



**Satellite Meeting**  
**"Conservation and preservation of library material in a cultural-heritage oriented context"**  
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Marta Grimaccia

Biblioteca Apostolica Vaticana

Our objective is to build a data base, in which to collect all the information about the conservation works done from the beginning of the twentieth century to now and onwards.

In this way we want to build the history of the restoration and conservation techniques used in the Vatican Library and at the same time we aim to define a more precise and quicker way of registering what is done today.

We will use the information contained in the old registers where the conservation works are recorded since the 1919, plus the information gathered in a detailed form used since the year 2000 and, finally, the futures works from next year will be registered electronically in a form that I will show you later.

The old registers contain just a few data such as the date, the shelf mark, the name of the conservator and one or two lines in writing about the conservation. All this information are useful to classify chronologically the books, but unfortunately do not allow us to classify the book by shelf mark; and so every research needs a lot of time.

We will organize all these information in the database and we will widen our knowledge of the ancient techniques using the literary sources, in

particular the writings of Father Ehrle, and also the knowledge of our older colleagues. In the cases of major interest we can also use the analysis, of the Vatican Museum chemical and biological labs .

I'll show you, as an example, one of the parchment leaves of the latin codex 5766, that is one of the palimpsest that was treated in the nineteenth century with a gall solution to bring to light the bottom text of the VII century, the Codex Theodosianus.

The gall solution is acid and with the time it has corroded the writing support. Because of that, at the beginning of the twentieth century the conservators of the library decided to consolidate the parchment. But how?

What appeared to us in the 2006 was a leaf totally covered by a sort of a white pigment, that prevented the reading of the text.

We knew that the leaf was preserved in good environment conditions and that still had good mechanical strength, so we could suppose that it wasn't attacked by any biological agent.

Then: "What was happened to such a precious item?"

The palimpsest was carried out to the Vatican Museum lab and analysed by optical microscopy, by Fourier Transform Infrared Spectroscopy, by Scanning Electron Microscopy with energy dispersive probe (EDS) and it resulted that the parchment was consolidated with albumen and left to dry on blotting paper (as it is described by father Ehrle, in Saint Gall conference). This blotting paper had left white fibres on the surface of the leaf. These fibres were initially wet and transparent, but became more visible as much as they had dried and the consolidant had penetrated into the support.

At this point our master decided to remove the white particles mechanically, with a light abrasion of glass fibre, under a magnifying glass, well knowing the condition of the pigments that were crackeled but were still kept in place by the consolidant.

This is just an example of what kind of information of the old history of our lab can be kept and arranged on the digital data base.

All data will be recorded on a standard survey form, one for each book. This form is an evolution of the paper survey form originally conceived in 2000, that has been implemented considering the needs of the

conservators. A further improvement has been reached last year, when the form was compared with the survey form used in the Saint Catherine Monastery in the Sinai region and with the form made by Mr Federici in 1993 for the Italian medieval bindings census.

The survey methodology has been designed to allow the most rapid and accurate extraction of information from the book. It combines three types of data: 1) handwritten text, 2) a combination of multiple-choice questions selected by marking a box (with the option of filling in alternative answers where necessary) and 3) schematic drawings, to ensure clarity and consistency and to maintain a high level of productivity.

The use of drawing of specific details of the bindings construction is good for both clarity and speed, especially for some complex areas of the binding, where we have encountered an incredible variety. Drawing, supported by photography, should allow us to work out of a descriptive terminology, where useful terms do not already exist in the literature.

When the survey of each book is completed, the book is photographed before, during and after the conservation process.

The form may contain different levels of information, depending on the consistency of the conservation work: a minimal treatment will be described quickly and it will not give evidence to those components that are only visible in a complete unbound book.

The form is composed by three parts:

- The description of the item
- The condition of the item
- The conservation work

The first part, according to a codicologic approach, takes the different material and structural elements of the book into account, starting from the text leaves, and going on to the guards, the sewing, the edges, the boards, the spine, the spine lining, the endbands, the cover, the fastening and the metal furniture.

We want to record also if there were previous conservation works.

Many fields are dedicated to the binding, in fact the working mechanism, which holds the leaves together, allows access to them and

protects them from external harm, is the one which takes the brunt of any damage.

In the same time, nowadays the importance of the binding as archaeological item, as product of the ancient hand craft, is of common understanding. This was not the case until the nineteenth century. Before that we know that scholars and restorers were interested mainly in the text while antiquarians only remarked the aesthetic value of some bindings. Because of that a lot of the precious bindings are still preserved connected with their text block or stored in a specific collection<sup>1</sup>, but most of the cheap bindings and all the original structural components are lost.

When we work on a binding, we always try, when possible, to reuse the original components, and if it is not possible, we preserve them in a collection that in the Vatican library is the “binding collection”, with the hope that all this stuff will be useful for future research on the history of the binding.

The survey of the books and the filling of the form is done by the conservators, as they have the unique chance to analyse the book when is broken or unbound. At the same time they have to record all the features that are visible only during the conservation process, such as the watermark located on the fold of the bifolio, and all the features that may disappear because of the conservation process as, for example, the original size of the paper leaves, that can change during the washing.

In some cases, the conservator would collaborate with the curators to better estimate the historic value of specific part of the book.

Let's continue and analyse the second part of the form, that focuses the condition of the item and goes back to the logical order of the first part.

I will not spend time to illustrate each field, but I would like to point your attention to the evaluation criteria of the damage of the text block, which we acquired by benchmarking the Saint Catherine survey form.

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<sup>1</sup> in the beginning of the twentieth century in the Vatican Library a binding collection was arranged thanks to the curator Stanislas Le Grelle and the custodian Paolo Federici

The damage is recorded using percentages, to give an idea of the damage which is sufficiently flexible to consider a wide variety of types and levels of damage. The many variables which affect the condition are expressed in two measures: the Severity and the Extent.

The Severity indicates the seriousness of the damage, starting from 0%, when the leaf required a little or no treatment at all, up to 100% when the damage is so severe that the survival of the leaf is completely compromised.

The Extent indicates how wide is the damage on the entire textblock.

The third part concerns the conservation treatments of the text block and of the binding. The treatments are decided by one or more conservators with the master's supervision. All the techniques, the materials and the products used are recorded, in order to offer a good understanding of the work done to the future generation, with the hope to preserve the longest and the better our and their heritage.

The details of this part of the form are hundreds, but I just want to focus your attention on few techniques that I hope can be interesting for you, and that can show you how we can try to improve our skills through the cooperation with other conservation studios, and thanks to the challenge of finding new solution for the library's request, and through the collaboration with the scientific lab of the Vatican Museum.

The first technique I would like to show you is a parchment relaxing method, adopted a few years ago, that uses magnets instead of clips or weights.

The magnet is originally a long flexible tape that you can cut in many pieces of different sizes at your convenience. Once you have done that each piece has to be wrapped with paper. We lay down a slightly wet parchment on a iron board, covered with a polyethylene film, and we fix the parchment placing the magnets all along the edge and on the weaker parts, to avoid any stress and tensions. We think that this method gives good results and is practical and safe at the same time. The original idea was of

the conservation lab of Viboldone Convent and we learned it through a trainer from Novalesa Abbey, Mr Flavio Marzo.

A second thing to which I would like to point your attention is a wrapper, designed by my colleague Mrs Angela Nuñez Gaitan, that is an evolution of the book shoe, used for example in the Bodleian Library of Oxford. It is a very thin wrapper that doesn't need much room on the shelf – and we know how this is important – and that leaves the spine visible and, at the same time, protects the upper edge from the dust and the boards from abrasions. On the bottom face it is possible to fix a board of the same size of the text block and the same thickness of the booksquare that is useful to support the textblock of bigger volumes, that are kept upright on the shelf.

My last point is about the iron gall ink treatment procedure : many important Research Institutes have offered different, valid solutions, and now I am enjoy to say that the Vatican Museum is determined to provide its scientific equipment and its highly specialized staff to support us in this research.

The first test will be starting next September on ink samples from the Sistine Chapel musical book (number 39) whose bad conditions clearly show the iron gall ink damages.

Finally, all these information, all the filled forms will be organized in a database that will be available in the manuscript's data archiving and consulting system, that is already working in the Vatican Library, called InForMA (Informatics for Manuscripts and Archives). The InForMA is built in an open source Java/XML based program that can be easily managed by a WEB interface. It is a well-constructed database for the description and the research of manuscripts and archives items, consistent with the international standards (TEI-MS for the manuscripts and EAD for the archives items ). This search engine can find every single information that is present in the single conservation form. This will increase the chances of historical and statistical research about conservation.

The conservation forms, included in this database, will be totally available to the conservation lab for any kind of query, and partially available for scholars in the Manuscript Web Page. They will be able to see

the complete form only by authorization of the Library. But in the same time, they will be able to check, on the web, in real time if a codex is out of the consulting, because in the conservation lab or in an exhibition.

So far, we have seen so many benefits in the database, but we don't have to forget that the core of the question is the understanding that each conservation work involves difficult choices as it involves the loss of the original status of the item. In every conservation work we are faced to a compromise between two contradictory criteria: on the one hand there is the need to preserve the book as it is, as an archaeological item, and, on the other hand, there is the duty to guarantee the consultation of the book.

Father Ehrle wrote in a library and archive journal, in 1898, "Who is in charge of a manuscript collection has the duty to provide the heritage which he kept to the contemporaneous scholars, and the imperative of preserving this heritage to the future generation. It is therefore necessary to find a right balance between the care of the codex and the opportunity to use it"<sup>2</sup>.

It is a difficult balance, but is the one we aim for.

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<sup>2</sup> F. EHRLE: "Della conservazione e del restauro dei manoscritti antichi" in *Riviste delle biblioteche e degli archivi*, IX, 1898