Greensboro, NC

Summary of Anthony G. Cains's Report

on the Preparation of the Ellesmere Manuscript for the New Facsimile, the Repair (and History of Repair) of the Manuscript, and Its Rebinding

Editorial Note: Anthony G. Cains, technical director of the Conservation Laboratory of the Trinity College (Dublin) Library and an authority on the conservation of medieval manuscripts, directed the 1994–95 conservation phase of the Ellesmere Chaucer facsimile project. In the course of two previous rebindings of the Ellesmere Chaucer (believed to have occurred ca. 1802, ca. 1911), no documentation appears to have been kept of the work performed or of the evidence remaining from earlier preservation efforts. An essential part of the work Cains directed was the preparation of a report about the activities he supervised and executed and about the discoveries he and his colleagues made. His complete report (including additional diagrams and many technical details) is on file in the manuscripts department of the Huntington Library. It is much more elaborate than the present editorial summary, which discusses the conservation treatment essential to the preparation of the new facsimile, some fresh discoveries made about the history of the manuscript and its bindings, the necessary repairs made on the manuscript before it was resewn, and the progress and plans leading to the restoration of the Ellesmere Chaucer in a new, early-fifteenth-century-English-style binding. This summary, by Daniel Woodward and Maria Fredericks, is designed for medievalists who do not have technical expertise in conservation procedures.

After a special workroom in the Avery Conservation Center at the Huntington Library was equipped and readied by Maria Fredericks, conservator of rare books at the Huntington, Cains began the first phase of treatment, which extended from 4 April to 15 April 1994. He examined the manuscript and its modern binding by Rivière and Son (ca. 1911) and judged the manuscript to be sound enough for the disbinding process to begin at once. The general condition of the parchment was excellent, and the pigment adhered well to the surface, with minimal evidence of recent flaking.

Cains removed the cover intact, and then the silk headband and tailband and the vegetable-fiber sewing supports. He softened the animal glue on the spine folds with a sparing application of moisture (that is, a water and alcohol solution, or a poultice of viscous methyl cellulose) before scraping it away with a bone spatula. He removed the sewing threads from inside each gathering. After the separation of all the sheets in each gathering, Fredericks made a record of the sewing perforations and thread marks in order to track two separate sets of sewing stations, one medieval and the other believed to date from about 1802, the latter used again by the Rivière binder.[1] All of the folds were intact, but it was observed that the Rivière binder had repaired minor damage with paper patches, which Cains and Fredericks removed at the same time as the old adhesive. Some thick, unsightly goatskin parchment patches (applied by either the Rivière binder or the ca. 1802 binder) were also removed from gatherings A and B. Areas of pigment and gilding that were previously inaccessible because of the tightness of the binding were examined under a binocular microscope. A number of areas of cracked gesso were found and readhered to the parchment support (by means of a dilute gelatin solution). This consolidation was then carried out by Fredericks and by Susan Rogers, conservator of photographs and manuscripts at the Huntington.

Cains flattened substantially in each sheet the ridges and creases caused by the Rivière backing process; he humidified the fold area in order to relax the creases in the parchment and lightly pressed the sheet between blotting paper and glass weights.[2] After this Cains and Fredericks interleaved the sheets with acid-free blotters and placed them between boards. The degree of flatness achieved by this simple process was deemed sufficient for the photography required in making the facsimile.

The parchment was identified as calfskin,[3] the spine direction determined to be vertical, and the hair-sides identified. It was demonstrated, with the aid of a binocular microscope, that the text was entered before the decorations. At this stage Cains made some observations (based on his extensive experience) about the character and likely composition of pigments and inks present in the manuscript; he did not conduct any analytical tests. He felt that scientific analysis was not necessary for the progress of the conservation work, and that if questions should arise, such analysis could be undertak-

en in the future. The progress of the work done by Cains and Fredericks was monitored by Mary L. Robertson, chief curator of manuscripts at the Huntington; M. B. Parkes, of Keble College, Oxford; and Daniel Woodward, coeditor of the facsimile project.

The following parts of the manuscript provided highly important evidence of the structure and form of the original binding.

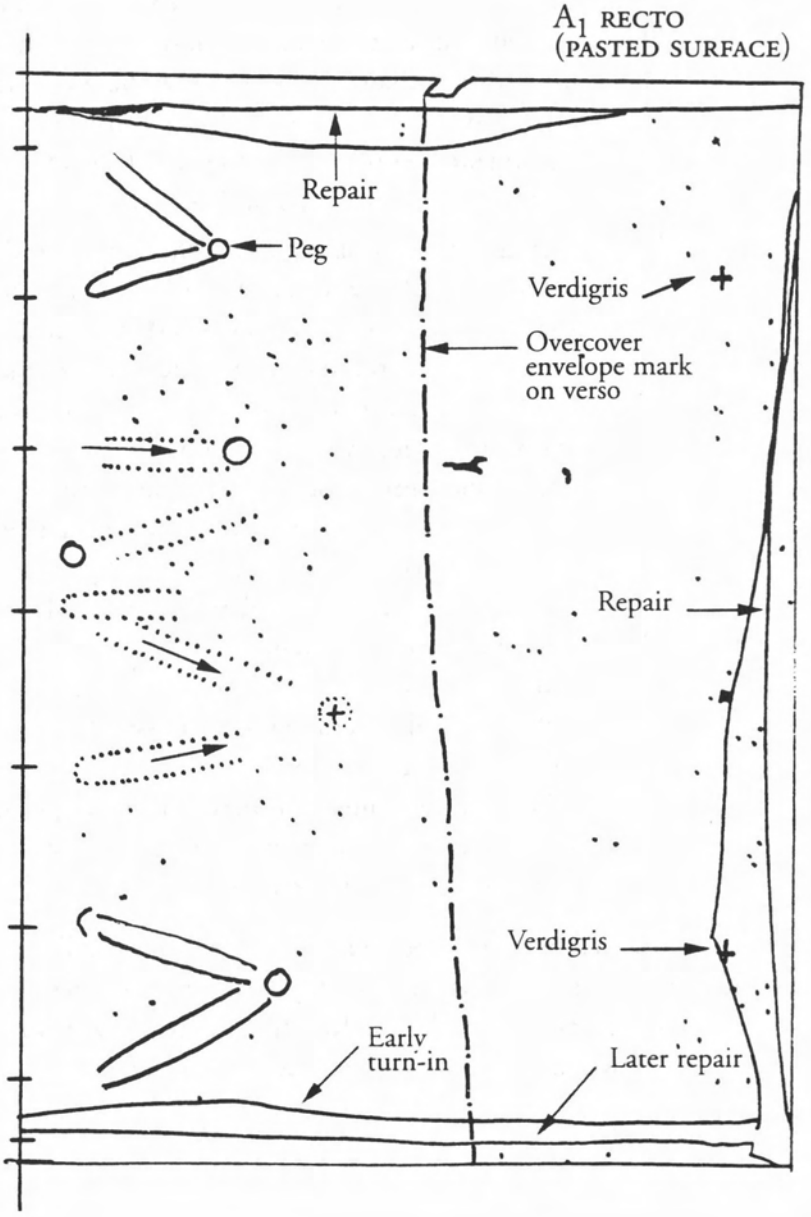
1. In the spine of the text block, the sewing thread impressions and needle perforations along the spine folds showed clear evidence of an original sewing on seven evenly spaced supports with a kettle stitch at each end, and of a later (ca. 1802) sewing using only six supports. The thread marks from the endband tie-downs were not as clear as the primary sewing marks, nor were they evident in the center of every gathering. This indicated that the primary endbands were sewn with a softer, possibly thinner thread than was used to sew the book, and that they were not tied down in every section. This was consistent with English practice in the fifteenth century as described to Cains by Nicholas Hadgraft of Corpus Christi College, Cambridge.[4]
2. Also revealing were the original end gatherings (A and B), especially the versos and rectos of the two pastedown leaves that once adhered to the inner surfaces of the front and back wooden boards.
    (a) Indentations and stains indicated the gothic "v"-shaped and horizontal channels and the round peg locations, which aligned with the original sewing stations.
    (b) Stains and impressions showed the profile of the original cover "turn-in" and a second set of marks from a later repair.
    (c) Two small round copper-green (verdigris) oxidation stains on each pastedown suggested that brass nails once fastened two clasp plates to each board.
    (d) The inner face of each pastedown also contained evidence: adhering to the recto of the back pastedown was a pink-stained, alum-tawed leather fragment.
    (e) The adhesive stains and marks on the upper sides of the pastedown leaves indicated the profile of the pockets (or envelopes) of an overcover (or chemise).

The original binding appeared to have been a typically plain yet sturdy binding of the early fifteenth century. The text quires were sewn to seven double thongs, with kettle stitches at the head and tail. After the text block was trimmed, two primary endbands were sewn, and then the cores (endband supports) were laced into quarter-cut

oak boards (possibly, but less likely, these were of beechwood),[5] which may have been covered by pink-stained, alum-tawed goatskin or sheepskin.

From the original endleaves Fredericks prepared two tracings showing the outlines of the channel and peg locations. Robert Schlosser, principal photographer at the Huntington, made two full-size, raking-light photographs of the upper surfaces of the pastedowns and enlarged color transparencies of both sides of these leaves. These sketches and pictures and Cains's studies of the evidence in the pastedowns led to most of the conclusions reached about the original binding (see FIGS. 3, 4). Seven double

FIG. 3



FIGS. 3 and 4
These diagrams were drawn after raking-light photographs, tracings, and careful examinations had been made of the pastedown leaves of the original endsheets (quire A, sheet 1, fol. i^{r-v}; quire B, sheet 1, fol. $viii^{r-v}$). The edges of the pocket of the overcover can be seen on fol. i^{v} and fol. $viii^{r}$; the fragment of tawed skin (i.e., part of the overcover) was found stuck to fol. $viii^{r}$. The verdigris stains show the location of the copper alloy (brass) nails attaching the clasps. The evidence of the channels and pegs that held the double cords linking the text block and the boards appears on fol. i^{r} and fol. $viii^{v}$. The "early turn-ins" are believed to be from the original binding; the "later repair turn-ins" probably came from leather strips used to repair edge damage to the boards before the circa 1802 rebinding.

supports, possibly twisted thongs of tawed skin, entered the boards from the outside through seven holes. These supports were recessed on the inside of each board into channels; they exited through four pegged holes staggered to avoid splitting the board. The channel patterns from the front and back boards showed that they were made as a nearly identical (rather than a symmetrical) pair:

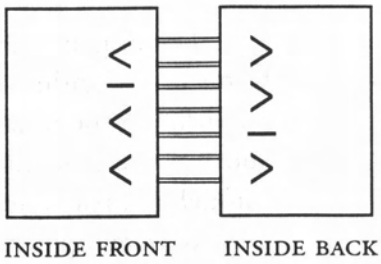
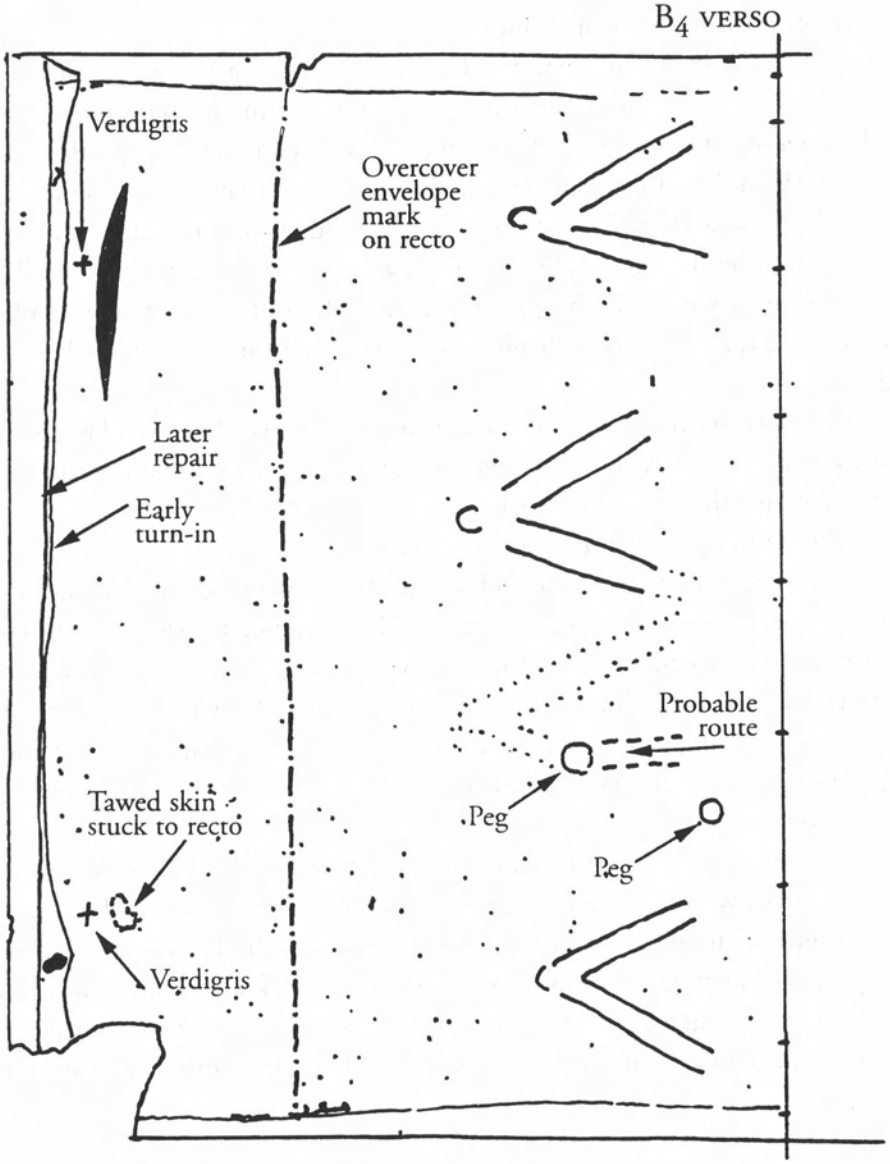


FIG. 4



The original Ellesmere binder was obliged to use both the parallel and chevron forms of the gothic way of attaching the cords to the boards, described by Michael Gullick.[6] In the former, a split or double thong crossing the spine entered the board and was recessed into a channel cut parallel to the head of the book, and exited through a single hole. In this system, there were as many channels and as many pegs as there were supports. In the latter, paired thongs entered separate holes but were set into channels that converged in a "v" shape, so that the two pairs of thongs exited through one hole. In this system, the number of pegs securing the thongs as they exited the board was half the number of supports. In the Ellesmere manuscript, sewn on seven supports, three chevron channels and one straight channel were employed to handle the odd number of supports.

Evidence of the original endbands, other than a few impressions of tie-downs in the center folds, no longer survived in the Ellesmere manuscript, but Fredericks and Robertson found in the Huntington Library an early-fifteenth-century London binding (HM 35300) still possessing part of an original elaborate endband that Cains decided to use as a model for the new endbands in the rebound Ellesmere Chaucer. The original endband in HM 35300 was made with a primary endband of plain linen thread sewn through the text block only and covered with a blue-and-white secondary endband with multiple cores that sewed the primary endband to the tawed skin covering.

Verdigris stains from brass nails or pins indicated that two clasps were fitted near the fore-edge of each board. Cains thought it likely that the boards did not extend much beyond the text block edges.[7]

The binding was almost certainly protected by a loose overcover (or chemise) of reversed alum-tawed leather, which would have extended beyond the board edges to form a protective "skirt" on three edges. The evidence for the overcover—a fragment of leather, stained pink, still adhering to the inner face of the back pastedown, and adhesive residues matching the form and location of pockets that held the overcover in place—was discovered by Fredericks. Hadgraft gave helpful advice about the characteristics of the overcover (see FIGS. 3, 4.)[8] Later—the date is unknown—the overcover was lost.

A massive woodworm infestation (evident from numerous holes in the endsheets) probably caused deterioration of the primary cover and the board edges. The three edges of the front cover and the fore-edge of the back cover had been repaired with strips of leather (most likely vegetable-tanned skin—judging from the color and the character of the stains left on the pastedowns). The neatness of this work suggested that it probably occurred in or after the eighteenth century. However, the evidence

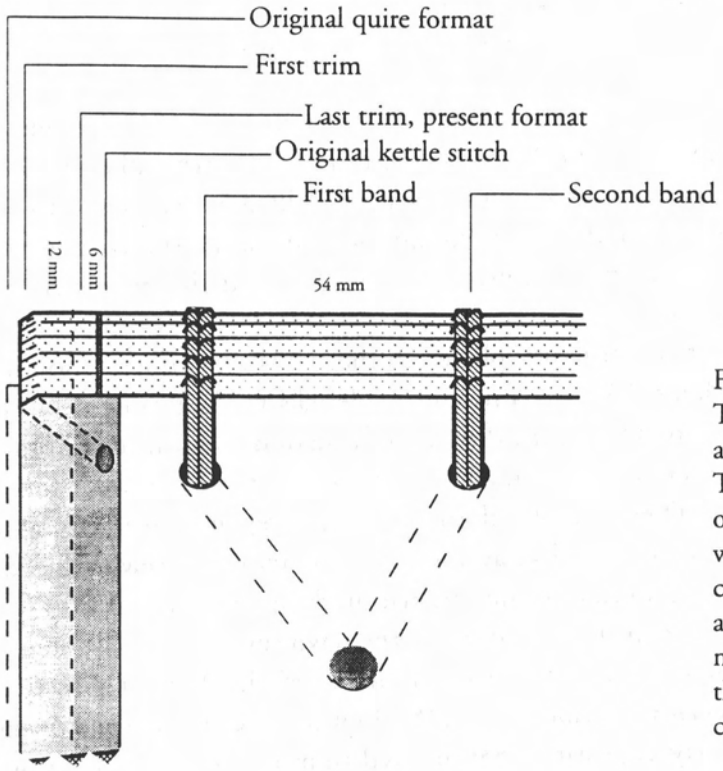


FIG. 5
The trimmings of the manuscript, and the head part of the back board. The "last trim, present format" occurred probably circa 1802. The way in which the double cords were channeled into one hole (and then anchored with a peg) is shown in the middle. Evidence of any lacing-in of the original endbands was lost in the circa 1802 cropping (see left center).

that the manuscript was rebound about 1802 prompted the conclusion that this edge-repair to the covers occurred some time before 1802;[9] a facsimile of folio 53^{v} published in the 1880s[10] demonstrates beyond reasonable doubt that major edge-cropping occurred before the publication of the 1911 facsimile but after remnants of the original cover had been removed—that is, the cropping probably occurred about 1802. Figure 5 shows these changes in the binding. Although the internal evidence was unclear, Cains concluded that most of the goatskin parchment-repair patches found on the manuscript were inserted by the 1802 binder, and that the Rivière binder's sewing used the perforations made about 1802. Cains also concluded that the edge-gilding was done by the Rivière binder and involved only a minimal trimming and scraping of the text block, the major cropping having taken place about a century earlier.

The color of the parchment and its translucent, almost transparent quality in some areas, and the stability of even the obviously damaged pigment (and other evidence) convinced Cains that the Rivière repair and binding process involved an overall fixing (dilute gelatin sprayed over the surface of the disbound sheets) and flattening of the entire text block. This process was still used in the 1960s, when Cains worked for the HMSO-British Museum Bindery; the methods of this bindery were very much in the tradition of the London West End binderies, of which the Rivière

establishment was a part. The photographer preparing the 1911 facsimile must have received the manuscript from Rivière in the form of unsewn gatherings held together only by saw-kerfs near the head and tail that were filled with adhesive to hold the text block together during gilding. Cains found the evidence persuasive that the leaf edges were gilded before the photography was done, and that the manuscript was resewn and rebound afterward.[11]

In the first reconstructive phase of the 1994–95 conservation project (27 February to 17 March 1995), Cains and Fredericks made a more detailed examination of the parchment and recorded more information about its condition, including tracings of the holes to be repaired and of the patches to be removed; and new patches were prepared. They completed the necessary repairs with natural membrane (parchment and fish skin) and gelatin adhesive. Then Cains sewed the text to seven double-linen cords according to the original mark-up and laced it into quarter-sawn English oak boards, shaped by Cains to fit the sewn text at the spine edges and cushion-beveled on the outside in the manner characteristic of an English fifteenth-century binding (especially as displayed in HM 35300). The channel and pegging system replicated as precisely as possible that inferred from the marks on the original pastedowns (see FIGS. 3, 4). Details that could not be inferred from the evidence in the Ellesmere manuscript were based on features in contemporary English manuscript bindings. The secondary decorative endbands will consist of indigo and unbleached linen thread sewn over the primary endbands, with three smaller crowning cores; it will follow the model provided by HM 35300.

The covering (to be completed in October 1995) will be of natural undyed alum-tawed calfskin. The binding will not have clasps, but the padding in a specially made oak carrying case will provide restraining pressure, thus keeping the manuscript from losing its designed shape. (The case will be based on a design by the late Edward

FIGURES OPPOSITE:

FIG. 6. M. B. Parkes (*left*) observes Anthony G. Cains disbinding the Ellesmere Chaucer.

FIG. 7. Cains separates sheets from the 1911 binding.

FIG. 8. Robert Schlosser (*right*) and Maria Fredericks operate the photographic equipment that was used to make the 203 x 254 mm transparencies for the facsimile.

FIG. 9. Technical problems in the proofs of the facsimile were discussed in a meeting held at the Huntington Library in 1994. *Left to right:* Fredericks, Schlosser, and Mary L. Robertson (Huntington); Masaji Nakano and Yoshiaki Arima (Mizuno Pritech); Richard Carpenter (Yushodo).

FIG. 10. Cains and Fredericks repair sheets of the manuscript after the photography and before the rebinding.

FIG. 11. Cains sews the quires of the manuscript to one of seven sets of double cords crossing the spine.

FIG. 12. The double cords are recessed into the channels and peg-holes cut into the oak boards of the 1995 binding, which was based on evidence of the original binding discovered by Cains and Fredericks. The binding of the "super deluxe" format of the facsimile follows the techniques used in the new binding of the manuscript.

FIG. 13. The 1995 binding of the Ellesmere Chaucer, nearly complete, seen here before final shaping of the oak boards and installation of the tawed-calf cover.

FIG. 6

FIG. 7

FIG. 8

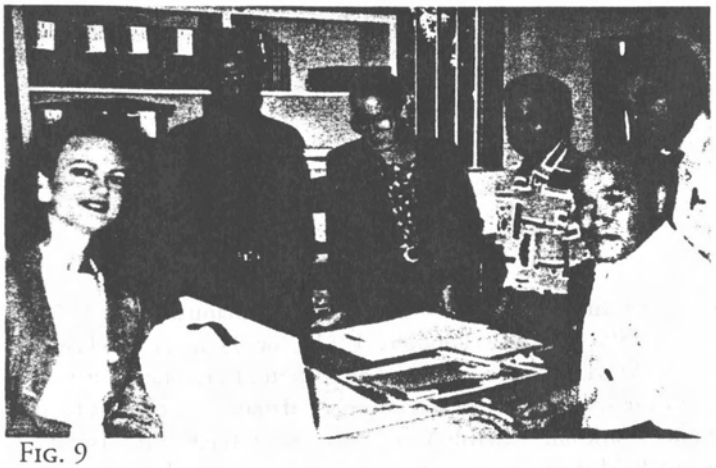


FIG. 9

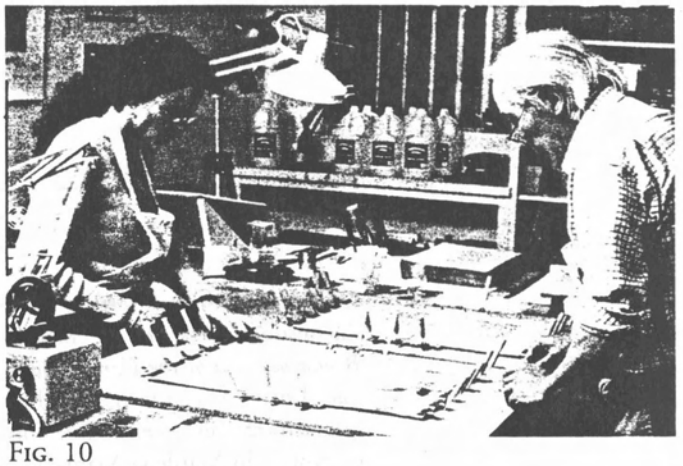


FIG. 10

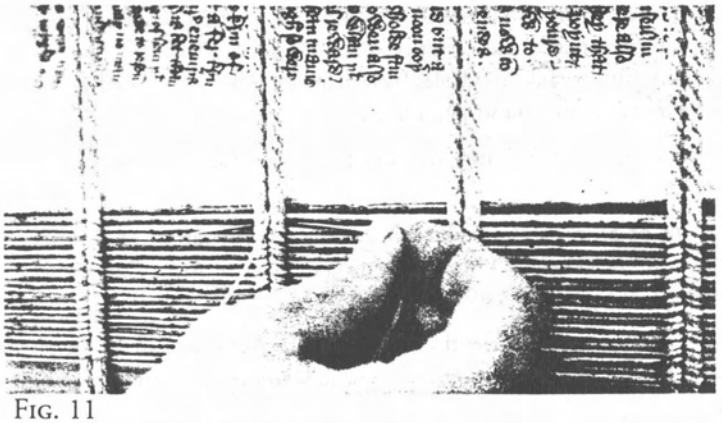


FIG. 11

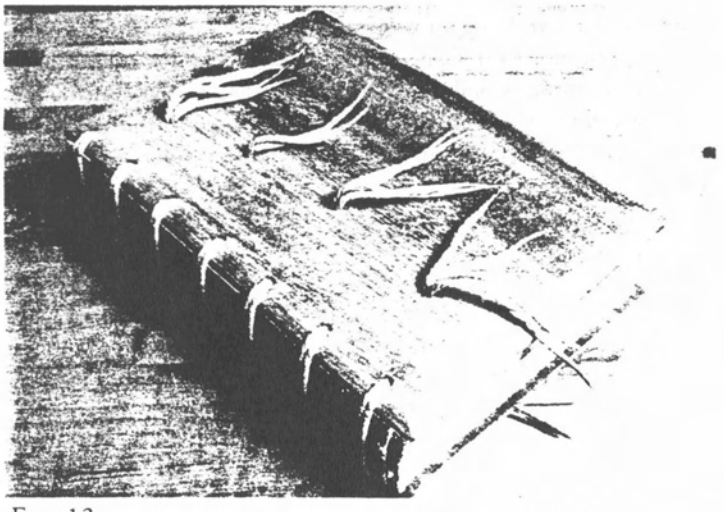


FIG. 13

FIG. 12

Barnsley for the late Roger Powell.) The new binding not only will be historically and aesthetically appropriate but also will allow the manuscript to open freely for handling and exhibition—that is, it will function quite differently from the way the very tight Rivière binding did. No adhesive will be used to attach any lining material to the spine.

Cains and Fredericks undertook all of the initial work of examination, documentation, and preparation for photography, and they will complete the subsequent repair and binding phase. Schlosser and Fredericks made a photographic record of the conservation proceedings.

NOTES

1. Rivière's unusual sewing method is not discussed in any contemporary manual, e.g., J. W. Zaehnsdorf, *The Art of Bookbinding* (1880; 7th ed., London, 1911), or Douglas Cockerell, *Bookbinding and the Care of Books* (1901; 3d ed., London, 1911). The pattern of perforation it produced may be seen in medieval texts, but the sewing method was entirely different, and this has been understood only recently (see Christopher Clarkson, "English Monastic Bookbindings in the Twelfth Century," in Marilena Maniaci and Paola F. Munafo, eds., *Ancient and Medieval Book Materials and Techniques* (Vatican City, 1993). Cains was convinced that the Rivière binder's method was a response to a technical problem found only in the Ellesmere manuscript: the Rivière binder believed that his sewing ought to follow the 1802 mark-up, but because the holes were damaged, he improvised a special sewing technique for anchoring the threads into sound parchment.

2. See Anthony G. Cains, "Repair Treatments for Vellum Manuscripts," *The Paper Conservator* 7 (1982–83): 15–23.

3. See Cains, "The Surface Examination of Skin: A Binder's Note on the Identification of Animal Species Used in the Making of Parchment," in Felicity O'Mahony, ed., *The Book of Kells: Proceedings of a Conference at Trinity College Dublin, 6–9 September 1992* (London, 1994), 172–75.

4. Christopher Clarkson referred Cains to their mutual friend Hadgraft, who gave Cains much helpful advice about the history of medieval binding in this period and especially about the characteristics of the overcover as a binding device.

5. For a discussion of insect infestation of oak and beechwood, see Harold Plenderleith, *The Conservation of Antiquities and Works of Art* (London, 1956). Cains's experience was that the larger animal, the death-watch beetle (Xestobium), attacks the sapwood of oak but not the heartwood; nonetheless he deferred to Hadgraft's opinion that beechwood was unlikely to have been used in this period, and that oak sapwood was often placed toward the spine for relative ease of working. Hadgraft reported that he had often found this area to be damaged.

6. Michael Gullick, contribution on bindings, in R. A. B. Mynors and R. M. Thomson, *Catalogue of the Manuscripts of Hereford Cathedral Library* (Cambridge, 1993).

7. See Bernard C. Middleton, *A History of English Craft Bookbinding Technique* (London, 1963; supplemented ed., 1978). Middleton's views were confirmed by Cains's examination of several early-fifteenth-century English bindings, including HM 35300.

8. For information about overcovers, see Graham Pollard, "The Construction of English Twelfth-Century Bindings," *The Library*, 5th ser., 17 (1962): 14 (also illustration); Gullick, *Catalogue of Hereford Cathedral Library;* and Clarkson, "English Monastic Bookbindings in the Twelfth Century," 2:181. Cains had examined a late-twelfth-century Fountains Abbey manuscript in Clongowes Wood College near Dublin that retains its complete original overcover. A substantial part of an overcover survives in the Huntington Library, HM 35300, a mid-fifteenth-century manuscript of Bede's *Historia Ecclesiastica* and other works, in a fifteenth-century binding probably made in London.

9. The first report that the manuscript was rebound circa 1802 appeared in Lady Alix Egerton's preface to *The Ellesmere Chaucer Reproduced in Facsimile* (Manchester, 1911).

10. F. J. Furnivall, ed., *Autotypes of Chaucer Manuscripts* (London, 1876–86), pt. 4, Chaucer Society, 1st ser., no. 74.

11. After it was returned to Rivière, the manuscript was sewn and the spine coated with hot and fluid animal glue and then rounded and backed. The endleaf bifolia (with ungilt edges) were then oversewn onto the first and last gatherings (i.e., A, B), the sewing threads attaching the single flyleaves already tipped on; and the work completed by the standard procedures of the time (see also Middleton, *History of English Craft Bookbinding Technique*).