

Understanding Manuscript Structures and Bindings from the Islamic Lands

Examination, Exchange and, Eventually, Progress

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Abstract The Leiden collection contains nearly 7,000 Arabic manuscripts that originate from all parts of the Islamic world. The autopsy of hundreds of original manuscript structures and bindings was possible because many of the books were never much interfered with. After laying the foundation of the technical aspects of the Islamic book-binding tradition, the focus of my study turned to more regional aspects. A sub-survey of manuscripts from Yemen – undertaken in the context of a digitisation project – illustrates how much can still be learned from previously examined items when they are re-examined in a more condensed and dedicated study.

Keywords Arabic manuscripts. Islamic world. Codicology. Indonesian manuscripts. Yemen. Unsupported link-stitch. Gold dust. Mica. Bock-stamped leather doublures.

Summary 1 Introduction. – 2 The Arabic Manuscript Collections. – 3 Similarities and Differences. – 4 Examination of the Physical Items. – 5 Introducing Students and Interns to the Arabic Collections. – 6 Study of Physical Items in Diverse Regions. – 7 Conclusive Thoughts.

1 Introduction

When we train as book conservators or codicologists, the knowledge we acquire is determined by a specific cultural tradition and set of values. It is useful to be aware of this, as it helps us recognise

instances in which we may not be adequately schooled, or, when confronted with a divergent perspective, it may help us pause and try to understand why such a different outlook can exist next to our own. How do we establish that our knowledge is correct? And how do we know when to question something that we thought we knew or understood?

We all have our 'formal' training and then, after that, we learn much more in our conservation practice, and we learn to contextualise or apply the theory we read or had been taught. The reality is that we come across objects that do not match the textbook descriptions, and we may follow guidelines that are not so successful as we expected. That is exactly what happened when I started working with the Arabic manuscript collection in the Leiden University Library, 23 years ago. My western training and five years of experience working as a book conservator in a private practice did not prepare me for working with manuscripts from the Islamic lands. The meagre literary sources available then did not cover this book culture well, and the conservation treatments that were suggested had a strong - and as it turned out, unhelpful - western perspective.¹ As I tried to come to terms with the first unsatisfying results, and began to question the opinions in these sources, I started to examine the manuscripts carefully, and this resulted in a long (and rather joyful) trajectory of study and professional development. This paper describes some of the results from recent projects and identifies ways for further studying this still understudied bookbinding tradition.

2 Arabic Manuscript Collections in Leiden

A few words about the collection may be useful. Compared to a country such as Italy, universities in the Netherlands are relatively young, yet Leiden university is the oldest in the Netherlands, founded in 1575. The library's collection contained Middle Eastern items early on.² The oriental manuscripts at first fitted in one cabinet, but as the only Dutch university with such a strong focus on oriental studies, the number of items increased rapidly. When I started the conservation workshop in the library, in 2000, the Middle Eastern manuscript

1 I have written in detail about this in my doctoral thesis (2014) and the subsequent publication (Scheper, 2019a, 196-224).

2 In a depiction of Leiden University Library from 1610 - engraved by Willem van Swanenberg after a drawing by Jan Cornelisz. van't Woudt and published by the Leiden bookseller Andreas Cloucq - the collection can be seen housed in a closed cabinet, on the right side of the room. See https://digitalcollections.universiteit-leiden.nl/view/item/2528868?solr_nav%5Bid%5D=c1f6599ffcab5715c1f7&solr_nav%5Bpage%5D=0&solr_nav%5Boffset%5D=0.

collection comprised around 6,500 manuscripts. Many of those had first been in the private collections of scholars in the sixteenth and seventeenth centuries and were bequeathed to or purchased by the library. In later centuries, many items also reached the library through contacts established by diplomats and through trade.

When discussing the Islamic world, then South-East Asia is a region of importance as well. With the East Indian Company starting in 1602, the Dutch presence in the east lasted centuries, and Leiden has a large collection from the Malay, or Indonesian, world. Not all these manuscripts are paper documents or books, and not all of them are in Arabic script or language. We find bark substrates, palm leaf, and bamboo, to name a few, and they can be written in languages such as Javanese and Buginese, in different scripts among which Jawi, that is based on the Arabic script. In this paper, however, the focus is on the book as a codex, and its structure and binding.

3 Similarities and Differences

The library did not have a conservation studio when I started my work. There had been ad hoc treatments of objects in the decades before 2000 by conservators in private practice, yet never on a large scale. As explained above, when I set up the studio, I had about five years of working experience and a fairly solid training, but only in western book conservation. These manuscripts from the Middle East and Indonesia were therefore unknown territory to me. Compared to manuscripts and printed books from Chinese or Japanese culture, however, they do not seem as divergent. The substance and quality of the paper is much closer to European paper than Far Eastern papers - which is not very strange when you realise that the Arabs brought the technique of papermaking to Europe. And the functionality, format and materials of the books are also not that different. Again, this probably is a logical result of both book traditions - the Arabic and European - having originated in the Levant, based on the same initial development of the Coptic Codex.

I thus gathered that paper repairs could be treated with Japanese papers in the common fashion, and problems with sewing structure and binding materials would probably not require much extra knowledge. Nevertheless, I treaded carefully, while I tried to catch up with the literature. This is when I first became aware that some of the things written about the physical properties of Islamic manuscripts were not correct, and that some of the treatment suggestions did not actually work so well for these objects. They were too interventive and interfered with the objects' material, historic information. The most important misunderstanding that became apparent was the notion that the predominant structure was inadequate and

weak.³ Islamic manuscripts have an unsupported link-stitch sewing, and the lining material and leather spine of the binding are adhered directly onto the textblock spine; the books therefore have a flat spine. Combined with the fact that the sewing commonly uses two stations only, this was thought to cause problems and damage. The supposed solution was to adjust the structure, adding more sewing stations or even supports, and to change the construction by adding a paper tube to create a hollow spine. In short, to use western bookbinding methods in order to ‘improve’ the traditional artefact. In my first years in Leiden, I have used these suggestions in a few treatments but soon learned that this approach was dissatisfactory as well as unnecessary.⁴ As I have talked and written about the misperception of the Islamic structure sufficiently, there is no need to go into this here.

There is also no need to address the actual structure of the Islamic book at length; much information about the material characteristics of this bookbinding tradition has become available over the past two decades. The question rather is: how do we proceed from there? Starting with the archetypal construction, the most important characteristic to consider is the composite unity of the unsupported link-stitch sewing structure and the textblock spine that is lined from head to tail with either leather or textile, after which a primary endband sewing connects all the gatherings ‘and’ the spine-lining material. What is interesting is that these binding components as such were known in the 1980s and 1990s (although the fact that leather was often used as spine-lining material was not reported), but the structure as a whole and the manner in which the binding was attached was not well understood. That too is not so strange given the fact that most of the Islamic manuscripts that ‘were’ studied belonged to western institutions, and the objects were often severely damaged or fragments only, or they had already seen a treatment or rebinding campaign based on a western model.

3 “Neither Weak Nor Simple. Adjusting Our Perception of Islamic Manuscript Structures” was the title of the first paper in which I presented my findings concerning these misperceptions, at the Care & Conservation of Manuscripts Symposium in Copenhagen. See Scheper 2014. For a thorough discussion of the conservation literature on Islamic manuscripts to that date, see Scheper 2019a, 196-224.

4 IADA Conference themed ‘Looking Back, Moving Forward’, 2015. See also Scheper 2017; 2021.

4 Examination of the Physical Items

In Leiden, however, I had access to many manuscripts that still had original structures, and the wide range of volumes represented the bookbinding tradition as it had developed over many centuries and across the Islamic lands. This rendered the collection suitable for a survey of the material and technical features, which I initially undertook out of necessity and to increase my own understanding for conservation purposes, but gradually it became evident that the findings would be an important resource for many conservators, and other scholars, working with manuscripts from the Islamic lands.

Some of the first findings were directly related to repair practices: historic and local ones, and modern conservation treatments. There was strong evidence that bookbinders developed a method of sewing for when they had to repair and rebind a manuscript. Instead of carrying out many paper repairs in the spine-folds around the positions of the sewing stations, they used a link-stich sewing on four sewing stations that by-passed the somewhat damaged parts of the paper, caused by the original sewing and wear and tear [fig. 1]. The original sewing stations are located under the sewing thread, and when damage allows access to the textblock spine, the repair thread can be seen on the spine side, passing between the second and third station of the current sewing. Although there are multiple examples of manuscripts that are re sewn on two stations, with the required paper repairs in the spine-folds, it is important to recognise this specific sewing structure on four stations as a repair structure. First of all, it places the act of the repair in the Islamic tradition; this kind of (repair) sewing has not been recorded for other book cultures in the region. It may be important to scholars, working with such volumes, to know that the specimen has been re sewn and possibly rebound. It is certainly also important for the conservator who considers an interventive treatment. With the conservation literature of the 1980s and 1990s in mind, a conservator could choose to re sew the volume, using the four stations from the repair intervention, but opting for a 'Coptic' variant in which the sewing thread passes 'inside' the gathering between all stations (thinking this would be the stronger variant) and not, as the Islamic bookbinder did, with the thread passing on the spine side between the second and third station. Such an intervention then would obscure the historic repair and hamper subsequent codicological studies.

Another divergent sewing pattern was found in Indonesian manuscripts. To appreciate the importance of that fact, one should know that the Islamic bookmaking tradition is very consistent, and has not seen the structural changes that typify the western bookbinding tradition since the advent of the printing press. It is thus highly remarkable that not a single example of a link-stitch sewing using two stations

has been identified in manuscripts originating in Indonesia.⁵ Instead, these manuscripts are consistently sewn on multiple stations, usually on five or more, still using an unsupported link-stitch sewing. They therefore are more similar to most Coptic manuscripts in this respect. How and why the tradition developed in this manner is as yet unknown - all the more reason to preserve these items as they are.



Figure 1 UBL Or. 340, not dated (above), UBL Or. 656, 1562 (below), and schematic drawing of an unsupported link-stitch sewing structure, used in the Islamic world as a repair sewing structure

5 In Leiden, several hundreds of manuscripts have been examined, and I have also seen numerous specimens in collections in Kuala Lumpur.

Indonesian manuscripts appeared to have a number of other distinctive elements, for example the manner in which the endbands were made. In the rest of the Islamic world, the primary endband would be sewn over a leather core, and the secondary endband pattern was formed by two colours of thread. Usually this would be a chevron pattern, though several distinctively different patterns can be found (Scheper 2019b). The way in which the threads are twined and pass the tiedowns defines the pattern, which can also result in a diagonal or vertical stripe, or a checkered pattern, or what I have called a diamond pattern. Indonesian endbands are based on the same principles: a simple primary endband with tiedowns in each gathering, and a secondary endband sewing that gives more structure to the endband and usually consists of a chevron pattern. However, more often than not, these patterns are sewn with three or even four colours. That may seem a small digression from the tradition as found in the heartlands, but technically this is a huge development, because it necessitates the use of more needles, one for each colour – while the two-colour version only requires one needle – and the twining is a lot more complicated. Moreover, the core of the endband is only rarely made of leather. Instead, we find vegetal material: pieces of bamboo or reed, or a small bundle of patterned fabric. These fabric strips are subsequently used as decorative frill at the sides of the endband. Alternatively, the secondary endband threads can be used to create frills, a characteristic only found on Indonesian manuscripts, as far as I am currently aware.

In addition to these valuable regional specific indicators, I also encountered features or phenomena that were difficult to explain, either because the manuscripts were not dated or had no place of origin in their colophons, or because the features were difficult to explain from a technical point of view. A good example of the latter is a sewing structure that involves the use of one sewing support only, more or less centred in the middle of the textblock spine, with cross-over stations towards the head and the tail of the spine. How and where did this unusual manner of sewing develop, how does it fit within the scope of methods using either multiple sewing supports, ‘or’ no sewing supports at all? In the Leiden collection, only one example has been identified. But this is where the ‘exchange’ from the title of this paper comes in. Presentations like these, and teaching or giving workshops, always pay off in several ways. In this case, Kristine Rose-Beers (at the time still working in the Chester Beatty Library) responded to a conference paper in which I showed the single-support structure, and she informed me that in the Chester Beatty Library in Dublin, another specimen of this sewing structure is preserved. Not long after that, during a work visit to examine the Islamic manuscripts in the Royal Collection in Windsor, I was able to identify a third specimen (Scheper 2023, 134-5). We are still in the dark

as to why and when this type developed, but at least we now know that this was not an incidental occurrence.

5 Introducing Students and Interns to the Arabic Collections

Other ways to increase our understanding I try to establish through working with students, who are often interested in ‘unresolved questions’ and may have an opportunity to look into these matters in the framework of their formal training. Over the years, a number of students from various universities and countries have come to the Leiden conservation studio to get an introduction into the materials from the Middle and further East. An example of one of the projects that developed from such an internship is the study of the Islamic slipcase. In the Islamic tradition, many manuscripts received a protective enclosure, as can be witnessed from literary sources and manuscript paintings (Scheper 2023, 145-51). An undefined percentage of these historic enclosures has been preserved, and as such it is not surprising that the substantial Arabic manuscript collection in Leiden includes a fair number of these satchels, bags and slipcases. In terms of conservation, however, these items tend to disappear in a vacuum: they are often not mentioned in catalogues and risk to be excluded from preservation programmes. Indeed, when budgets are limited, time and means will not be spent on the conservation of the protective enclosures of manuscripts, but solely on the manuscripts themselves. In 2018, David Plummer, a West Dean student in book conservation, came to work in the studio, first for a summer placement and then again as an intern. I proposed the topic of the slipcase issue; slipcases are the most common type of enclosure in the Ottoman period, and their conservation problems are obvious. The flexible leather sides are frequently torn because of the interactions with the users when they want to retrieve the manuscript from the case. The preliminary study in the Leiden collection eventually led to a wider study, and a first publication on the topic.⁶

Another example of a further and more detailed study of some of the manuscripts, that I had already examined in my own survey, concerns the focussed study of block-stamped leather, applied as doublures in Mamluk manuscripts. The Mamluk era, a period ranging from 1250 to 1517, denotes a Sultanate that included Egypt, Greater Syria, and the Hejaz. Many manuscripts from this period have intricately tooled leather bindings, with doublures made of silk or

⁶ With the help of the Frederic Bearman Research Grant, David also surveyed collections in Sarajevo, Manchester and Berlin. See Plummer, Hepworth, Scheper 2023.

block-stamped leather. These block-stamped leather doublures pose several issues. The known historic treatises are not clear about their production, they are in fact not mentioned. So how, and by whom were they made?⁷ We think they may have been produced with wooden blocks, similar to the ones used for block-printed fabrics.⁸ Yet there may have been additional options. During a visit to the David Collection in Copenhagen, I photographed a stone matrix and a leather pouch with intaglio printing that lay next to it. In addition, there are numerous examples of high-quality metal objects that display a high standard of engraving from this period in the Middle East, and this is a technique that may have been used to stamp leather as well. In terms of production, it is feasible that the decorated leather was made by a craftsperson who sold the worked skins to other craftsmen like bookbinders. However, it is also possible that a bookbinder possessed a printing block, and worked the skins in his workshop himself.

From a conservation perspective, these block-printed leather doublures are interesting because they cause discolouration in the adjacent paper, usually the outer pages of the textblock [fig. 2]. Does this discolouration signify deterioration? Was a particular agent or dye used when the leather was decorated? Is 'this' causing the discolouration? Or was heat used when the leather was stamped, and has this caused accelerated ageing in the deeper pressed parts of the leather which then, in turn, causes accelerated ageing in the paper? These were some of the questions I had. In terms of book historical research, this phenomenon can actually be very helpful. I am currently involved in a project that studies the dispersed collection of the historic library of the mosque in Acre, or Akka, Palestine.⁹ Out of necessity, a large part of this research needed to happen with digital items, which compared to physical access of the artefacts has its disadvantages. The discolouration patterns of the block-stamped leather doublures however are so distinct that, even from digital access, it is possible to identify the former presence of these decorated leather doublures now lost. This evidence may help to narrow the window of the manuscript's production, especially when the volume lacks a colophon in which the copyist mentioned a date or place of creation.

7 The most complete overview of the different views and debates about the making of this block-stamped leather can be found in Ohta 2012, 297-311.

8 Block-printed fabrics were imported from Gujarat, India to Egypt between the tenth and sixteenth centuries. Fragments of these textiles, excavated in great numbers at Fustat (Old Cairo), show that these fabrics and patterns were known in Mamluk time. See Barnes 1997.

9 *The al-Jazzar Library Project 2022-25*, initiated by Said Aljoumani (UWA/CSMC), Guy Burak (New York University), and Konrad Hirschler (UWA/CSMC). See <https://www.csmc.uni-hamburg.de/research/affiliated-projects/al-jazzar-library.html>.



Figure 2 UBL Or. 650, fifteenth century, with a full leather binding, pastepaper boards lined with block-stamped leather, which crosses the joints; the decoratively cut stub is pasted onto the outer textblock leaf

The student who decided to take on this subject for a diagnostic study, Luca van der Zande, took the topic a little further (see Zande 2022).¹⁰ I had identified the items with the leather doublures, Luca compared the patterns. Among the selected manuscripts, he found two unrelated manuscripts with the same pattern.¹¹ This directly addressed the question by whom the leather was made. Could this indicate that the manuscripts were bound in the same workshop, or, were the decorated skins bought at the same block-printing workshop, but by different bookbinders? The two exemplars in our small group of manuscripts cannot provide a conclusive answer, but the case does underline that this specific type of study could be done in other institutions which, eventually, may help us find proof for one or the other scenario [figs 3a-b].

10 The research focuses on the chemical composition and analyses, but also provides an overview of physical characteristics of the group of manuscripts included in the study.

11 Fortunately, the manuscripts are both dated, and they were copied only seven years apart. They were however not acquired by the same person or at the same time. It concerns Leiden, UBL, Or. 413a, *Kashf Ma'ani al-Badi' fi Bayan Mushkilat al-Mani'*, 886 AH/1481 CE, and Leiden, UBL, Or. 54, *Izhâr şidq al-Mawadda*, 893 AH/1488 CE.



Figure 3 UBL Or. 413a, 1481 (above), UBL Or. 54, 1488 (below).
Both boards are lined with block-stamped leather with identical decorative pattern

We also addressed another question. It has been stated that these leather doublures were printed in situ, so ‘after’ the leather was applied as a doublure (Ohta 2012, 300). For practical reasons alone, this seems unlikely, but the material evidence makes a stronger argument and offers various clues. Firstly, when Luca looked into the size of the block, or repetitive entity of the pattern, he found that the blocks were applied in unlikely positions on the insides of the board

to corroborate the theory. When a craftsperson applies a printing block, it seems sensible and logical that he starts at one side, or corner, and then proceeds from there. When this process would be carried out in situ on the interior of a binding, one would certainly expect the pattern to be aligned with the sides of the board. A situation as illustrated below surely indicates that this doublure was 'not' printed in situ. Instead, it suggests that a larger piece of decorated leather was cut to size and then adhered to the inside of the board [fig. 4].



Figure 4 UBL Or. 378, 1449, lining of the front (right) board. The white lines mark the repetitive pattern (which measures 8.8 x 8.4 cm), showing that the block was not aligned with the sides of the board, supporting the theory that these doublures were cut from larger, pre-decorated skins

Secondly, repair patches that must have been made at the time of the manuscripts' production give further evidence for the theory that these doublures were not printed in situ, but that they were cut from a piece of leather that was block-stamped prior to application. Though not evident at first glance, several of the leather doublures appeared to have small repair patches, where the pattern discontinued even though the patches were patterned [fig. 5]. These pieces usually appear to be cut from the same, larger skin, to be then used to fill small gaps, rough or irregular edges, or possibly holes where the paring knife had caused small damages. Thirdly, the manner in which the doublures were applied ruled out the possibility that they were stamped in situ. Some of the doublures crossed the inner joint and were pasted onto the inner margin of the outer textblock leaves, with the decoratively stubbed extensions also stamped in the same,

and continuous pattern [fig. 2]. Not only would it be hard to imprint the stubbed doublure in situ, especially with the decoratively cut edge of the stub printed evenly but not the adjacent paper in the gutter, it is also unlikely that a craftsman would jeopardise his good work and risk the strength of the joint and board attachment by putting it under the tension that would be required for the stamping of the leather.



Figure 5
UBL Or. 325, not dated.
The western bookbinder who repaired this volume added endleaves with an oval-shaped window as a pastedown, in order not to cover the leather doublures completely. This detail shows a historic repair on the back (left) board (accentuated with white broken line); the leather patch is patterned but the pattern is not part of the overall pattern

Even though such research projects are limited in scope and involve only a small group of manuscripts, the information gained is useful and helps us to understand the practice of the craftsmen involved. The two studies described above are also examples of material examinations that can easily be carried out in other collections, which would help to substantiate and build further onto the results. And last but not least, the emerging professionals gain experience and confidence from working on these projects, which gives them a foundation for their future work as well.

6 Study of Physical Items in Diverse Regions

From the above, it has become clear that an in-depth physical examination of hundreds of manuscripts in one collection can generate fundamental knowledge about a specific cultural tradition, and that even more focussed attention paid to smaller group of items within that same collection can generate further, more specific information. A

case in point is a condition survey I conducted of all the manuscripts from Yemen in the Leiden collection, nearly 200 items. This survey was needed because of *The Zaydi Manuscript Tradition Digitization Project*, an international project initiated by Sabine Schmidtke at the Institute for Advanced Study, Princeton.¹² Looking at so many Yemeni manuscripts sequentially, I observed things that I had not seen before. It taught me that a comparative study of manuscripts from one specific region could generate more information than when these items were surveyed in a much larger assessment including manuscripts from diverse regions.

For example, I noticed that some of these bindings had a hole, punched in the pointed end of the envelope flap, and some bindings even had a remnant of a leather lace in that spot. First of all, this indicates that the binding closed in a different way than the large majority. The envelope flap usually closes 'under' the front, or right, board. In order to use the strap as a wrap-around fastening, the flap obviously needs to close 'over' the board. This then resonated with the way many loose-leaf manuscripts from Sub-Saharan Africa are protected: the stack of loose folios is held together by a leather wrapper binding tied with a leather strap. Looking at the map and the history of the region, it is evident that the exchanges between the south of the Arabian Peninsula and Africa were frequent, and this can easily explain a cross-over of technology, styles, and features.

Another characteristic that became noticeable was the lack of gold in Yemeni manuscripts. Blind-tooling or paper-cut ornaments, pasted onto the exterior leather, were used to decorate bindings. Texts were often written in multiple coloured inks, and opening pages and colophons could be further embellished with decorative elements in many colours, but gold appeared to be absent, whereas its use is common enough in all other regions in the Islamic lands. This observation tied into the research project I had been involved with just a year or so before. Anne Regourd, a scholar specialised in manuscript culture in Yemen, had asked me about the glistening particles she had observed in quite a few of the Yemeni manuscripts in Leiden, and her question resulted in a project in which the particles were analysed. We found mica, metal shavings but not gold, crushed shell, and coloured sand (Regourd, Scheper 2018). The particles would have been shaken over the text while the ink was still moist, so that the particles were embedded in the ink surface. From the specific use of this technique in opening pages, colophons, chapter headings and selected words or annotations in the text, it was obvious that this practice meant that the copyists wanted to highlight certain words or parts of a text page. The choice for a highlighting medium other than gold

¹² See https://www.ias.edu/digital-scholarship/zaydi_manuscript_tradition.

may be explained through a branch of Islam that prohibits the use of gold.¹³ While working on this project, however, I had not noted the total absence of gold. It was only through the larger and focussed survey that the penny dropped.

This also underlines that in order to increase our understanding of the Islamic manuscript tradition, we will need to extend the study of physical items to the various regions themselves. Not only is there a much larger body of manuscripts to be studied in the different countries where they originated, it is also likely that working in these regions may help cement collaborative projects with people who have access to knowledge unavailable to those working in western institutions. This includes knowledge about traditional tools and materials, access to written sources in archives or private possession of craft-people, or an understanding of the local customs, including dissemination of practical and theoretical knowledge.

7 Concluding Thoughts

I find it exciting that after working with the collections in Leiden for more than twenty years now, I am still learning from the books themselves. It is also stimulating that some things only become apparent when exchanging observations with others, and sharing knowledge, and having to think about questions posed by students. This awareness keeps me alert and involved in a wider community, and hopefully prevents me from jumping to easy conclusions. In return, I try to incorporate in my exchanges with emerging professionals that they never take for granted what they read, and that they make sure to check whatever they read about book traditions with real, existing items whenever they have a chance. What we know about bookbinding traditions is not set in stone, it is a growing body of knowledge which sometimes requires adjustment. And the way forward is to study the books themselves, and to share what we know.

13 In a paper I co-authored with Arnoud Vrolijk, curator of the Leiden Oriental collection, we explore this idea further. See Scheper, Vrolijk 2022.

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