Some aspects of early Islamic bookbindings from the Great Mosque of Sana’a, Yemen

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Introduction

In 1971 heavy rains caused the west wall of the Great Mosque of Sana’a, capital of Yemen, to collapse. During the ensuing rebuilding of the wall in 1972 a veritable treasure of very early Qur’an manuscripts was found in a space between the ceiling and the roof together with an important number of fragments of early Islamic book covers.

Very little is known about bookbinding in early Islamic times, and the only other great collection of ancient bindings exists in Kairouan, Tunisia. There are 95 fragments in Sana’a, divided into: covers with wooden boards, which held textblocks written on parchment and are designated by a number preceding by the letter “C”; and covers with a paper core (therefore containing paper leaves), which are codified by “D” and a number. So far I have primarily worked on the first group, and the three examples I will present here all belong to it.

Figure 1 shows the typical construction of a book with wooden boards. In early times the format always seems to have been oblong, meaning longer in the horizontal direction than it was high. The bookblock was well protected by a virtual box enclosing it; that is why this type of book is often referred to as “book box” or “box book”. In addition to the very sturdy front and back covers there was a “protective wall”, made of leather, surrounding the bookblock on the three open sides—the upper and lower edges and the fore-edge—whereas the fourth side, the back or spine, was guarded by the back or spine leather; the height of this wall corresponded to that of the textblock. The fixture to keep the book firmly closed consisted of one or several pegs inserted into the edges of the front cover, and corresponding leather loops.

Fig. 1. Construction of an early Islamic book with wooden boards.

or braided or interlaced leather thongs (probably with a metal catch at the end) laced through the back covers in such a way that the thongs emerged on the outside near the edges and were then slipped over the pegs, while the ends were still visible on the inside. This method of binding not only kept the textbook—generally believed to be a Qur’an—well protected, but also ensured that the otherwise unruly parchment leaves were kept flat under the slight pressure of the wooden boards held together by the fastenings just described, which had the same function as the clasps on European medieval bindings.

C 6/F and 6/B (Figs. 2-5)

Front and back covers of one volume, but separated; oblong format; wooden boards; dark brown leather, goatskin, metal peg (iron?) in fore-edge

1. For eight years I was the conservator in the project for the preservation of the manuscripts, funded by the German government. After the termination of the project I obtained a generous research grant from the Getty Foundation, USA, to start my study of the book covers fragments and I am presently continuing this research under a grant from the Max Van Berchem Foundation in Geneva, Switzerland. I am very much indebted to the Dept. of Antiquities, Museums and Manuscripts in Yemen for the permission to conduct this research.


3. Please refer to the glossary for all bookbinding terms.

of front cover, held in place by a stud; remnants of triple leather thongs near center of fore-edge of back cover.
  Inside: parchment pastedowns with inscriptions on both covers; parts of protective wall at upper and lower edge of back cover.
  Leather and boards in good condition; a few stains and dirt patches; small losses of leather at corners, especially on back cover, hardly abraded at all.

**Measurements:**
  Front cover:
  - height 13.9 cm, length 20.8 cm,
  - thickness: fore-edge and center 8 mm,
    hinging-edge 6 mm, beveled on inside;
  Back cover:
  - height 13.9 cm, length 20.8 cm,
  - thickness: fore-edge 8 mm, center 9 mm,
    hinging-edge 6 mm, beveled on inside;
  Spine (incomplete):
  - height 12.5 cm, width 2.6 cm;
  Protective wall:
  - height 1.8 cm.

This is one of the very few instances in the Sana’a collection where front and back cover of the book are both preserved, though they are separated. The decoration—the same on both covers—is superbly executed. And from my own experience as a bookbinder I would say that such sharp and precise impressions can only be achieved by heated tools, although some binders contend that it is possible to make quite sharp impressions with a cold tool in moist leather.

The center panel contains an interesting interlaced design built-up from unusual straight-edged components; unusual in the sense that interlaces are more often composed of curved elements. However, this particular pattern seems to have been quite popular, since there are two examples with a very similar design in Kairouan.

The principle of the pattern is that double horizontally and vertically intertwined “cords” are intersected by single diagonal “cords”, leaving empty squares, standing on their points, in between. The “cord” effect is created by relatively regular double hatchings, which in turn are produced by the repeated impressions made with a four-part tool. The triangular fields, formed along the edges by the diagonal “cords”, are filled with a four-lobed “cloud” stamp (for lack of another name, but I think it is quite descriptive), which is slightly wider than it is high (Fig. 2).

Two continuous borders frame the center panel, divided from it by triple (left and right) and quadruple (top and bottom) lines, from each other by very narrow double lines, and from the edges by wide double lines. The inner border is a very beautiful “twisted rope”, the outer one just a row of four or less oval dots. The “twisted rope” is created by three stamps: a curved stamp for the outline, a slightly oval stamp with a small protrusion in the middle for the center, and double hatchings, as in the “cords” of the center panel, for giving the stunning impression of a big rope.

**Front cover C 6/F**

A metal peg with a rounded conical head, probably iron since it is slightly rusty, is inserted into the center of the fore-edge. It is kept in place by a quite prominent (0.55 cm high), slightly squarish metal stud (most likely iron also), the pin of which penetrates and therefore anchors the tail of the peg and ends just at the inside of the cover (Fig. 3).

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5. Personal communications with János Szirmai. In the literature the use of heated tools in early bindings has been disputed.
6. a) Objets Kairouanais (op. cit.), n° 69, p. 153, pl. XX; very similar to C 6 though considerably bigger, 22.6 x 31.6 cm.
7. See glossary.
8. In Objets Kairouanais, the lines are equally counted as borders, I do not perceive lines as individual borders but rather as optical elements dividing and defining them.
9. A single stamp, very appropriately called a “catapultère” stamp, is very often used in the “twisted rope” borders instead of hatchings.
10. Compare Objets Kairouanais (op. cit.), Fig. 2, a and p. p. 18.
The pastedown is a sheet of parchment with a *Wa'af* inscription from the Great Mosque in Sana’a in an unexciting cursive script. It was glued down before the turn-ins of the cover leather, which are relatively narrow and not pared down (Fig. 4).

A piece of inscribed paper, part of a “du’á” or prayer, certainly a later addition, was glued down under the parchment leaf at the hinging-edge and extends 9.5 cm onto the cover. Maybe it served as a hinge for the textblock, although that would have been an extremely weak connection. This leaf is not an extension of the small piece of paper with writing still stuck to the inside of the spine.

The remnants of three leather thongs near the center of the fore-edge correspond to the peg on the front cover; together they formed the fixture of the book.

Another piece of parchment is glued down under the missing upper left corner of the parchment pastedown; this does not seem to be a repair but the original patching of a leaf that was too small to begin with. The pastedown was glued onto the cover before the turn-ins and the protective wall. The inscription is a *Wa'af* note and written in a somewhat frilly Eastern Kufi (Fig. 5).

The edge of a paper sheet can be seen protruding from under the firmly attached pastedown at the hinging-edge. Because this fringe is so small it is impossible to say if it is the same piece of paper of which a remnant is sticking to the inside of the spine.

Fragments of the protective wall are still attached to the inside along the whole length of the lower edge (19.8 cm) and at the inner (right) end of the upper edge (7.6 cm). The wall was rather low, which means that the book most likely contained only a part of the Qur’an11. The leather of the wall was

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11. It was altogether possible to separate one volume of the Qur’an into individually bound sections. For example, a Qur’an divided into seven books seems to have been quite common.
tooled with more or less vertical lines, more or less evenly spaced, before it was folded onto itself and glued together, so that the inner wall is the continuation of the outer one. This double thickness leather was folded to match the height of the bookblock, and the rest was glued along the edges on the inside of the cover, on top of the turn-ins of the cover leather. As can be seen in places where the protective wall is missing, the turn-ins had been pared down in order to minimize the built-up of too much leather.

The original spine is still connected to the back cover. It is not complete any more and the leather is very cracked, but a decoration of parallel lines is still just visible.

There is no direct evidence of the bookblock having been connected to the binding – no remnants of sewing threads or headbands, and no visible holes for either. Maybe the textblock was just sewn together separately and lying in the box without any means of attachment. Or maybe the pastedowns were originally larger and folded around the first and last gatherings, then sewn together with them and glued onto the insides of the covers. In this way there would have been at least some bond, even if very weak, between bookblock and binding. The papers glued under the pastedowns, most likely repairs or reinforcements, certainly belong to a later time, and even if they were in some way attached to the bookblock they could not have provided a strong joint at all. The remnants of glue on the hinging-edges of the covers confirm that the spine leather was glued directly onto them, and probably it was glued onto the back of the bookblock as well, as traces of glue on the inside of the spine leather would lead one to believe. But this is not necessarily the original way the book was bound – it could be a later method.

C 11 (Figs. 6-11)

Back cover; oblong format; wooden board, split horizontally; dark brown leather, goat, surface very dirty and quite deteriorated, part along right upper edge missing, revealing wooden board with four blocked-up holes underneath; remnants of multiple layers of leather near hinging-edge at left are remains of consecutive new spine leathers; ends of threads from headband at upper left corner.

Inside: part of protective wall along lower edge and continuing halfway up fore-edge, brown leather, goat; fragment of a parchment manuscript leaf used as pastedown; piece of paper with writing glued over the break in the board, but torn as well.

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12. The only case in the Sana'a collection where the whole book is still preserved as a unity shows that the bookblock was joined to the covers in this fashion.

13. See glossary.
There are two continuous borders around the center panel, separated from each other and from the center design by "parallel" lines, which are, actually, quite irregular and crooked: triple between inner border and center panel, double (or triple — it is very difficult to see) between inner and outer border, and possibly quadruple between outer border and edge of cover.

I cannot identify with certainty the stamps used to create these borders, as the leather is already too deteriorated and damaged. Even under the microscope things are not much clearer. The inner border seems to consist of a row of small lozenge-shaped stamps with a circular form in the center. But I cannot quite see if only the outline and a small circle in the center were impressed (Fig. 8 a, b), or if the entire surface of the lozenge was sunk into the leather and had just a protruding point or small circle in the middle (Fig. 8 d, e), or if it was kind of a combination of both (Fig. 8 c)14. The stamp of the outer border, also arranged in a single row, most likely is annular (Fig. 8 f, g). The drawing of the cover shows one of these possibilities (Fig. 7).

14 Dark areas are impressed into the leather, white areas are left raised.

The remnants of three leather thongs can still be seen near the center of the fore-edge at the left. (With the cover in the correct position, they would be on the right, of course.) These and the protective wall indicate that this is the back cover of a book.

A double thread of the former headband, dyed blue, is still tied into a hole in the lower right corner (actually the upper left corner) of the wooden board. The blue is most probably indigo, but that could only be confirmed by scientific analysis15. Other than the headband there are no traces of any connections between bookblock and covers.

15 I would like to find the funding to have all the materials of these covers analyzed: the wood of the boards, the leather, the remnants of sewing threads, etc.
Since the joints between covers and spine are the weakest part of the book, and through constant use very prone to tearing, it is quite natural to find repairs especially at this spot. There are several pieces of leather glued on top of each other at the right side (in reality the left side) of the cover, which bear witness that the spine was renewed at least three times. Twice the new leather was inserted under the cover leather—a more elegant and careful way of repair, and possibly stemming from the time this cover was still the front of a book. The piece of leather immediately under the cover leather shows a vertical row of seven annular circles at the very edge, the last indication that this new spine was decorated. The third time, the repair was executed as sloppily as can be expected from the use of the cover in an upside-down position; the new leather was just glued onto the cover, hiding almost a fourth of it from view.

On the inside of the cover (Fig. 10) the remains of an undecorated protective wall show with no doubt that this was a continuous strip of leather, a real “wall” protecting the three open sides of the bookblock. Until now this form of construction has not been clear, but this and other examples from Sana’a should settle the dispute.

An old parchment manuscript leaf, now only partially preserved and quite deteriorated, was glued to the inside of the cover before the turn-ins. The script is very small Kufi. My Yemeni colleagues identified the text as Qur’anic, though they could not say from which section of the Qur’an since the writing is, for the most part, illegible.

The horizontal break in the board was mended (under the parchment leaf) at a later date with a piece of paper which also bears writing, though in a much later and not particularly “calligraphic” script. This is part of a “khusumah”, a legal document, which was used just for the repair.

For me probably the most intriguing feature of this cover is the evidence of recycling, particularly the evidence that it was recycled twice. The writing being upside-down indicates that the board with the tooled leather already attached was reused—since I assume it is clear that no devout Muslim binder would write a praise of God upside-down. Besides this, it is also very strange that this pious formula was on the back of the book, a fact found very inappropriate, to say the least, by my Yemeni colleagues. Was the binder who reused the cover illiterate? Or could he have been a non-Muslim, and therefore unaware of the sacredness of this expression?

The earlier recycling becomes apparent when the cover leather is removed and the wooden board is examined alone (Fig. 11). Not only can one see the impressions of the later tooling in the soft wood very well, but two other features attract attention: the four plugged-up holes along the lower (actually upper) edge, and the row of inlaid “cartouches” near the upper (in reality lower) edge. One has to look rather closely to see that this is not a continuously inlaid strip, but that the insets were done in sections. Both features have nothing whatsoever to do with the design on the cover leather, therefore they must have been there already before, and bear witness to a former and different use of the board.

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The holes could originally have served for attaching the sewing threads or cords of the bound bookblock to the board, which would mean that this book was of upright and not oblong format. Some of the holes are filled with leather pieces—if they were inserted as a means of blocking the holes, or if they are remnants of former attachments I cannot say.

The inlays are of unidentified material, probably a different kind of wood. I have no idea what their purpose could have been, other than decorative. Maybe this was originally the cover for a Coptic book? There are Coptic wooden covers with inlaid decoration (though in ivory) in the Chester Beatty Library. The upright format and the use of the holes for attaching the bookblock would fit this theory.

I am aware that the “Coptic theory” is a bit far fetched, but I think it is not impossible. Binders obviously did reuse older books or parts of books, which is really not very surprising; they may not always have been aware of the origin of this material, or they did not care, or they were too poor to have much choice. In any case, this cover shows that even Qur’ans could be recycled.

C 27 (Figs. 12-15)

Part of a protective wall; brown leather, goat, abraded, torn.

Measurements:
- height 9.3 cm, of which decorated area 6.9 cm;
- length 33.9 cm.

That this is part of a protective wall is indicated not only by the format of the leather strip but also by the fact that it is only partly decorated (Figs. 12-13)—the decorated area providing the actual “wall” for the box book, whereas the undecorated part was glued onto the inside of the back cover, now lost. The leather was folded over—remnants of the inside wall are still attached—and the two sections were glued together, making this wall of double-thickness leather quite sturdy without any inner support. The height of the wall allows the conclusion that this book contained a whole Qur’an. Considering the length of the strip I assume that it ran either along the upper or lower edge of the cover, since the book would have been quite big had this strip protected the fore-edge (though this cannot be totally ruled

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17. See footnote 13.
18. Bindings nos. 1, 2 and 3-3a, described in Berthe Van Reijmert, Some early Bindings from Egypt in the Chester Beatty Library, Dublin, 1958. Some people believe, though, that they were not necessarily book covers but could have been, for instance, parts of boxes.
19. On the assumption that a book with the inscription “The realm belongs to God” on its cover must have been a Qur’an.
out, of course. It certainly must have been a book with extraordinary decoration if the protective wall was already as highly embellished as this – I wish I knew what the decoration on the covers was like!

This piece of a protective wall is interesting because of its lavish decoration, though only two stamps were used: a square knotted stamp and a circular stamp with two lines of script in the center (Fig. 14 a, b). The level of craftsmanship is very high, the tooling was executed with great precision, and, I believe, with heated tools. Unfortunately, the surface is so badly rubbed that none of the script stamps gives an absolutely clear picture of the writing (Fig. 15). Besides, the writing itself seems ambiguous and allows for more than one interpretation. Several people, including my Yemeni colleagues, have already pored over it, but as yet, no conclusive answer has come up.

There are two examples of stamps with similar writing cited in Objets Kairouanais²⁰, though in both cases the writing is contained in one line. But in both of these stamps there is the same exuberant swing to the final Ya' of the first word that marks the final Ya' of the lower word in the stamp of C 27, which is also often taken for a Nun because of the knobly ending of the tail²¹.

Fig. 14. Script stamp and knotted stamp.

²⁰. The two largest covers in Kairouan, no. 22 and 53, measure 27.4 x 36.8 and 27 x 37 cm, which would support my assumption: Objets Kairouanais (op. cit.) p. 90 sq.
²¹. Objets Kairouanais (op. cit.), Fig. 58 a and 1.

The interpretation of the script given in Objets Kairouanais is the eulogy baqā' bi-Līlah, "Duration (permanence, continuance, lastingness, immortality) belongs to God". Abdulmalik al-Maqhafi, the director of the Dar al-Makhṭatat, the Manuscript Library in Sana'a, recently came up with another reading: tiqāṭi bi-Līlah, "My trust (faith, confidence, reliance) is in God".

My rendering of the stamp is the result of looking at many of the impressions under the microscope again and again – new interpretations of the meaning are welcome!

And a last thought: it seems somewhat odd that the script stamps point consistently towards the right and slightly down, so that the viewer cannot really read the inscription unless he holds the book in a vertical position. The binder must at least have known that there was writing on the stamp, even if he was illiterate; and he was not careless because the stamps are carefully aligned. I think that readability was just not a priority for him, more important was the use of the stamp itself, and to apply this praise of God in a well thought-out and beautifully executed way.

No exact dating of these covers is possible because no pertinent inscriptions have been found. Of the two bindings in Kairouan which are similar to C 6, one is dated to the end of the 9th c. AD and the second one to the 10th c. This is probably also the time frame for the bindings described here, although C 27 could be of a somewhat later date. But to answer this question further research by an art historian is needed, and some scientific dating would certainly help.
Short glossary

annular circle: two concentric circles of different size, giving the impression of a ring.

beveling: reducing the thick and clumsy edges of a board.

bookblock or textblock: the seven leaves of a book without the cover.

boards: material supplying the core for the covers of a book; these can be made of wood, as in the cases described here, or of sheets of paper glued together, called paste-boards, which later developed into cardboard. (Therefore the name “board” can also refer to a very heavy and thick kind of paper.)

borders: rows of stamps or of continuous patterns around the center panel, divided from it and from each other by single or multiple lines.

center panel: central area of decoration, mostly rectangular and precisely defined by lines.

covers: those parts of a binding which cover the front and back sides of a book -front and back covers; together with the spine they form the whole protective cover of the bookblock.

fastenings or fixtures: devices to secure a book in a closed position -here metal pegs with corresponding leather thongs.

fore-edge or front edge: frontal edge of the bookblock, opposite the spine; the other two open edges are called upper and lower edge.

four-part tool: any tool with four individual parts. The tool used to create the hatching on C 6/F may have looked like Fig. 16 a or more likely like Fig. 16 b.

A two-part tool for hatching purposes, like the one probably used on C 11, would have looked like Fig. 17 a or b.

Figure 18 shows the way to ensure an even spacing between the impressions: to anchor one part of the tool in the impression already left by the other part in the previous stamping.

gatherings (also quires, sections, signatures): the assembled units of folded leaves, several of these make up the bookblock.

headbands or endbands: a protective and often decoratively stitched addition to the head and tail (top and bottom end) of the spine of a bookblock.

hinging-edge: the edge of the cover next to the spine, where the cover is “hinged” to the bookblock.

lines: any single or multiple lines impressed into the leather. It has become the custom with some art historians to call the lines “fillets”, but a fillet is actually the tool used to create lines. I prefer to call the lines simply “lines.”

Another tool for creating lines is a creaser, which is a very simple tool and not heated. (Bookbinders in the souq of Sana’a use one end of their enormous house keys!)

paring: reducing the thickness of leather.

pastedowns: sheets of parchment or paper glued (or pasted) onto the inner sides of the covers.

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**protective wall**: continuous upright strip of leather—mostly of double thickness and of the same height as the textblock—glued onto the inside of a back cover along the three open edges of a bookblock.

**spine** (sometimes also called back): the edge of the bookblock where the gatherings are sewn together, and equally that part of the binding covering this area.

**stamp**: the expression can be used for the tool or for the impression it makes.

**tooling**: decorating a leather binding by impressing cold or heated metal tools into the moistened leather already glued onto the boards of a book, whereby the pressure is exerted by the bookbinder himself and not by a mechanical device; what I am referring to here is only blind tooling, which means that no gold or other foils are used to enhance the impressions.

**turn-ins**: the extra length of cover leather turned around the edges of the boards and glued onto the insides of the covers.