



Instructions on the art of bookbinding attributed to the Rasulid ruler of Yemen Al-Malik al-Muzaffar

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Dans l'état actuel de nos connaissances, il s'agit d'un des cinq textes arabes antérieurs au XIX^e siècle sur la reliure qui nous soit parvenu. Dans le cas présent, les enseignements sur cet art sont attribués au souverain rasulide du Yémen, al-Muzaffar Yūsuf al-Ghassānī (mort en 694 h/1294); ils constituent le septième chapitre de son manuel des arts et des techniques intitulé « al-Mukhtara' fī funūn min al-ṣuna' ».

Pour autant qu'on sache, seuls trois témoins de cet ouvrage extrêmement intéressant ont survécu. Nous avons la chance de disposer de deux copies très anciennes, l'une à Dār al-Kutub, au Caire (datée de 727 h/1327), l'autre à al-Khizānah al-Aṣafiyah, Hyderabad (datée de 876 h/1471) et la troisième, conservée à la Biblioteca Ambrosiana, à Milan, qui est datée de 1184 h/1770. Bien qu'il reprenne en partie l'œuvre d'al-Mu'izz ibn Bādīs intitulée « Umdat al-kuttāb », ce texte décrit selon une progression logique toutes les tâches du relieur. L'auteur commence par l'énumération des outils, puis poursuit par le pliage des feuilles, la préparation des gardes, la couture des cahiers, le collage, la mise en presse, la fabrication des ais, la couture des tranche-fûles, la préparation et le tannage du cuir, son montage sur les ais et l'estampage. On notera également un certain nombre de termes techniques très différents de ceux précédemment rencontrés, par exemple sāqiṭ (rabat), ṭablah (recouvrement), taṣlībāh (ais de carton).

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In my search for Arabic texts on the art of bookbinding I have been led to a highly interesting manual of arts and crafts entitled *al-Mukhtara' fī funūn min al-ṣuna'* attributed to the Rasulid ruler of Yemen al-Malik al-Muzaffar Yūsuf al-Ghassānī (d. 694 h/1294)¹. The *Mukhtara'* can be divided into two major parts: the first part dealing with the arts of the book and the second one treating of martial arts. The first part is similar to the well known work of the Zirid ruler of North Africa al-Mu'izz ibn Bādīs (d. 454 h/1062), entitled *'Umdat al-kuttāb wa-'uddat dhawī al-albāb*². Like the *'Umdah*, it contains chapters on the calamus, inks, dyes, adhesives, tanning leather, binding and paper. Indeed, some paragraphs are directly taken from the

1. So far three witnesses of this work have been located: Dār al-Kutub, Cairo (dated 727 h/1327), al-Khizānah al-Aṣafiyah, Hyderabad (dated 876 h/1471) and Biblioteca Ambrosiana, Milan (dated 1184 h/1770). The attribution of authorship to al-Malik al-Muzaffar, although not found in the text proper (preface or colophon), is seen on the title pages of the Cairo and Milan manuscripts. (See also 'Abd Allāh Muḥammad al-Ḥabshī, *Mu'allafāt ḥukkām al-Yaman*, Wiesbaden, 1979: 54-56.) The Hyderabad manuscript is quite different from the other two. It is divided into fifteen chapters as opposed to ten. It contains among other things a chapter (*al-bāb*

al-khāmīs) on the making of local paper (*al-khāghad al-baladī*). However, Chapters Nine, Ten and Fifteen are wanting. For more information about these manuscripts see my *Glossary of the Arabic manuscript book* (in press).
2. For an edited version of the *'Umdah* see *Majallat Ma'had al-Makhtūtāt al-'Arabiyah*, 17 (1971): 44-172. See also Martin Levey, "Medieval Arabic bookmaking and its relation to early chemistry and pharmacology", *Transactions of the American Philosophical Society*, N.S., 62, pt. 4 (1962): 1-50 and Gulnar K. Bosch, "The staff of the scribes and implements of the discerning: and excerpt", *Ars Orientalis*, 4 (1961): 1-13.

'Umdah. The author of the *Mukhtara'* quotes on several occasions al-Mu'izz ibn Bādīs, referred to as *Ṣāhib* (ruler of) *al-Mahdīyah*. It is of significance that these two works should have been composed by Arab rulers, as it underlines the importance which was attached to the arts and crafts in Islamic civilization. The section on bookbinding which forms Chapter Seven of the whole composition is now the fifth text of this kind known to have survived³.

The author begins his instructions with a section on tools and implements which for the most part is similar to the text of Ibn Bādīs. Here we find *bilāṭah* or *rukhāmāh* (marble slab), *misann* (whetstone), *ishfā* (awl), *miqaṣṣ* (scissors), *ibar* (two needles: one for endbanding and the other for the sewing of quires), *sayf* (sword), *shafrah* (cutter, trimmer), *masāṭir* (rulers: *mīṣṭarat al-rasm wa-al-tabkīr*, ruler for drawing and designing; *mīṣṭarat al-shughl*, heavy duty ruler), *niṣāb* (folder) and *bawākīr* or *bayākīr* (compasses), *ṣaqqāl* (small and large burnisher, polisher; the latter called *dast*), as well as stamps and tools (*ḥadā'id*, *manāqish*, *qawālib*)⁴, such as *lawzah* (lit. almond), *ṣadr* (known as *ṣadr al-bāz*, falcon's breast), *khālīdī* (ornament; oval or round-shaped tool) and *nuqaṭ mudawwarah* (round points).

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However there is no mention of *kāzan* (mallet), and whilst Ibn Bādīs describes two types of presses (*mī ṣarah*), the author gives a description of a screw press (*qarrās*) consisting of two wooden screws (*ḥalazūn*, *fatīlah*) and two boards (*daffāh*): the screws and the boards being made of two different types of wood. The bookbinder's press is usually made of hard wood such as *abanūs* (ebony), *ihlīlaj*, *halīlaj* (myrobalan), *shīz* (another type of ebony) and *tamr* (tamarind). Its boards should be slightly longer than the length of the book and their width ought to be comparable to the palm of the hand. The thickness of the board in turn should not exceed half of its width⁵.

It is interesting to note here that the Hyderabad copy contains an additional passage on tools and implements where the following are mentioned: *lawḥ al-taṣlīb* (slab for making pasteboards), *niṣāb al-dalk* (burnisher, polisher),

3. The chapter on the art of bookbinding has been edited on the basis of two manuscripts (Cairo and Ambrosiana) and can be found in my *Glossary* (see n. 1). In addition to this work and that of Ibn Bādīs are those of Bakr al-Ishbīlī (d. 628 h/1231), 'Abd al-Raḥmān ibn Abī Ḥamīdah (fl. 9 h/15th cent.) and Aḥmad ibn Muḥammad al-Sufyānī (fl. 1029 h/1619). For more information see my two recent articles "Arabic bookmaking and terminology as portrayed by Bakr al-Ishbīlī in his 'Kitāb al-taysīr fī ṣinā' at al-tasfīr'", *Manuscripts of the*

Middle East, 5 (1990-1991): 106-113 and "Ibn Abī Ḥamīdah's didactic poem for bookbinders", *Manuscripts of the Middle East*, 6 (1992): 41-58.

4. The word *qawālib* appears only in the Hyderabad copy: *wa-yakūn li-kull minqash min ḥādhih al-maqālib niṣāb*.

5. For illustrations of different screw presses see Gulnar Bosch, John Carswell and Guy Petherbridge, *Islamic bindings and bookmaking* (Chicago, 1981): 40, 52.

kursī al-ḥajar (support for a stone slab), *ḥajar* (the slab itself), *zāwiyah* (square), *bīkār* (compass), *mīṣṭarah* (ruler), *qarrāṣān* (two presses), *miftāḥ al-qarrāṣ* (press screw), *minsharah ṣaghīrah* (small saw), *minsharah kabīrah* (large saw), *sayf bi-niṣābayn* (large sword with two handles), *sayf bi-niṣāb* (small sword with one handle), *dirafsh* (awl), *qarrāṣ kabīr* (large press), *ḥajar bahrī lil-ḥakk* (polishing stone), *mishṭ* (comb), *mawzah* (burnisher, polisher), *ibratān* (two needles), *mīḥaṭṭ* (another type of polisher)⁶, *miṣqalah kabīrah* (large burnisher), *miṣqalah ṣaghīrah* (small burnisher), *mikhaṭṭ* (tracer)⁷, *bāz* (stamp in the shape of the falcon's breast), *lawzah* (almond-shaped stamp), *lawzah wa-niṣf* (*lawzah* and a half), *ra's al-lawzah* (head of the almond-shaped stamp), *nuqṭat lawzah* (point of the *lawzah*), *nuqṭah lil-tadhhīb* (point for gold tooling), *nuqṭah kabīrah libuyūt al-lawzah* (large point used in the compartments of the *lawzah*), *mijwab al-takhrīm* (cutter for sewing)⁸, *misann mish* (whetstone for the *mish*, i.e. a sword for rubbing leather)⁹, *miṣsamah* (or perhaps *muqassimah*) *lil-naqsh* (divider used for tooling), *līqah jayyidah* (wad of wool of good quality).

We read in the same passage that each tool or stamp has a handle (*niṣāb*), the small sword (*sayf ṣaghīr*) is 1.5 *shibr* long (ca. 30 cm) and that the large sword (*sayf kabīr*) is 2 *shibr* long (ca. 40cm). Both the *lawzah* and *miṣqalah* should be made of Indian steel or other good quality iron. At the end of this same chapter the Hyderabad manuscript has a section on polishing and / or sharpening tools such as *niṣāb*, *miqass*, *qalam* and *dirafsh*. Here additionally are mentioned three types of knives (*sikkīn*, *maws* and *mishraṭ*), *miṭraqah* (hammer), *mibrad* (file), and two types of whetstones (*misann akhdar* and *misann ṭulaylī*?).

The author begins the main discussion with the preparation of pastes: wheat starch paste (*nashan*) and asphodel paste (*ashrās*). This is followed by a small paragraph in which the author instructs the bookbinding apprentice on the initial procedures such as opening quires and flattening out their centres ('*atf al-kurrās*) with a folder (*niṣāb*), collation, pounding their backs on the marble slab (*rukḥāmah*) to make them flat and straight and marking their backs for sewing (*kharm*) by measuring one third of the spine at each end.

Then comes the preparation of the doublures or inner linings (*biṭānah*). These are cut out according to the size of the quire, taking into consideration the fore-edge flap (*ṭablah*) and envelope flap (*sāqīṭ*)¹⁰ as an

6. There appears to be some confusion, in this and other texts on bookbinding, between *mīḥaṭṭ* and *mikhaṭṭ*. This confusion stems from an unpointed text. In the Hyderabad witness both words are given as *mīḥaṭṭ*. However, it is clear from the context that these are two different words. This confusion finds its reflection in the definition of the word *mīḥaṭṭ* itself which may carry the meaning of the *mikhaṭṭ* (see

Glossary; see also M. Piamanta, *Dictionary of post-classical Yemeni Arabic*, Leiden, 1990-1991, 2 vols., s.v. *māḥaṭṭ* - carving tool; *Islamic bindings*: 81, n. 148).

7. Cf. n. 6.

8. Perhaps more likely a cutter for undoing the sewing (see *Glossary*, s.v. *kharm*).

9. *Glossary*, s.v. *mish*.

extension of the lower cover. A sheet of white paper, the length and width of the *biṭānah*, is then cut out and pasted (using *ashrās*) onto it. Subsequently another sheet of paper, larger by the size of the small finger, is cut. It is pasted in such a way that the protruding portion and part of the *biṭānah* are folded round the back of the first quire. This is done in order to ensure that when the quire is sewn the endpaper and the *biṭānah* are sewn with it¹¹.

The next procedure is the sewing of quires (*khiyāṭah*). For this a thin thread is needed. The author recommends a cotton thread made up of 5 to 7 strands (*ṭāqāt*) depending on the size of the book. The sewing begins with the last quire by pulling the needle through the markings on the spine. Here the author describes a typical link-stitch (or chain-stitch) technique using two sewing stations¹². Having sewn the quires the spine is pounded and the book is then placed in the press (*qarrāṣ*) and subsequently its spine (*ka'b*) is rounded (*tahlīl*, *tadwīr*). This is done placing the press with the book in it on the knees and manipulating the fore-edge (*ru'ūs al-karārīs*) with the fingers. The spine should not be too round as this would damage the glosses during shaving, nor too square for this would precipitate the disintegration of the book.

After the rounding of the spine, the spine is pasted with *ashrās*, in such a way that the paste penetrates in between the quires, and pressed. It is important that the spine and the fore edge (*ra's al-kitāb*) are of the same thickness or at least the fore-edge is not much thinner than the spine. A strip of paper of the width and the length of the spine is then taken and pasted onto it. Another strip of paper wider than the first one by two fingers is pasted over it in such a way that additional portion of it forms a hinge (*janāḥ*). A third strip (of the size of the second one) is then placed in the manner of the second one to form the second hinge. After each operation a folder (*niṣāb*) is used in order to achieve a smooth finish.

After this, two pieces of thick cloth (*khirqah*) of the width of the spine and three fingers long (ca. 5 cm) are attached to the ends of the spine. The spine is then pasted evenly using a tracer (*mikhaṭṭ*) and drawing a pattern of lines resembling a chessboard. The book is left in the press to dry. When the spine has dried, the book is taken out of the press, the hinges are pasted with *ashrās* onto the inner linings and left to dry.

10. Piamanta gives the word *sāquṭah* (thus) as a "bolt" (see his *Dictionary*). Other terms for this most salient feature of Arabic bookbindings are *lisān*, *udhn*, *marjī*, *raddah* and *miqlab* (see

Glossary).

11. This description is based on the Hyderabad copy.

12. *Islamic bindings*: 45-48.

Next, the author describes the making of pasteboards (*taṣṭīb al-daffāt*)¹³. For this purpose a sheet of paper of the size of the book is taken and pasted with *nashan*. Another piece of paper of the same size is then placed over it and smoothed with the palm of the hand. Over this a dry sheet of paper is put and the whole is smoothed with a folder. The dry sheet is then taken away and another sheet pasted over the first two. If a sheet of the same size is wanting, a smaller piece can be used and joined to another piece, taking care, however, that the joints (*waṣl*) are straight. One can use anything from 6 to 12 sheets (*fāqah*) depending on the size and thickness of the book. All together three pasteboards (*taṣṭībah*) are made: two for the upper and lower covers and a third one for fore-edge and envelope flaps.

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The pasteboards are left hanging on the wall, away from direct sunlight, to dry. When dried, a line is drawn along both sides of the pasteboard using a ruler (*mistarāh*) or square (*zāwīyah*) and then three drops of *ashrās* are placed on the line; one drop in its middle and two drops at its ends. The same is done for the second pasteboard. The pasteboards are then mounted, in such a way that the spine protrudes a little, and placed in the press. If they need shaving (*jazz*), their corners are first measured with a square (*zāwīyah*) and a pair of compasses (*bikār*). Once their measurements established the pasteboards are cropped, one by one, with a trimmer (*shafrah*), and the cut sides are smoothed with a file (*mibrad*) or thick piece of glass (*zujājah*) or pumice (*miḥakk al-rijl, ḥajar al-qushūr*).

Then comes the preparation of the flap (*ra's*). The width of the *ṭablah* becomes the same as the width of the fore-edge (*fath al-ra's*) and the pentagonal envelope flap takes up half of the width of the pasteboard. The two equal straight sides of the pentagon are in turn half of the width of the flap, that is one fourth of the width of the pasteboard¹⁴.

Having finished with the preparation of the pasteboards, the book-binder returns to the sewing of endbands (*taqyīd, tashkīz*)¹⁵. For this purpose a cotton thread, of the thickness used for sewing quires, and an endband core (*fatīlah*) are chosen. The endband core is a strip of leather (*sayr*) of the width of one half of the little finger and one *shibr* long. It is glued on the inside with *nashan*, twisted and dried. The primary endband threads are sewn with a needle thicker than the one used for sewing quires. The holes

13. The word *taṣṭīb* is also used in a more general sense as "bookbinding" (Piamenta, *Dictionary*).

14. In this type of a pentagonal flap the top of the triangle reaches the middle point of the first leaf or fly leaf and if closed on the outside, this uppermost point corresponds exactly to the middle of the centre medallion.

15. The word *tashkīz* appears only in the Hyderabad copy: *al-taqyīd alladhī yusammā al-tashkīz*. Both these words are used in the sense of a preliminary (primary) endbanding as opposed to endbanding with silk (*ḥabk*). Thus the books provided with silk endbands are called *al-kutub al-mahbūkah* (see the last sentence in the Hyderabad witness).

are punched with a thin awl (*ishfā*) and the thread is pulled over the endband core and the top of the spine (*ra's*) of each quire. The final stage of endbanding (decorative sewing), called *ḥabk*, is done with a silk thread¹⁶.

The author then embarks on the selection of leather and its tanning (*dibāgh*), paring (*bashr*) and dyeing (*ṣibāgh*). This section is to a large extent a repetition of the text of Ibn Bādīs. However, the Hyderabad manuscript at the end of this chapter contains other recipes for dyeing. Here is mentioned, among other things, the dyeing of goat, calf and sheep skins.

Once the leather is prepared and dyed, it is then burnished¹⁷. The covers (*daffah*) are pasted on the outside and the leather glued onto them. The leather is then smoothed and rubbed with a folder (*niṣāb*) and thumbs. The fore-edge (*ṭablah*) and envelope flaps (*sāqit*) are mounted and their edges rubbed with a wooden burnisher (*al-miḥaṭṭ al-khashab*). The covers and the envelope flap are subsequently folded and left for an hour under a stone. After that, the borders (*ḥawāshī al-kitāb*), fore-edge and envelope flaps are marked with a pair of compasses using the width of the burnisher (*miṣqalah*) as a measuring unit. The covers are smeared with wax (*sham'*) and polished with a burnisher along the markings previously established with the *bikār*. The *miṣqalah* is heated, cooled down in water and the burnishing is done with the use of the ruler.

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If tooling (*naqsh*) is required, the binder, using a *bikār*, draws two lines from the top left hand corner to the bottom right hand corner and vice versa, to mark the centre of the cover with a cross. Here he may draw a circle or an eight- or six-pointed star (*muthamman, musaddas*) for a centre medallion.

After tooling, the edges of the leather are pared and the turn-ins (*ḥawāshīn*) are cut straight, the covers and the spine are pasted (either with *nashan* or *ashrās*) and the whole mounted on the inner linings. A piece of paper is placed between the cover (*daffah*) and the textblock (*kitāb*) to prevent moisture from penetrating onto it. The whole is left on a stone to dry. When dried the pieces of paper are removed and the turn-ins (*al-ḥawāshī al-ma' ṭūfah*) are smoothed with a *miḥaṭṭ*. These, in sum, are the main bookbinding procedures described by al-Malik al-Muẓaffar¹⁸.

16. For illustrations depicting endbanding see *Islamic bindings*: 54-55.

17. This section in the Hyderabad manuscript is much longer. The burnishing here is done with a *mauẓah*.

18. This somewhat lengthy section in the Hyderabad witness also contains instructions on making a register (*daftar*), scrolls (*durūj*) and pen boxes (*maqālim*).