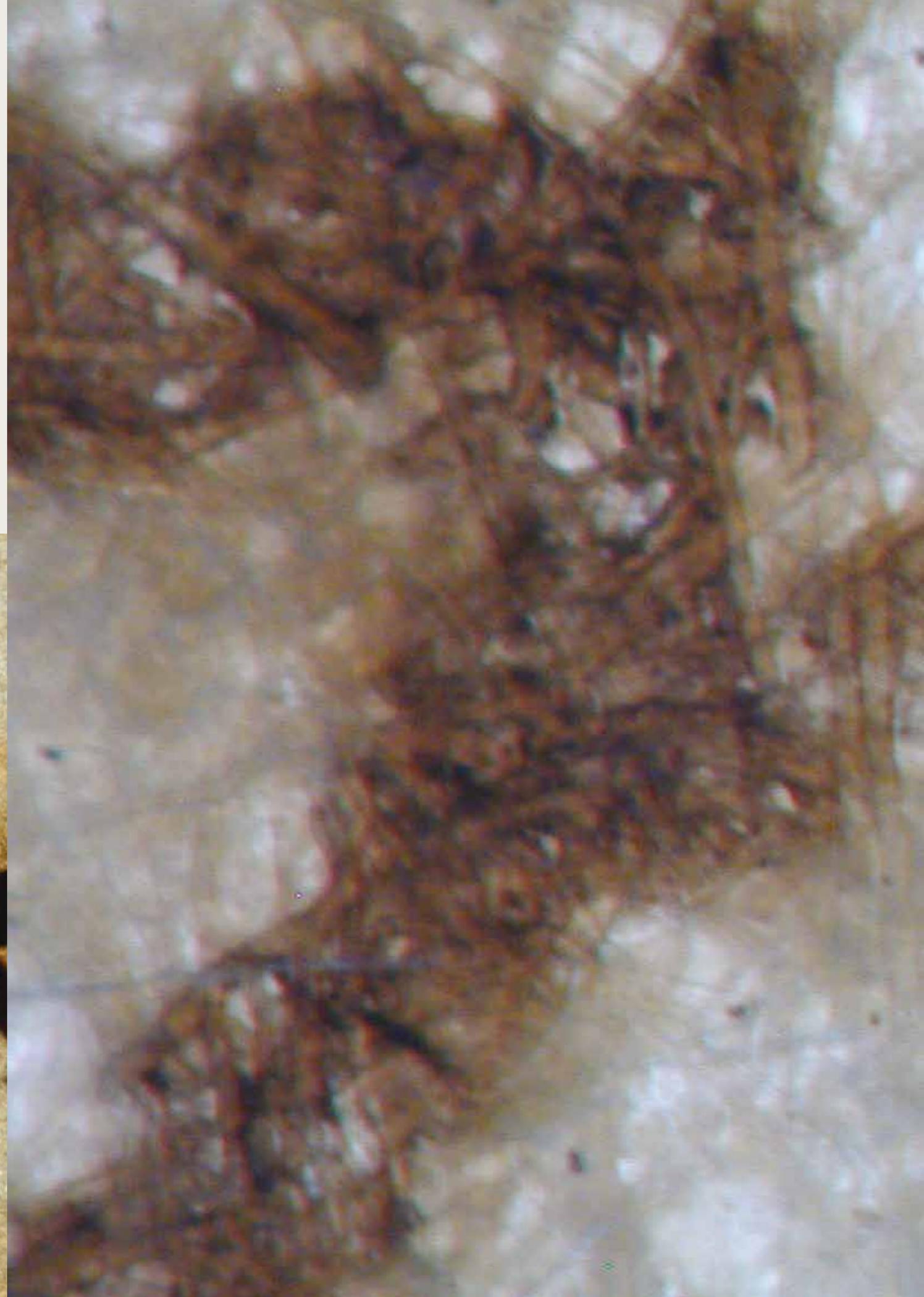
Each bundle is documented before and during conservation treatment, noting paper characteristics, such as watermarks. Microscopic examination is used for fibre analysis and to determine the extent of mould damage. Most of the paper is European, but there are also oriental papers and very thin Western paper, used for making copies.

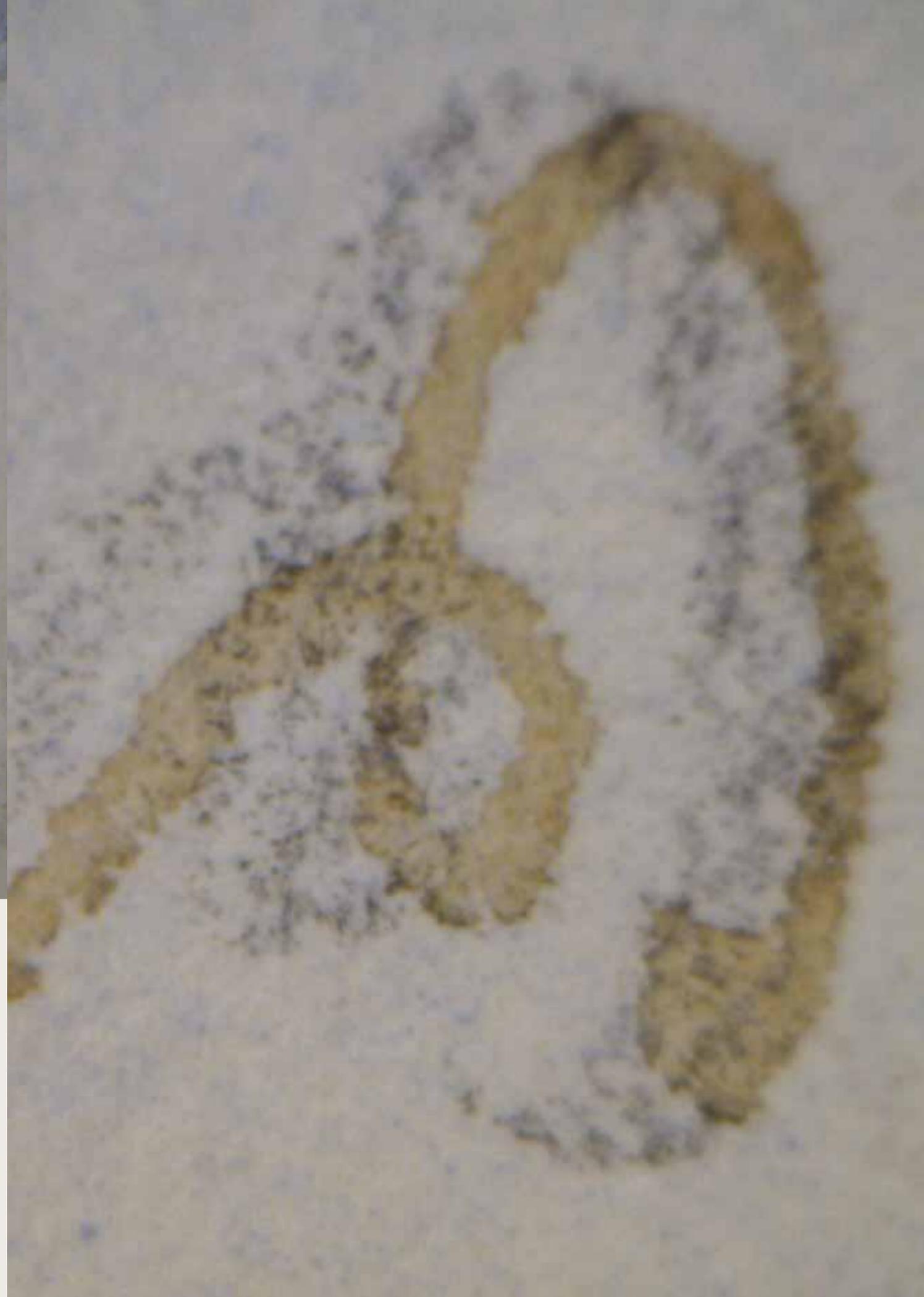
Fibre analysis indicates that the majority of the British papers contained hemp and linen fibres with a small number of cotton fibres seen in some of the later papers. These would have been made from linen and cotton rags as well as possibly old rope, canvas and sails. A high proportion was made by the firms J. Whatman, S. Pike and J. Larking.

These papers are generally quite thick, with dense and closely packed fibres and have a thick application of size, a gelatine, like glue, that strengthens the paper. They are usually off-white in colour, though there are a number of blue/grey papers. The smaller percentage of European, mainly Spanish and Portuguese papers, are of a similar composition, though some contained other plant fibres. The paper is usually quite thin and is either lightly sized or unsized. They are generally off-white to beige in colour.

inks

The majority of the writing is in iron-gall ink, which varies in colour according to the ink recipe used, from light brown to nearly black. In some instances it has faded or is obscured by staining, and in others it has corroded. Although iron-gall ink is stable in water, corrosion is accelerated by moisture causing the ink to 'burn through' the paper. Before undergoing water-based conservation treatments, the documents are treated with calcium phytate to inactivate any soluble iron (II) and iron (III) ions.





There is also a significant number of documents, especially Wellington's replies, which have been written in pencil — and the Duke's text here was sometimes overwritten in ink by his secretaries. The pencils used were mainly made with soft, Cumberland graphite, which is easily rubbed away. In some cases, this has been found to be an indelible pencil, which turns purple on contact with water. All pencils and inks, both handwritten and printed, are tested for solubility in water or other solvents before conservation.

steps in conservation

Surface cleaning: Letters are cleaned where possible using soft, goat or sheep's hair, Chinese brushes. Chemical sponges are used to remove dried, powdery mould residue.

Aqueous treatments: pH tests show that most documents are fairly acidic. They are washed in cold and warm water to remove discolouration and soluble degradation products. The papers are then deacidified using calcium hydrogen carbonate.

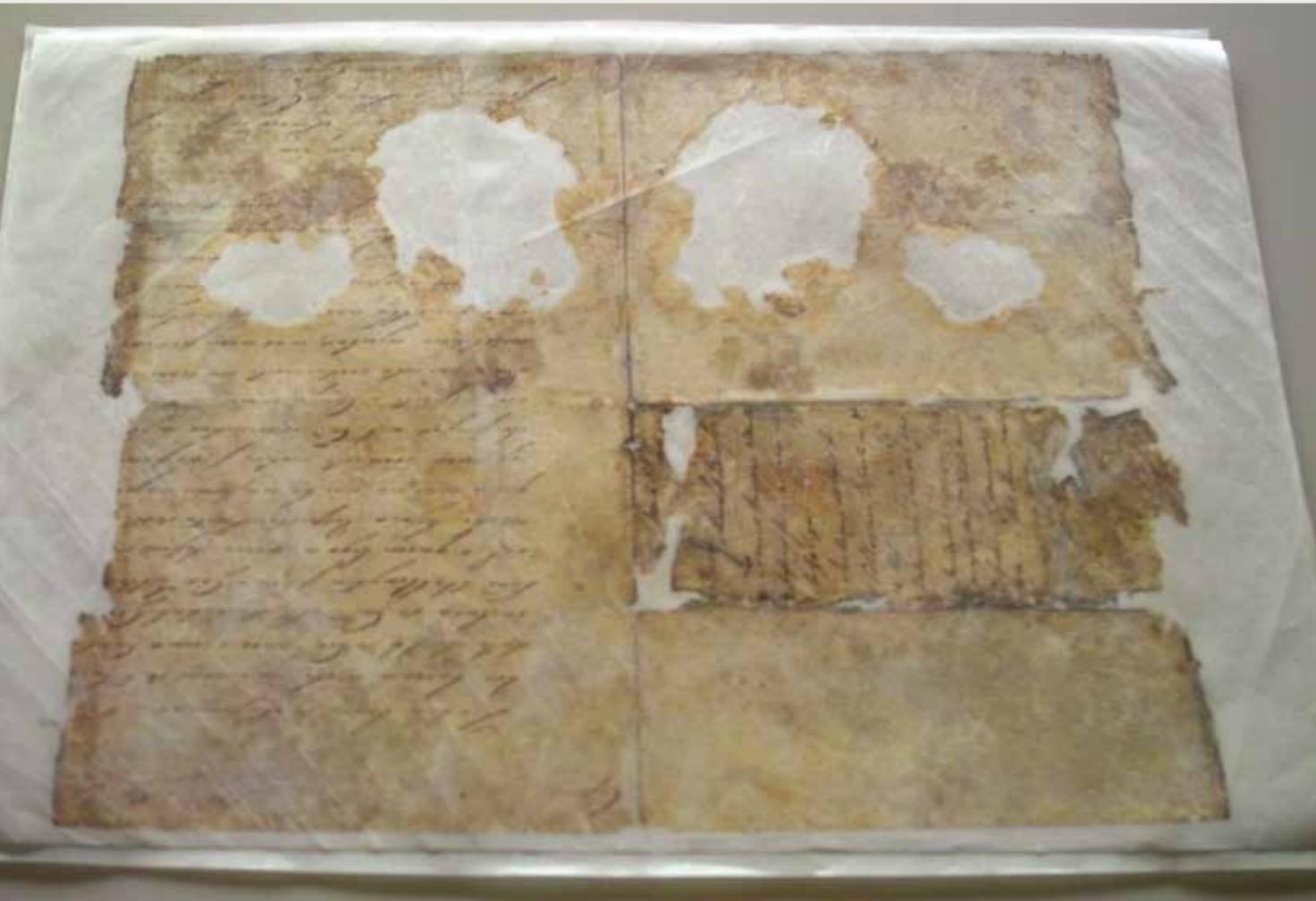
Repair: Documents are humidified and loose fragments realigned where possible. The paper is then lined with Japanese tissue, adhered with Shofu, a Japanese wheat starch paste. The lining acts as a support to both hold fragments in position during the repair process and also to prevent tearing of the original at the weakened, mould-damaged edges. This can occur as the result of tensions between new and old papers as they dry at different rates.

Missing areas are infilled using a technique known as leaf-casting. This creates new paper made from pulp similar in nature to the original paper. The result is a sympathetic repair, which strengthens the weakened area, without putting undue stress at the repair edge. Repairs are trimmed to the document which is then strengthened by an application of size, either gelatine or methyl cellulose.

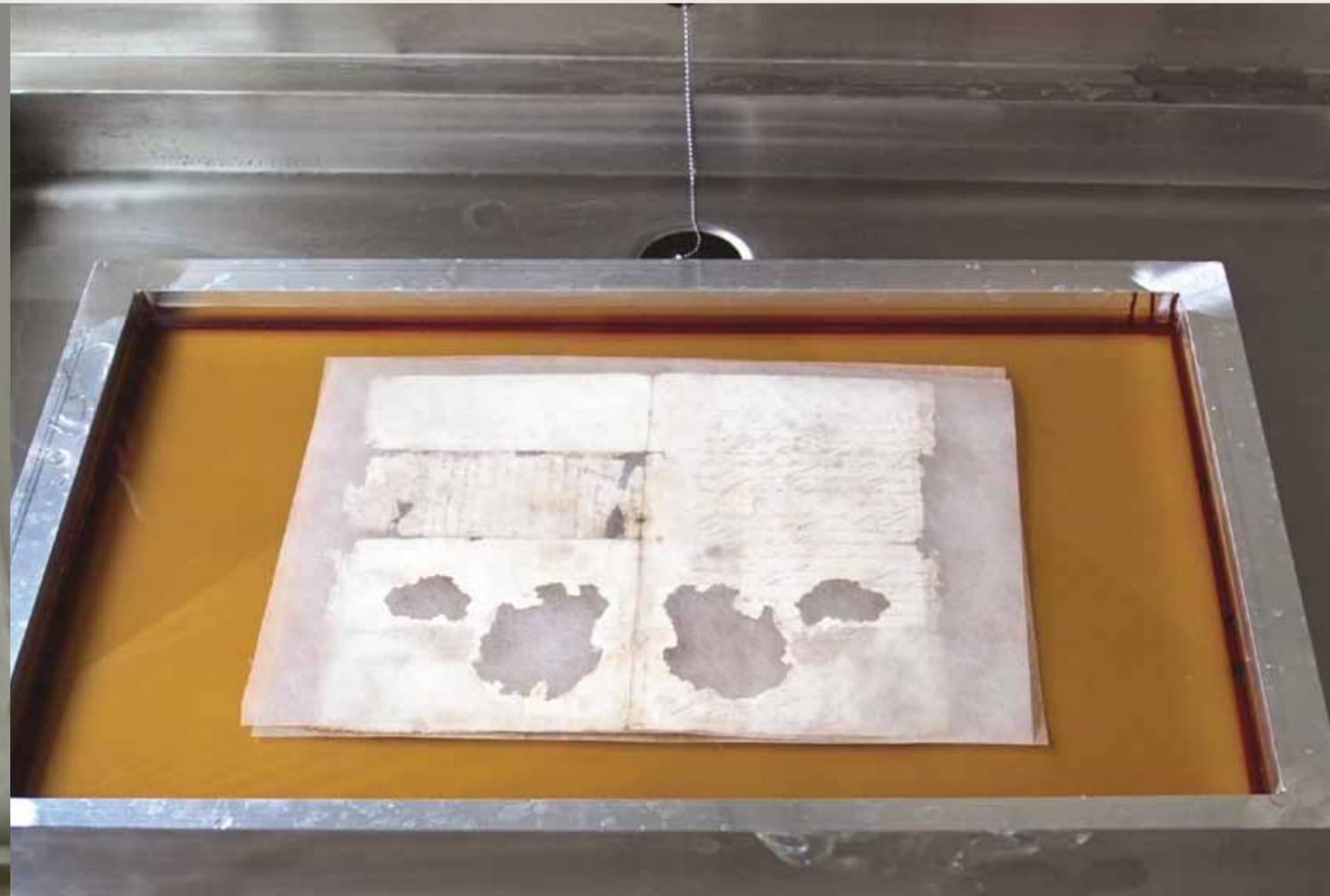
Storage: Documents are stored in 100% cotton, acid-free folders and boxes.

Surrogates: Digital surrogates may be made for consultation in our Virtual Reading Room (<http://viewer.soton.ac.uk/>). This will lessen the impact of handling on vulnerable original materials.





document relaxed onto non woven polyester carrier



document float washing



document lined with tissue

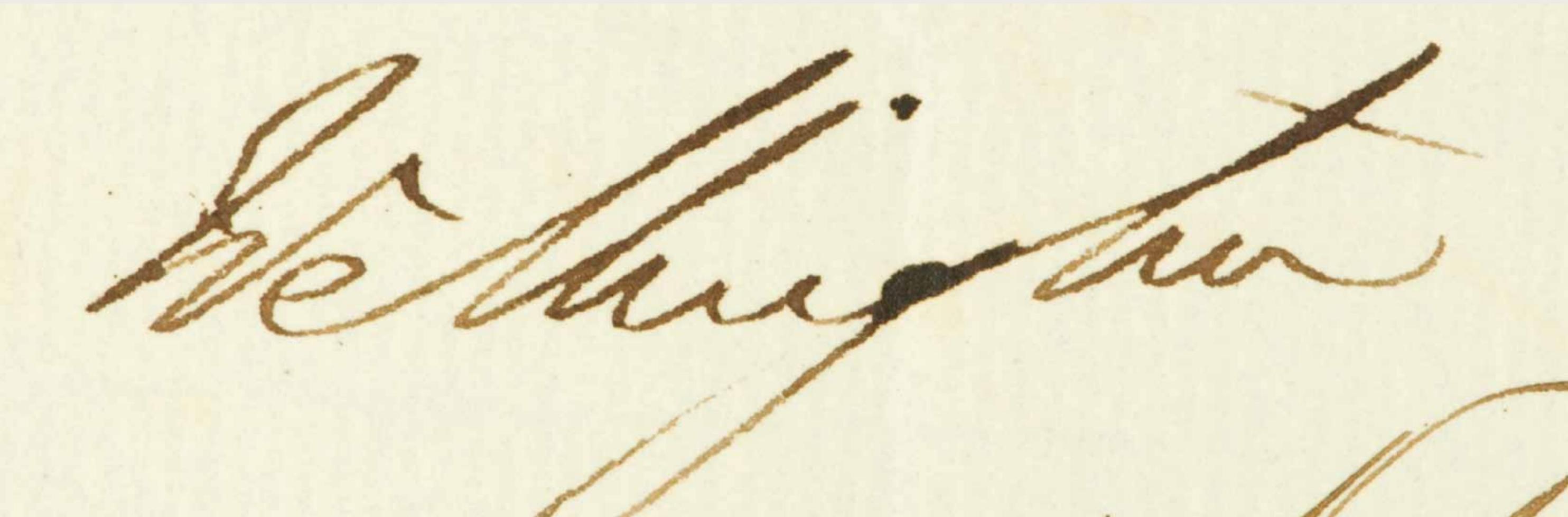


document on papermakers' felt after leaf-casting

In 1983, the University estimated that the collection would require some 50 years of conservation work. Substantial progress has been made with this project, the largest conservation task the Special Collections Division has undertaken.

Approximately 15 years of work remains outstanding, and that includes important materials for the Peninsular War, as well as some of the papers for 1814-18 — the conclusion of the Napoleonic Wars, the Waterloo campaign and the allied occupation of France; for 1832 — the year of the Reform Acts, when Wellington led the Tory peers in the House of Lords; and for 1841-6, when Wellington was a member of Peel's cabinet. The University has launched a campaign to raise the funds to complete this major project by 2015. Our target is £420,000. Finishing the conservation by the Waterloo bicentenary will mean that the archive will be fully accessible for a public especially interested in these momentous events. We invite you to support us in this campaign.

More information about funding the project and an on-line exhibition based on the archive can be found at www.southampton.ac.uk/wellington. A video about the project can be seen by following the links from www.southampton.ac.uk/archives



www.southampton.ac.uk/archives

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