

Antiphonaries (Fig. 1) were often constructed in large formats to be read from a tall lectern by a choir during liturgical performance. The cantor led the chant, and the choir responded.

Such tomes now perform as resources of musicology, artisanal production and material study. For this project, investigating these aspects helped determine the appropriate conservation treatment protocol and consequently, provided broader access to the choral manuscript through an online database.

Evidence of production methods, alteration of contents, changes in ownership, damages, and previous restoration campaigns, were found throughout the volume. The intention of the treatment was to improve the book's structure as a response to, and continuation of, its changing "song".



Figure 1. *Antiphonarium de tempore et de Sanctis Chori monialium S. Nicolai Novelli Luce*, Buffalo and Erie County Public Library (BECPL), 18 x 23 x 5 inches, 21 pounds.

Provenance

The library holds limited information on the provenance of this volume. The following aspects indicate the choral manuscript once belonged to a 17th century Augustinian Convent in Italy:

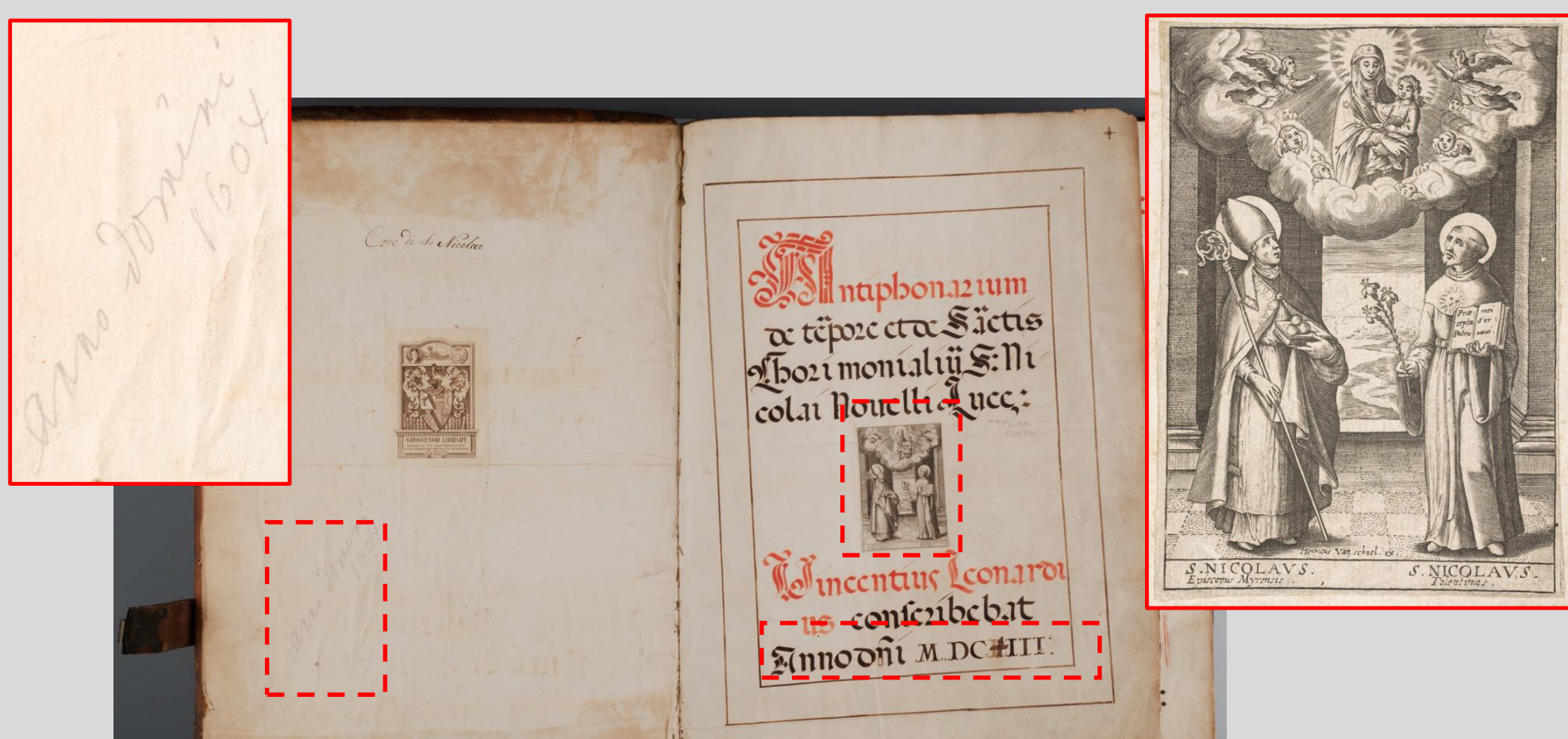


Figure 2

The title translated from Latin states the antiphony contains chants sung by the choir of nuns of *Saint Nicholas*.

Other references to the Saint are, an inscription that reads "Choir of Saint Nicholas", in Italian; and a cutout of an etching by a printer active in 17th-century Rome, featuring the Augustinian friar and Italian Saint Nicholas of Tolentino (Fig. 2).

The date of production reads, 1653 A.D. (Fig. 2). However, the Roman numeral 'L' was replaced with an Arabic '4'. Consequently, the year can read as: 1643, 1607, even 1604, if one considers the inscription on the pastedown (Fig. 2). The earlier date may refer to an exemplar used by the scribes.

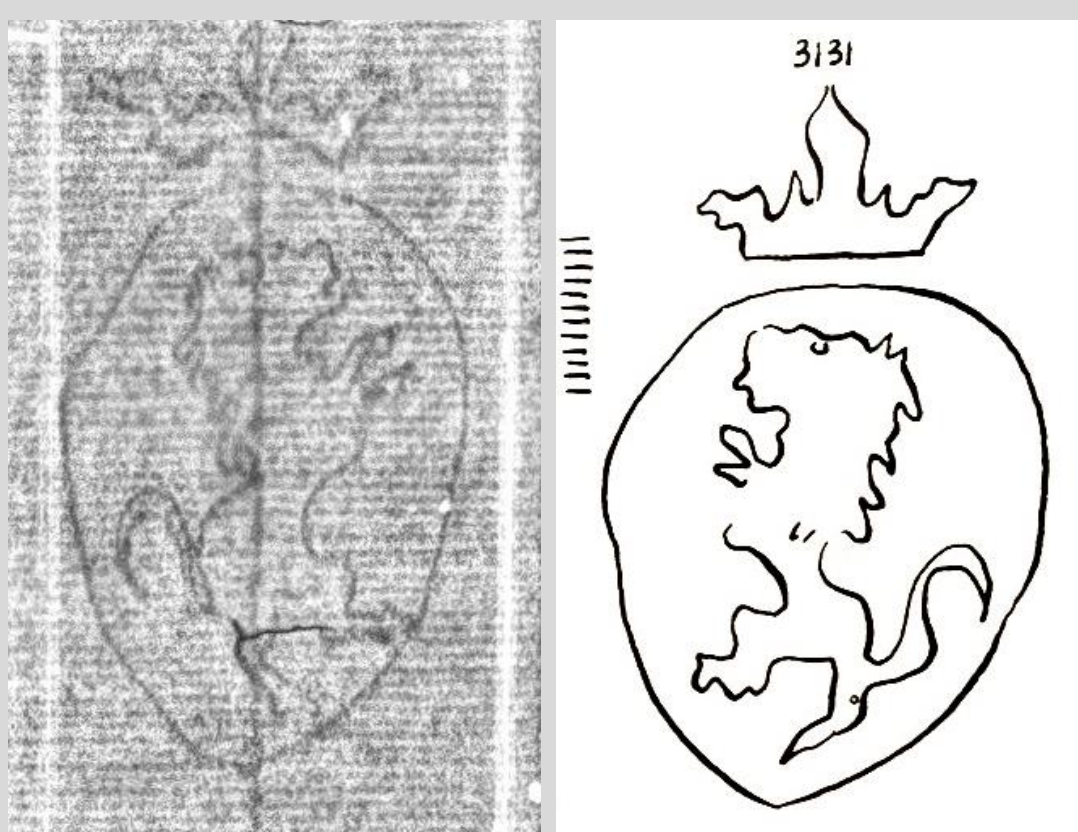


Figure 3

To narrow the date of production, beta radiographs of the paper's watermarks were captured (Fig. 3). The watermark could not be traced to a paper mill, however, this mark is also found in a mid-17th century book from Florence¹.

The ecclesiastical heraldic emblem could help trace past ownership. External elements to the coat of arms, describe what office the bearer holds. The purple pontifical hat with ten tassels on each side, indicates the bearer was likely a prelate of the Pope—a bishop perhaps² (Fig. 4).

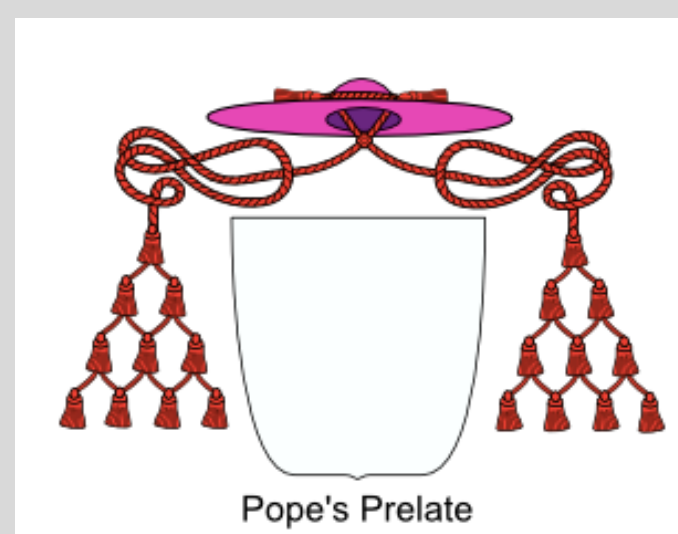


Figure 4

References

1. Heawood, Edward. 1969. *Watermarks: Mainly of the 17th and 18th Centuries*. Amsterdam, Holland: The Paper Publications Society.
2. New Advent. 2017. Ecclesiastical Heraldry. Catholic Encyclopedia. Accessed February 16, 2018. <http://www.newadvent.org/cathen/07243a.htm/>
3. Douma, Michael. 2008. Pigments through the ages. Accessed May 5, 2018. <http://webexhibit.org/pigments/>
4. Cantus Index. 2018. Cantus Index: Online Catalogue for Mass and Office Chants. Accessed March 11, 2018. <http://cantusindex.org/>

Alterations

Leather patches were fastened to the cover with iron brads to reinforce the worn head and tail. These were recycled from three different book covers (Fig. 5, left). An 'IHS' Christogram (Fig. 5, right), on one of the patches indicates its previous use on another liturgical book.



Figure 5

Based on the following observations, the emblems painted on the covers are also later additions to the binding:

Raking illumination reveals faint tooled designs on the covers (Fig. 6), incongruous to the painted designs.

The paint was applied over deteriorated leather (Fig. 7, left).

At the center of each cover, embossed circular marks from previously installed bosses, are visible through the paint layer (Fig. 7, right).

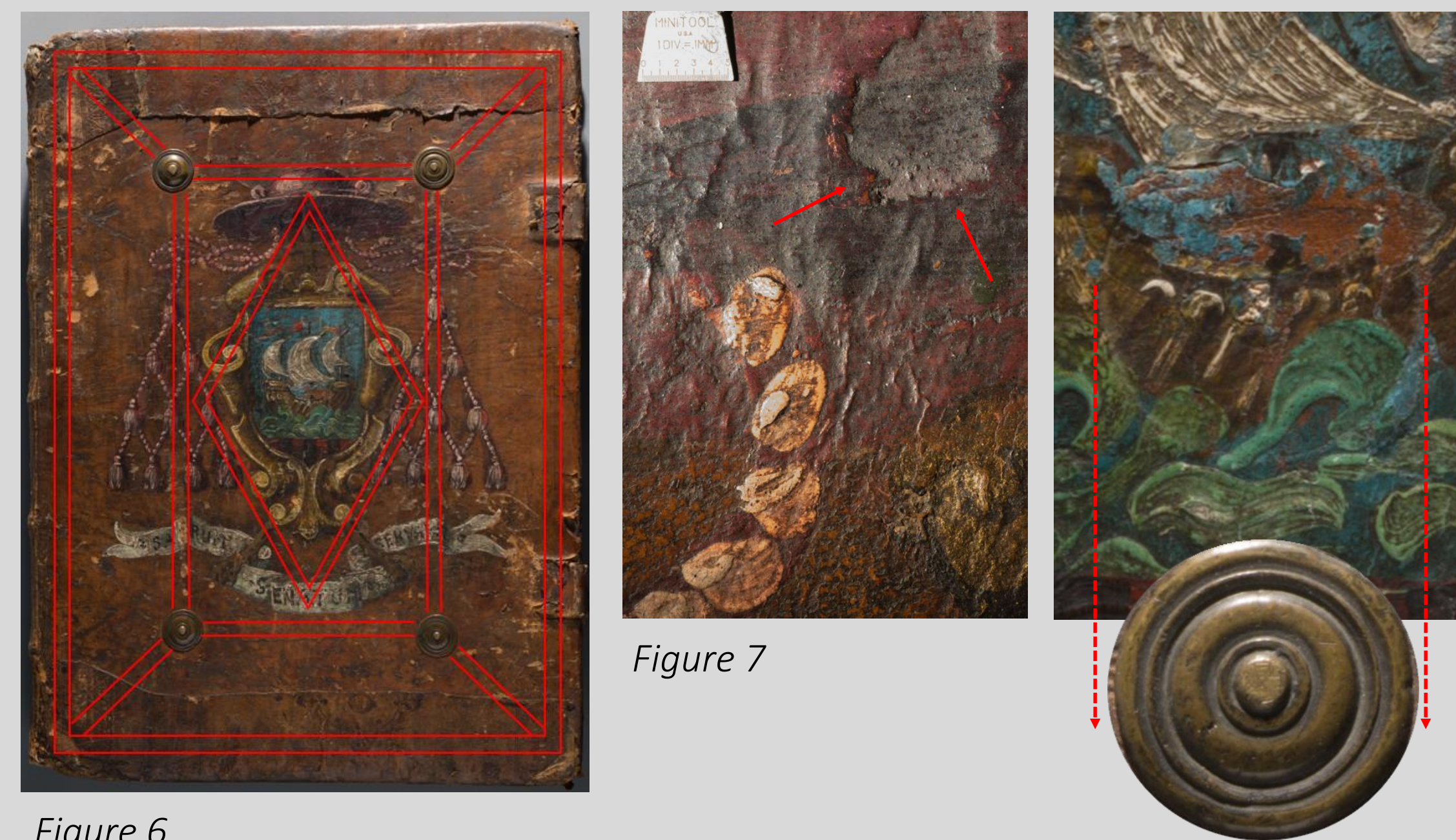


Figure 6

X-Ray Fluorescence (XRF) analysis of the pigments found evidence for the presence of modern paints (est.) emerald green, chrome yellow and zinc white, suggesting these emblems were likely added to the binding sometime between the mid-19th and early 20th century³.

Musical liturgy was subject to continuous elaboration⁴. On almost every page, changes were made to the music. Individual notes (Fig. 8), portions of leaves, and entire sections were added, replaced, and erased in a variety of ways.

There are two pagination systems (Fig. 9). It is possible the smaller set of numbers were pagination guides for the scribes during production or, the book may have been rebound at some point.

Several restoration campaigns are found on almost every page. These mostly consist of lower edges reinforced with thick paper and water damaged edges replaced with large patches of parchment (Fig. 10).

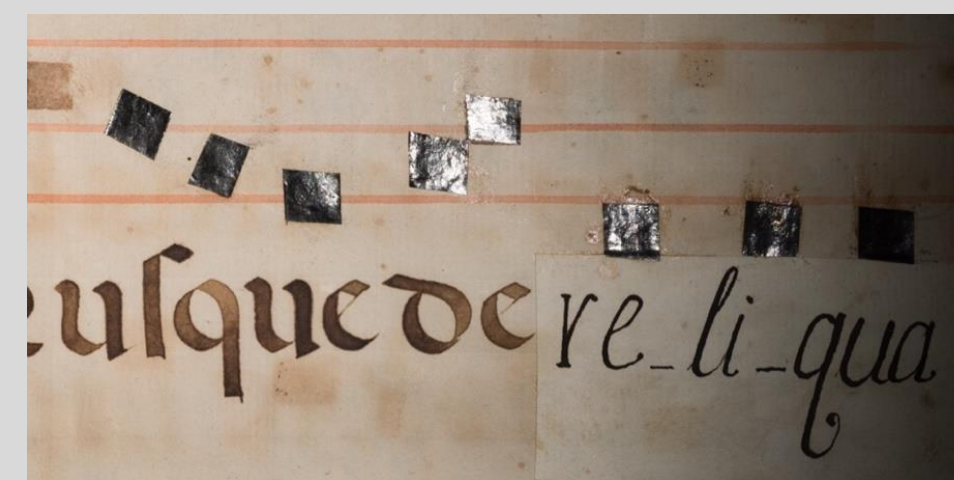


Figure 8



Figure 9



Figure 10

To understand the numerous changes to the content, and because often times, different types of liturgies were combined into a single volume, an inventory of the volume's chants was compiled with the help of the online medieval music database, Cantus⁴. Interestingly, chants in the added and replaced sections, were not found in the database. This may be because, liturgy was subject to diverse local influences⁵. Sources of late chant, such as this one, are rare⁶, so the gathered inventory and images will be contributed to, and accessible through Cantus.

Condition and Treatment

Sections of leaves are cockled due to the difference in response to high levels of relative humidity between the paper and parchment repairs (Fig 10).

This caused the textblock to swell disproportionately at the tail and fore edge (Fig. 11).

Consequently, the boards became negatively drawn, contributing to tension and failure along the upper hinge (Fig. 12).



Figure 11.

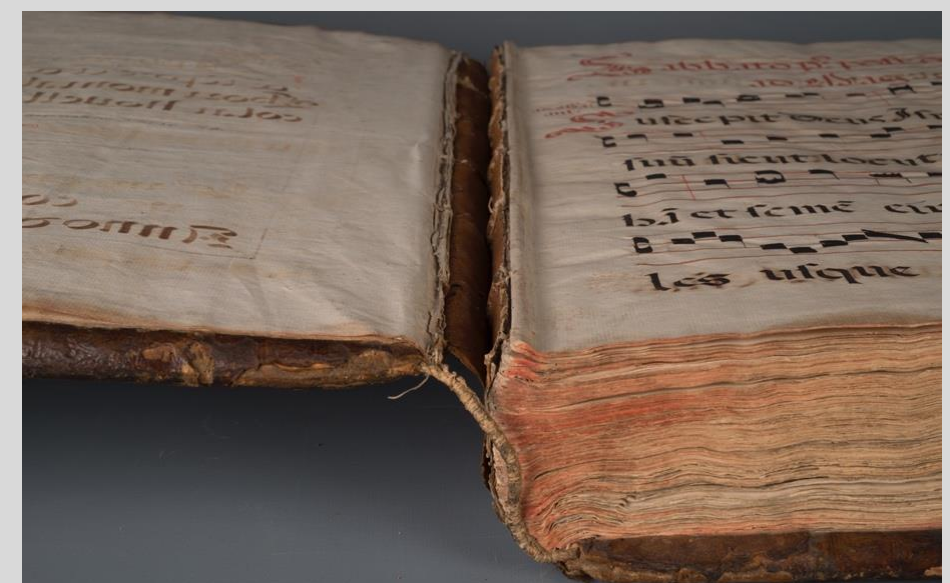


Figure 12.

X-radiography verified that the wooden board was composed of one plank. If not, moisture could affect possibly glued joints (Fig. 14).

The front pastedown was humidified and removed (and later readhered), and the board was counterlined with a new pastedown. Paper selection for the counterliner was based on degree of contraction upon drying: the pulling force would aid in reversing the draw (Fig. 13).

After counterlining, the board was dried under strategically placed weights with enforced air flow to encourage even and accelerated drying into a slightly concave direction (Fig. 15).

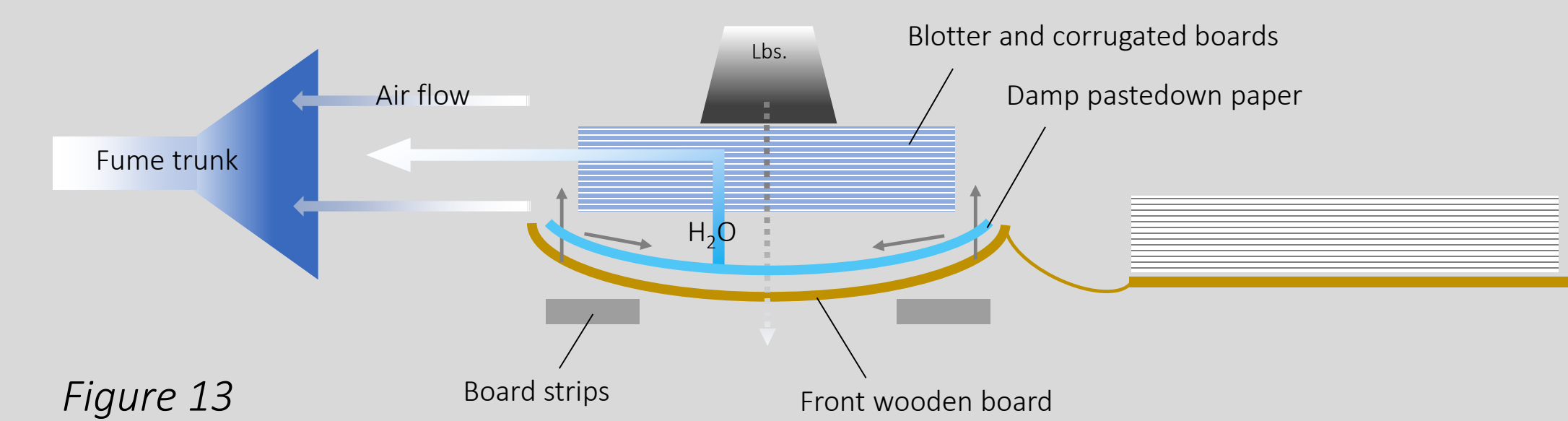


Figure 13



Figure 14



Figure 15: Before treatment left, after treatment right

Cracks and losses from iron gall ink corrosion were reinforced using gelatin pre-coated tissue (Fig. 16). Application was tested on an indicator paper to monitor the possible migration of iron (II) ions⁶. Gelatin was chosen for its capability to enclose iron ions and add a protective film to the surface of the ink⁷⁺⁸.

To improve legibility of the text, an additional layer of remoistenable tissue, toned to match the ink and cut to the shape of the letters, was applied.



Figure 16: before treatment

A strong yet lightweight enclosure with a cradle was constructed using archival double-wall corrugated board, covered with bookcloth. The cradle's spine was made with Volara to provide a soft and conformed support (Fig. 17).

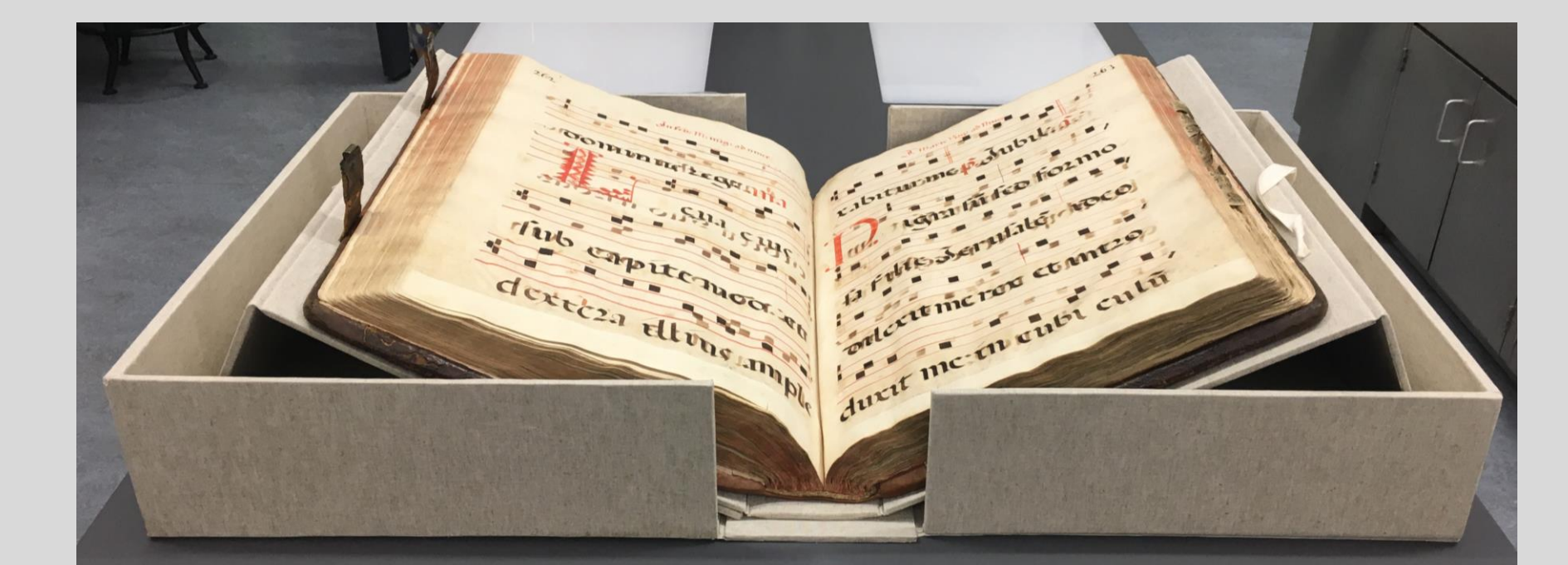


Figure 17.

Acknowledgements

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