

The Faddan More Psalter A progress update

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The Faddan More Psalter is an Eighth Century illuminated vellum manuscript, in its original limp, tanned leather cover that was found in a bog in Co Tipperary, Ireland in July 2006. The find has stirred up a great deal of interest, both in the book itself and in the genuinely unique conservation problems that it presents. It is the intention of this report to outline the approach that has been taken to date and to summarise the work that is currently being undertaken.

The discovery and condition of the book

The book was found on the afternoon of 20th July 2006 by Mr Eddie Fogarty, who was operating a mechanical digger in the bog at Faddan More, near Birr. Mr Fogarty, somewhat astonishingly, spotted the book as it sprung open in the bucket of his digger and then dropped into the 2 metre deep trench adjacent to where he had been working. He immediately contacted the bog owners, Kevin and Patrick Leonard, who gathered together the fragments and covered them with wet peat before notifying the staff of the National Museum of Ireland. We were indeed fortunate on a number of fronts – that the book survived at all, that it was spotted under these circumstances, and that the landowners had made archaeological discoveries before, had a keen interest in local history, and knew from past experience exactly what to do with the find to ensure its preservation while still in the bog.



The Faddan More Psalter as found with overlying peat removed. ©National Museum of Ireland

Conservation and archaeological staff from the Museum travelled to the site on the following morning and we were astonished by what we found. It was immediately clear that we were dealing with an early book from the surviving lettering and traces of a yellow border, which were visible on top of the remains. The book itself lay open on the leather cover. However the condition of the find was the cause for a great deal of concern. Descriptions at the time varied from 'like lasagne' to 'alphabet soup'. We clearly had a find of enormous importance but one in very poor condition. The landowners had laid the book on a plastic sheet, which we were able to slide on to a board to remove it from the trench. We then covered the find with cling film and encased it in 'cellocast' resin bandages to encapsulate it for transport back to the National Museum's conservation labs in Dublin.

In Dublin, the Psalter was exposed as fully as possible for recording, was recorded and was then put in to storage while we worked out what to do with it. We did not want to introduce biocides or freeze the book, due to the risk of reactions with the inks and pigments from biocides and the possible deterioration of the vellum from freezing. We therefore stored it in a refrigerator at 4 degrees centigrade, lying on its bed of wet peat from the site, and covered in a 'cellocast' resin cover, moulded to its contours with an intervention layer of silicon mylar. This technique, which has proved valuable at the NMI in storing bog bodies, relies on the natural biocides in the bog water to prevent deterioration. Although mould will grow eventually on any organic material (eg ties, labels etc) stored with the book, it is now nearly a year since discovery and those parts of the Psalter that are still in storage awaiting treatment are completely stable with no signs of mould growth or deterioration.

Examinations showed the vellum book to be a Psalter of large format with a folio size of approximately 30 x26cm, and 5 gatherings. It was found lying with gathering 3 open, with part of Psalm 83 visible. Early examination found areas of illumination, particularly what may be the remains of an illuminated page with display lettering, found by gently easing the book block back from the cover. The eighth century date is derived from the style of the lettering used, making this the first Irish manuscript book to be discovered for over 200 years.



Careful easing back of the text block from the front cover revealed a tantalizing glimpse of the highly decorated first page. At the time of going to press this folio remains un-treated. ©National Museum of Ireland

The book is lying open on its original cover, a limp tanned leather structure with a fore edge flap to which are attached 3 large 'buttons'. The binding has generated particular interest as a unique example of an early binding style that has not otherwise survived in Western Europe from this date.

The condition of the folios, which early tests showed it was possible to separate while wet, varied a great deal. Survival can vary enormously within a single folio and between adjacent pages, presumably depending on such factors as local conditions in the bog, treatment used in preparing the vellum, the nature of the hide cover and the area of the animal that it has been taken from. Condition varied from surprisingly good, with a 'natural' vellum colour and full legibility, to areas where the inks had partially tanned the surface directly below where they were applied, but the surrounding vellum had become gelatinous. Areas were also found where the letters have survived but the vellum matrix of the pages has been lost leaving the letters free to float around with only slight encouragement. There are large areas (60%+) of complete loss. The cover of the book was in good condition and, though ripped by the digger in places, appears to be complete.



An orpiment border and a capital letter were among the exciting features visible before conservation commenced. ©National Museum of Ireland

It became apparent, as the manuscript was examined and its importance assessed, that a complex conservation project was required, with systematic recording and dismantling in order to extract as much information as possible about it as treatment proceeded. A project was initiated to carry out this process with a high level steering group from the National Museum of Ireland and Trinity College Library, with specialists in different aspects of the work sought for consultation as material related to their fields became available.

Overview of the Approach taken to the Conservation

It was obvious from the outset that the book presented major conservation challenges, straddling as it does, the fields of book and vellum conservation and archaeological conservation. Archaeological survival of vellum is extremely rare (we have only been able to find one previous instance) and we have not been able to find any record of a previous discovery of this nature.

The first task in the programme of conservation was one of consultation. We could not find any previous discoveries of such a find, so we consulted widely in the fields of both archaeological and book conservation, getting people's reactions to the find, and the approaches that they would undertake if faced with it. We received a quite surprising number of different ideas with regard to

approach. Unfortunately this also led to a situation where we have received conflicting advice from a number of highly regarded conservators and have had to act on the basis of experimentation. The range of advice was very wide with that received from the book and archaeological conservation fields hugely varying at times. We have also heard of an initial publication of photographs that was produced of the Psalter, being left in a Conservation Department tea-room as a horror story!

At this point in the process, the Conservation Department of the National Museum of Ireland had been consulting very closely with the Conservation Department of Trinity Library, who holds 7 of the 10-pre 1000AD, Irish books still remaining in Ireland. We arranged for John Gillis, a Senior Conservator of books and manuscripts to be seconded to the Conservation Department of the National Museum, and it is this combination of experience – archaeological conservators from the National Museum working with a book conservator from Trinity College Library, who are conserving the Psalter. We are immensely grateful to Trinity College Library and their Conservation Department for agreeing to this arrangement and for the level of support that they have given.

An overall approach was agreed for the conservation element of the project with the following structure.

Phase 1

All investigations of the book that could be undertaken in a non-destructive manner would be carried out, and the object recorded in its 'as found' form in as many different ways as possible. This eventually included photography, drawing, MRI scanning (unsuccessful), multi spectral imaging (unsuccessful) and High Definition filming including close ups. CT scanning and X-ray were ruled out on the basis of reports of X-rays accelerating vellum degradation. Meanwhile tiny samples of the vellum were taken for degradation analysis and bookbinding specialists were brought in to analyse and record what structure in the binding was visible.

Phase 2

While phase 1 was occurring, samples of historic (18th century) parchment were taken, waterlogged and put under pressure for a period of 2 weeks. These samples, though by no means the same as the waterlogged archaeological vellum, were used for experimentation to establish the comparative effectiveness of the various drying techniques that had been suggested to us.

As a basic principal, it was agreed that no chemical be added to the vellum that would remain after the completion of the drying process. This principal was established primarily because of concern over the possible long-term effects of chemicals such as polyethylene glycol and glycerol on the inks and pigments present in the manuscript, and unfortunately ruled out some possible archaeological conservation techniques.

The following drying techniques were eventually tested: -

- Air-drying
- Freeze-drying
- Air-drying on a vacuum table
- Air-drying under blottings and glass weights
- Drying between blottings using a 'vacuum packing' system

All of the drying techniques above were tried from water, but all the techniques given above with the exception of freeze drying were also tried, drying from various solvents, to establish if shrinkage could be reduced by reducing the surface tension of the liquid being removed. Solvents tested included ethanol, acetone and an acetone/ water solution.

A summary of the results is as follows: -

Please note that these are broad statements regarding accurately measured and carefully controlled experiments. The statements included here are intended to give an idea of the approach taken, but the experiments will be written up in full elsewhere:-

Drying from Water

Air-drying: (this really acted as a control method and was not expected to be considered as a viable method of treating the manuscript)
Very distorted. Loss of flexibility. Becoming translucent in places, leaving a blotchy appearance. 5% shrinkage

Freeze-drying:
No distortion. Opacity maintained, but sample "pulped up" with a noticeable increase in thickness. Loss of natural pigmentation on hair side, becoming almost white, surface now "spongy". 3.5% shrinkage

Air-drying on a vacuum table:
Vacuum struggled to hold the samples in position. Translucent in places. 5% shrinkage

Air-drying under blottings and glass weights
Considerable colour changes in some samples with slight translucency in the sample dried through water. 3.5% shrinkage through water

Drying between blottings using a 'vacuum packing' system
No distortion throughout all samples, sample dried through water became very translucent. 1.5% shrinkage.

Effects of solvents

Solvents were tried in conjunction with each of the drying processes (except freeze drying)

Ethanol:-

Generally reduced shrinkage effects, compared to water and gave a good 'visual' result. Samples that became opaque when dried from water, did not when dried from ethanol

Acetone

Drying was so rapid as to be impossible to control, and the dried parchment had a 'horny' feel.

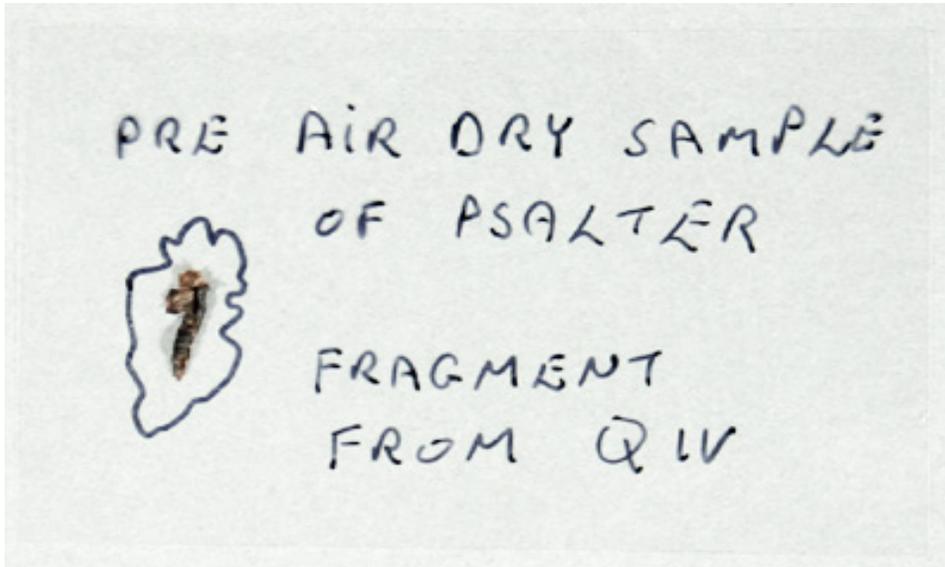
Acetone 80% Water 20%.

The parchment was unstable in the solvent and pieces began to break off the surface during impregnation.

After further trials using the best performers from above and taking into consideration other working aspects of each method, the technique of vacuum pack drying between blottings, from ethanol was selected as the technique most likely to give good results when drying the Psalter. The technique involves the replacement of the water in the vellum by ethanol, by immersion in ethanol for 48 hours, changing solution half way through. The ethanol soaked vellum is then placed between layers of fine 'bondina' and then between 100% cotton blotting paper. This is then placed within a vacuum packing bag and put in the vacuum packing machine. The vacuum causes the ethanol to diffuse from the vellum into the surrounding blottings, while the even pressure of the blottings held in place by the vacuum, controls shrinkage. It is sometimes necessary to change blottings once during the process, which takes about 48 hours.

Phase 3 – The situation at present

After the test pieces, the technique was tried on a small stray fragment of the Psalter and was found to be successful (after solubility tests for the inks). It was then tried on larger fragments, and eventually large pieces, again with remarkable success. Shrinkage of substantial pages of the Psalter is controlled and is consistently around 2% to 5%. This should be compared to a small and out of context fragment (with no text), which displayed approx. 75% shrinkage and massive distortion when air-dried.



An outline traced when from a small detached fragment of vellum from the Psalter and the same piece when allowed to air-dry. ©National Museum of Ireland

The Psalter is currently being kept refrigerated and is brought out of storage solely for the removal of pieces to be treated. Treatment involves the removal of substantial pieces – generally the remains of entire gatherings, but the book itself and the way it lies dictate the precise nature of the pieces selected. A piece is identified, carefully recorded and lifted from the book by means of hand tools, some fabricated as required, bondina and silicon mylar – gently inserted as the pages and fragments are teased apart.

The piece is then separated out, using the same techniques into its bifolia, and is gently cleaned with suitable instruments, deionised water and ethanol. It is again recorded, often by a tracing at this stage. Each fragment is sandwiched between layers of bondina during the process to facilitate handling. When cleaned, it is dried using the technique outlined above.



Folio 28v 31r before and after the drying process. ©National Museum of Ireland

During the process of dismantling and conserving the book, new discoveries are continuously being made as new pages are revealed, analyses undertaken, and as details of the binding structure become clearer. These are making this a particularly exciting project to participate in.

The project is very much a team effort and we are grateful to everyone who has contributed to it with their time and to the numerous members of the conservation community whom we have spoken to and who have been so generous with their advice.