



## Comparative Oriental Manuscript Studies Newsletter No. 4

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## Editorial

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*On 20 April 2012, on the occasion of the Plenary Meeting of the European Science Foundation Standing Committee for the Humanities (SCH) in Oslo, in my role as the Chair of the COMSt Steering Committee, I had the chance to present the mid-term results and outlook of the COMSt programme. The Standing Committee for the Humanities unanimously approved of our work on the basis of the oral report I submitted, of the written Mid-term Report prepared by myself and the coordinator Evgenia Sokolinskaia, of the review of an anonymous external reviewer, and of the evaluation by Prof. Dr. Bernhard Palme of the ESF Standing Committee for the Humanities. This is a first major success of our Research Networking Programme and a strong stimulus and encouragement to proceed as we have planned for the rest of the term. In this connection, in the name of all the members of the COMSt Steering Committee, I would like to thank heartily all those of you who have worked within COMSt or in cooperation with our community and who have contributed to this success with dedication and engagement.*

*We are all aware that the final task we have taken upon us – that is the redaction and publication of a comprehensive methodology-oriented introductory Handbook of Oriental Manuscript Studies – still remains to be completed. However, the activities in this direction have intensified considerably in the last months. The results of this process, and of the cristallisation of particular goals, have been most visible in the recent workshops and in the planning of the forthcoming meetings.*

*Looking into the future and at the specific mid-term vocation and follow-up of COMSt, among the crucial points that have not yet been explicitly discussed and remain open to further reflexion there is the definition of what is “Oriental” in COMSt view. The definition of this point is obviously among the*

*tasks of COMSt, even though the ongoing activities of the Programme have in fact indirectly positively contributed to the point. “Oriental” in the COMSt-spectrum actually embraces all Oriental (non Western European) manuscript cultures which have a historical (“genetic”) relationship with the Mediterranean codex area, and it thus excludes, both in the realisation of the project and in consideration of the responses to the initial call we have registered, all Eastern (Oriental) manuscript cultures which do not have such relationship with the Mediterranean codex area. This practical delimitation and working definition (which clearly has to be further refined) geographically largely corresponds to an alternative one pointing to the area of monotheistic cultures (Jewish, Christian, and Islamic): since, however, the Near Eastern and classical civilisations, especially the Graeco-Roman one, have played a decisive role in the uninterrupted development of Oriental manuscript cultures of the Mediterranean codex area, we agree that the former definition is by far superior.*

*The definition of the COMSt focus area has a substantial consequence: it distinguishes the COMSt programme from other “manuscriptological” projects which pursue more theoretical issues inspired by the necessity itself of a more typological than historical comparison. In fact, the strict adhesion to a comparative perspective as declared in the name of the Programme, does not imply that COMSt intends to give up the historical perspective in favour of a theoretical or typological one. Quite to the contrary, the specificity and ambition of the COMSt network is to demonstrate that a close inter-relationship between the two can uniquely enhance our understanding of the cultures involved and the related phenomena, and establish a sounder basis for an eventual broader comparative perspective.*

Alessandro Bausi

## Projects in manuscript studies

In this issue:

Oriental Manuscripts at the Hill Museum and Manuscript Library, USA

Programme of Studies in Oriental Manuscripts, Argentina

Collaboration in Cataloguing: Islamic Manuscripts at Michigan, USA

### Oriental Manuscripts at the Hill Museum & Manuscript Library

The Hill Museum & Manuscript Library (HMML), located on the campus of Saint John's University in Collegeville, Minnesota, was founded in 1965 for the purpose of preserving on microfilm manuscripts from European monastic libraries. Fr. Oliver Kapsner, OSB, travelled around Austria and Germany in the mid and late 1960s in a Volkswagen bus with a team that photographed thousands of manuscripts in a broad variety of languages. In 1973, in partnership with Vanderbilt University, new work was begun in Ethiopia. This was the genesis of the Ethiopian Manuscript Microfilm Library (EMML) project that is well known to many readers of this newsletter. Microfilming work continued into the 1980s in various places and the fruit of those laborious efforts now resides in hundreds of microfilm drawers in the climate-controlled lower level of HMML, with back-up copies elsewhere. In 2003 HMML made the means of preservation full-colour digital images instead of the earlier bitonal microfilm, also progressively backed-up as new images are received.

While scholars of the western medieval world and of Ethiopia (thanks to EMML) have long known about HMML and taken advantage of its copious resources, HMML's more recent work among middle eastern and Indian collections calls for special attention here. As in previous arrangements in Europe and Ethiopia, HMML has partnered with various institutions and individuals to preserve and make accessible their entire manuscript collections, large or small. This recent work has taken place mostly among Christian collections, and includes libraries, churches, and monasteries throughout Eastern Turkey, Syria, Lebanon, Jerusalem, Iraq, and India. While these preservation efforts have been undertaken in "Christian" collections, it bears pointing out that the owners of manuscripts do not absolutely

determine the content of their collections: Christian genres (Bible, liturgy, hagiography, etc.) make a large part of it, but hardly the whole. In addition to this work in the Middle East and India, projects continue in Ethiopia, one notable example of which being a large collection of Arabic manuscripts from the old (mostly) Islamic city of Harar.

Local operators undertake the work of photographing a particular collection of manuscripts onsite in studios that HMML sets up and then send the digital images in hard drives to HMML. Once there, these manuscripts are available almost immediately for scholars to study. Researchers may gain access to manuscripts by visiting HMML, ordering digital copies to be sent to them on disk (\$65/manuscript), or viewing for a period of one month up to three manuscripts at a time through Vivarium, HMML's online viewer, at no cost.



Image of Pentecost. Ms. CFMM 37/2. Gospel lectionary, vellum, ca. 13<sup>th</sup> century. 41 x 30 x 10.5 cm. F. 5v. Copyright: Syriac Orthodox Diocese of Mardin, Turkey.

For some collections that HMML has digitised, there are, of course, already printed catalogues for scholars to consult, but for many collections, new cataloguing is required. Two full-time researchers and several contracted offsite cataloguers in various parts of the world — this geographical freedom is possible thanks to the ease of moving electronic data — are now at work on this task of cataloguing, the results of which appear in Oliver, HMML's online catalogue, which contains (or will contain) records for all of HMML's manuscripts, microfilm and digital. Due to the staggering mass of cataloguing work to be done, HMML welcomes competent scholars to undertake parts of this labour of identifying and describing manuscripts, many of which have long been unknown or inaccessible outside of their immediate communities.

Enquiries about particular manuscript collections are encouraged, as are contacts from scholars who may wish to come to HMML to study greater numbers of manuscripts for a period of time. Junior scholars (graduate students and those within three years of having received their doctoral degrees) are especially urged to consider applying for a Heckman stipend (up to \$2000) for a period of study at HMML to make use of its collections in Arabic, Armenian, Syriac, Gə'əz, and other languages.

Contact: Adam C. McCollum, Lead Cataloguer, Eastern Christian manuscripts, amccollum@csbsju.edu; Columba Stewart OSB, Executive Director, cstewart@csbsju.edu.

Web: <http://hmml.org/>

### **Programme of Studies in Oriental Manuscripts**

The study of Oriental languages — except for Hebrew, Arabic and Middle Egyptian — has been traditionally absent from the curricula of Argentine universities. To remedy this, a new Programme of Studies was launched four years ago at the National Council for Scientific Research (Institute of History and Social Sciences, IMHICIHU-CONICET, Buenos Aires, under the Direction of Dr. Pablo Ubierna, Head of the Department of Late Antique and Medieval Studies). The aim of this Programme in Late Antique and Medieval Studies is to facilitate the access of undergraduate and graduate students to the study of Late Antique and Medieval Civiliza-

tions, both Middle Eastern and Western, by means of the study of diverse Languages, Palaeography, Numismatics and Late Classical and Near Eastern Archaeology.

Currently, courses are offered on Syriac, Biblical Hebrew, Aramaic, Old Nubian, Coptic and Classical Arabic along with courses on Latin Palaeography and Patristic and Byzantine Greek, Old Norse and Medieval Welsh. These courses are supplemented with Reading Seminars for advanced students. The Programme foresees the incorporation of more languages (Rabbinic Hebrew, Talmudic Aramaic, Manichaean Middle Persian, Pahlavi) and seminars in the following years.

Since 2009 Programme has published a monographic series, *Byzantina & Orientalia* (two volumes already available; I: Diego M. Santos — Pablo Ubierna, *El Evangelio de Judas y otros textos gnósticos. Tradiciones culturales en el monacato primitivo egipcio del s. IV*, Buenos Aires: Bergerac Universidad, 2009; II: Héctor R. Francisco, *Historia, Religión y Política en la Antigüedad Tardía. La historiografía monofisita de los siglos V y VI*, Buenos Aires: Bergerac Universidad, 2011). Another series of *Instrumenta Studiorum* will focus on teaching materials in Spanish for the study of ancient and Oriental languages. Two volumes are currently under press (an Introduction to Syriac by Pablo Ubierna and an Introduction to Sahidic Coptic by Diego M. Santos).

The Programme also foresees the preparation of a first catalogue of Oriental manuscripts in Argentine collections in order to evaluate their academic and historical value and to facilitate the access to them for the scholars worldwide. The first collections targeted are the Syriac manuscripts collection belonging to the Syriac Orthodox community in Argentina (institutional or private collections in Buenos Aires-La Plata and Córdoba) and the Ethiopian manuscripts collection at the Biblioteca Mayor of the University of Córdoba (olim Colección Ferrer Vieyra). Additionally, the Museo Nacional de Arte Oriental in Buenos Aires holds a small collection of Oriental manuscripts, most of them originating in Central and East Asia (Indian, Tibetan and South-East Asian manuscripts).

Contact: Pablo Ubierna, [pabloubierna@hotmail.com](mailto:pabloubierna@hotmail.com); Diego M. Santos, [diegoaug@yahoo.com.ar](mailto:diegoaug@yahoo.com.ar); Héctor R. Francisco, [hfrancis@ungs.edu.ar](mailto:hfrancis@ungs.edu.ar).

## Collaboration in Cataloguing: Islamic Manuscripts at Michigan

The University of Michigan Library is now in the final year of a grant-funded project to complete the cataloguing of its Islamic Manuscripts Collection. Supported by a "Cataloging Hidden Special Collections and Archives" grant administered by the Council on Library and Information Resources with generous funding from the Andrew W. Mellon Foundation, the project engages established and emerging scholars (at various levels of expertise in Islamic codicology and palaeography) in the cataloguing process – training, examination, description, and generation of searchable bibliographic and codicological metadata – for the collection of roughly 1,090 manuscript volumes dating from the 9<sup>th</sup> to 20<sup>th</sup> century CE and containing texts primarily in Arabic, Persian and Turkish. For University of Michigan project staff, led by project cataloguer Eryn Kropf, foundational training has included participation in a week-long workshop addressing Arabic manuscript studies (palaeography and codicology) conducted by Adam Gacek in May 2009 and a multi-session workshop addressing Islamic bindings, book structures, materials and condition conducted by Julia Miller in February 2010. Extensive further readings and hands-on experience under the guidance of the project cataloguer at each stage of the project supplemented the training.

Examination is quite thorough and takes place in both the physical and digital environments.

The resulting descriptions characterise not only the contents of the codices (text, paratext and ornament) through transcription, notes and headings, but also their form via notes addressing the script and

hand, structure (composition of gatherings, sewing, and cover), dimensions, writing surface, layout and other physical aspects. Particular attention is given to the evidence for the history of the manuscript as attested in manuscript notes and in changes to structure through addition or repair.

The chief goals of the project are to enhance intellectual access to the collection through creation and dissemination of searchable, web-discoverable descriptions and digital surrogates, to enrich scholars' knowledge of codicology and palaeography, and to compile a database – searchable and accessible to all via the Library's online catalogue and the HathiTrust Digital Library – of bibliographic and codicological data that may serve to further research and scholarship in Near Eastern studies and Islamic manuscript studies in particular.

An iterative, collaborative approach leveraging the potential of the digital environment has been adopted to facilitate the cataloguing process. In the initial phase of this approach, existing inventory data are converted to preliminary online catalogue records and digital surrogates are created for each manuscript. Next, descriptive elements are harvested from the preliminary records and combined to form a representative description posted on the project website along with a link to each manuscript's digital surrogate in the HathiTrust Digital Library. As Univer-

### ISLAMIC MANUSCRIPTS AT MICHIGAN

#### المشاركة في الفهرسة: المخطوطات الإسلامية في جامعة ميشيغان

SHARE DESCRIPTIVE COMMENTS ON ISLAMIC MANUSCRIPTS  
أضف تعليقات وصفية على المخطوطات الإسلامية في جامعة ميشيغان

Total comments on this page: 23

« Previous: Mizān al-ḥibb, [1238, i.e. 1822], [1238] ميزان الحبيب, [1822]. »

Next: Sikandar'nāmah-i barri, [1256], i.e. 1840 [1256], i.e. 1840 [1256], i.e. 1840. »

[Jangnāmah-i Imām Ḥusayn ...etc., 1222 and 1259, i.e. 1807 and 1843]. [جنگنامه امام حسين... إلخ، 1222 و 1259، i.e. 1807 و 1843].

1 **Shelfmark:**  
Isl. Ms. 853

2 **Title:**  
[Jangnāmah-i Imām Ḥusayn ...etc., 1222 and 1259, i.e. 1807 and 1843]. [جنگنامه امام حسين... إلخ، 1222 و 1259، i.e. 1807 و 1843].

3 **Author:**  
Kāshifī, Ḥusayn Vā'iz, d. 1504 or كاشفي، حسين واعظ، d. 1504

4 **Place/Date of Production:**  
Unidentified-Can you help supply this information? Please comment!

5 **Size:**  
1v. ;26 cm.

6 **Summary:**

**COMMENTS** on paragraph 2 overview

**CONNIE BOBROFF:**  
Dorr ol-Majāles by Sayf Zafar `Ali Nawbahāri runs from PDF p. 250 (pencil = 236) to PDF p. 438 (pencil = 424) I will refer to this text as "DM" in comments below since there are several texts bound together in this mss.

June 8, 2012 10:18 am Reply »

**Name (required)**

**E-mail (required - never shown publicly)**

**URI**

**HINTS**

Check under Manuscripts Posted by Month for an archive of manuscript postings and the most recently posted manuscripts.

**MANUSCRIPTS POSTED BY MONTH**  
Select Month

**CATEGORIES**

- Abdul Hamid Collection (177)
- Arabic MSS (507)
- F. E. Nuttall Collection (44)
- Frank J. Schulte Collection (2)
- Fully Catalogued (410)
- Heyworth-Dunne Collection (103)
- Horace Miner MS (1)
- Near to Fully Catalogued (275)
- Not yet catalogued (9)
- Panjabi MSS (1)
- Persian MSS (141)
- Richard Ford MS (1)

sity of Michigan project staff work with the physical volumes and digital surrogates to compile the descriptions, colleagues from elsewhere around the world may also examine the digitised manuscripts, review existing descriptive information and submit their contributions to the descriptions as comments via the project website. All contributions are then reviewed by the project cataloguer and refashioned for incorporation into the cataloguing records for those manuscripts, which serve as the final “published” descriptions.

To date 40 scholars (including project staff) from institutions in Belgium, Egypt, France, Germany, Iran, Israel, Turkey, the UK and the US have contributed to the cataloguing effort and almost all of the manuscripts are now represented by data-rich full or near full descriptions in the online catalogue. All 912 manuscripts initially slated for digitisation are now

represented by digital surrogates in the HathiTrust Digital library, and may be downloaded in their entirety. Additional manuscripts will be digitised in the future. Needless to say, use and interest in the collection have increased exponentially as the project has progressed.

Our final phase is focused on completing the physical examination and description for those manuscripts which up to now have been examined only in the digital environment, as well as completing full examination and description for the manuscripts not slated for digitisation. Details of the collection history and provenance are also being more thoroughly investigated. Furthermore, we continue to welcome comments on the manuscripts via our project site at <http://www.lib.umich.edu/islamic>.

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Web: <http://lib.umich.edu/islamic>

## Individual research in manuscript studies

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In this issue:

*Standards used in online Islamic manuscript databases*, Majid Nabavi

*“The Book of Useful Properties from the Parts of Animals” by ʿĪsā ibn ʿAlī. An experimental approach to editing a complex medical tradition*, Lucia Raggetti

*Digital analysis of Arabic bibliographic collections*, Maxim Romanov

### **Standards used in online Islamic manuscript databases**

For my M.S. thesis at the Faculty of Library and Information Science at Tehran University I conducted a survey of standards used in the databases of Islamic manuscripts available online. Searchable cataloguing databases were my primary interest; a few portals and hyper-catalogues were also included in the survey. I considered both standards used in digitisation (in case of catalogues offering manuscript images), those used in metadata and descriptions, as well as in data storage with the main scope of defining whether there was a sufficient common basis present to achieve a common platform for Islamic manuscript research.

Among the surveyed databases, the majority is located in the USA (Walters Museum: <http://thedigitalwalters.org>; Caro Minasian Collection at the University of California Los Angeles: <http://digital.library.ucla.edu/minasian/>; Hill Museum and Manuscript

Library: [http://www.hmml.org/research2010/catalog/search\\_home.asp](http://www.hmml.org/research2010/catalog/search_home.asp) [s. this *Newsletter* issue pp. 3–4]; Islamic Manuscripts in Michigan: <http://www.lib.umich.edu/islamic> [s. this *Newsletter* issue pp. 5–6]; Islamic Manuscripts from Mali at the Library of Congress: <http://lcweb2.loc.gov/intldl/malihtml/mali-home.html>; Princeton Digital Library of Islamic Manuscripts: <http://library.princeton.edu/projects/islamic/>; and the UNESCO World Digital Library: <http://www.wdl.org/en/>). Three European samples were taken (Birmingham Mingana Collection: <http://vmr.bham.ac.uk/Collections/Mingana>; Islamic Manuscripts at Leipzig University: <http://www.islamic-manuscripts.net/>; Spanish National Research Council Libraries: <http://manuscripta.bibliotecas.csic.es/>). Several online collections from the Middle East (Turkey Ministry of Culture and Tourism: [https://www.yazmalar.gov.tr/detayli\\_arama.php](https://www.yazmalar.gov.tr/detayli_arama.php); Saudi Arabia, Malik Saud University: <http://makhtota.ksu.edu.sa/browse/0>; Iran, Astan Ghods Library: [6 • COMSt](http://80.191.111.108/in-</a></p></div><div data-bbox=)

*dex.aspx?pid=29*, Iran, Shaykh Agha Bozorg Bibliographic Database: <http://www.aghabozorg.ir/search.aspx>; Iranian Parliament Library: <http://dl.ical.ir/websearch/forms/index.aspx>, Iran National Library <http://dl.nlai.ir/ui/Forms/Index.aspx>) and East Asia (Malaysia: <http://mymanuskrip.fsktm.um.edu.my>) were also included in the survey sample. As an example of a portal, the Fihrist (<http://www.fihrist.org.uk>), a search engine for Islamic manuscript descriptions in several UK collections, was considered.

For the survey, I prepared a questionnaire of 20 questions (partially based on The Islamic Manuscript Association scheme) that I sent to the service providers. The responses were then used alongside my own research of the respective websites.

The survey showed that the majority of digitised images were scanned or photographed with a resolution of 300dpi and are kept in tiff format. Only few institutions used a higher resolution of 400, 600 or even 1200dpi. The derivatives accessible online were usually in jpeg format and had the depth of 72dpi.

For cataloguing, the majority used their own cataloguing scheme. Among the wider spread rules applied were the AACR (Anglo-American Cataloguing Rules) and AMREMM (Ancient, Medieval, Renaissance, and Early Modern Manuscripts). Encoding was TEI based for 35% and METS for 29%; few databases combined more than one metadata encoding standard.

The most popular storage media were plain storage on server, RAID (redundant array of independent disks) or SAN (storage area networks). The majority of the institutions have policy for long-term preservation of their digital manuscripts.

In general, the survey showed a significant scope of variation in all the aspects, in particular, however, as far as the description scheme is concerned. An important academic desideratum should be to achieve a greater degree of unification that will allow an establishment of cross-regional and cross-disciplinary search portals such as the Manuscriptorium (<http://www.manuscriptorium.com>), established for research in European manuscripts. For that, intensive collaboration among different countries' libraries and information centres is required.

Majid Nabavi  
Tehran University

## **“The Book of Useful Properties from the Parts of Animals” by ‘Īsā ibn ‘Alī.**

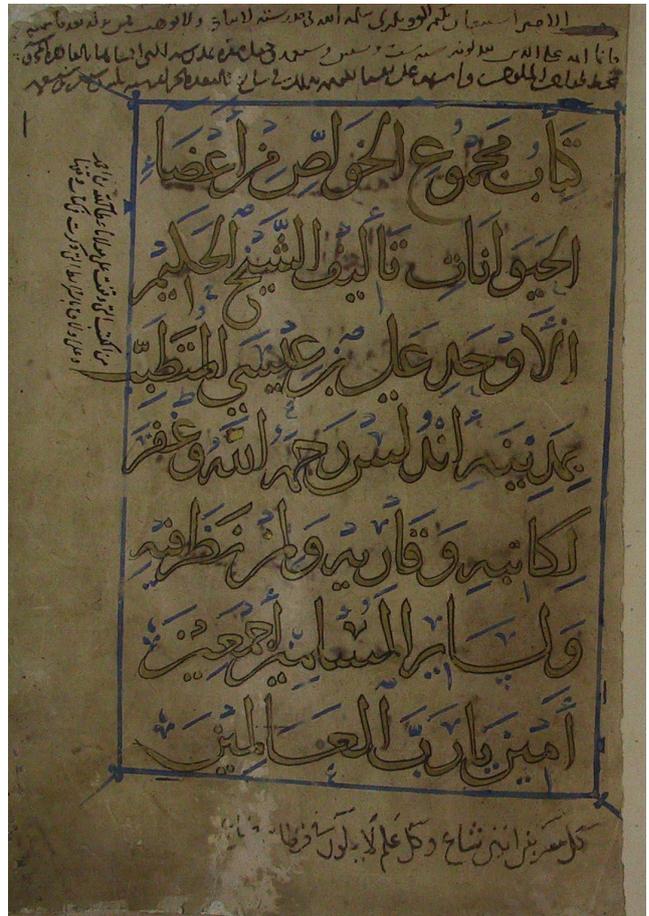
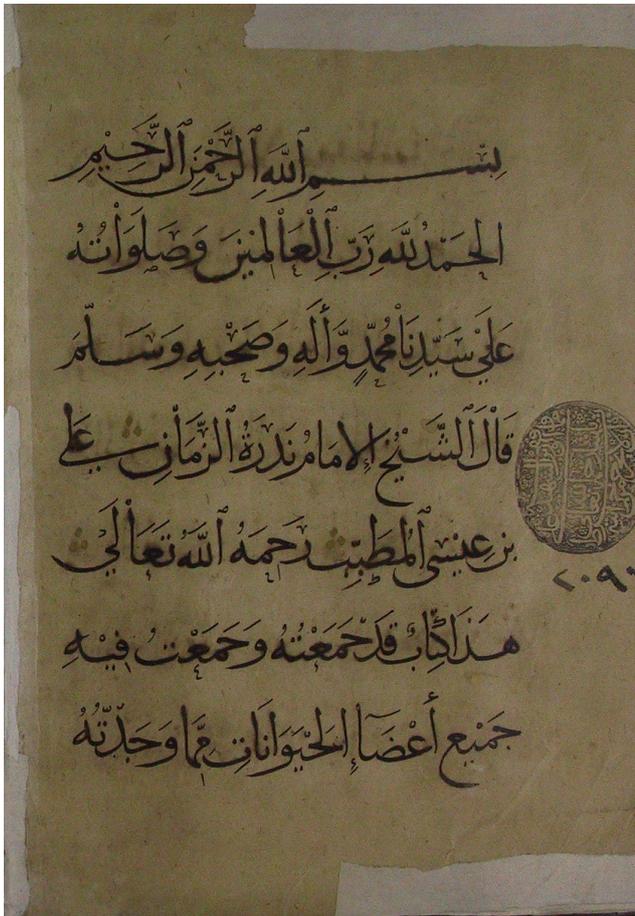
### **An experimental approach to editing a complex medical tradition**

My doctoral dissertation, completed in 2012 in the University of Naples “L’Orientale”, was dedicated to one of the earliest examples of Arabic medical literature, the *Kitāb Manāfi’ al-Ḥayawān*, attributed to ‘Īsā ibn ‘Alī. The textual tradition is characterised by a great degree of variance which poses obvious challenges for an edition.

‘Īsā ibn ‘Alī served as court physician to the Abbasid Caliph al-Mu‘tamid (870–892). Arabic sources unanimously present him as one of the most brilliant students of Ḥunayn ibn Ishāq (Ibn al-Nadīm, *Fihrist*; Ibn Abī ‘Uṣaybi‘a, *Ṭabaqāt al-A‘tibā’*). He was also a Nestorian and Syriac speaking Christian who took active part in the translation movement. In later sources, however, he started to be confused with the almost homonymous oculist ‘Alī ibn ‘Īsā who lived one century and half later (Ibn al-Qifṭī, *Ta’rīḥ al-Ḥukamā’*).

‘Īsā ibn ‘Alī was told to be the author of a medical text about the useful properties (*manāfi’*) that can be obtained from the parts of animals. This kind of texts was quite popular since antiquity, in fact it is possible to find sections devoted to it in Pliny’s *Naturalis Historia*, in the *Syriac Book of Medicines* and also in Byzantine sources (Timotheus of Gaza’s *Peri Zōōn* could have been one of the main sources). In the absence of direct textual connection, it is only possible to say that this medical-zoological lore met the acceptance of the public, not only for scientific purposes, but also as literary texts that included mirabilia and magic.

The *Kitāb Manāfi’ al-Ḥayawān* should have been one of the first examples of the genre in the Arabic literature, as the author himself claims in the introduction. The book is organised in chapters, each devoted to a single animal. The chapters are further divided in recipes, where different animal substances (organs, fluids, tissues) serve as basic ingredients for preparations. The proper medical indications are jumbled up with occult and magical practices. In the chapters’ division it is possible to



*Kitāb Manāfi' al-Ḥayawān*, ms. Istanbul Şehid Ali Paşa 2096, 17<sup>th</sup> cent., fol. 1r (frontispiece, right), fol. 1v (with the ownership mark, left)

observe that a sort of classificatory order is implied: predatory animals, wild animals, big mammals (mounts and beasts of burden), small mammals, birds, insects and fish.

The recipes contain approaches to a wide range of issues, giving room to both magical and superstitious practices (love potions, talismans, wondrous lanterns, devilish possession, *contravenenum*) and to common illnesses and necessities of life (liver complaints, eye diseases, fevers, swellings, toothache, delivery, abortion, teething).

I devoted significant attention in my research to a thematic analysis of recipes, departing from a hypothesis regarding the transmission of the *Kitāb Manāfi' al-Ḥayawān*. Besides providing guidance in medical aspects, the text was also a collection of curious and amusing tales. These tales kept the literary interest alive also after the Arabic medicine had already given rise to its greatest figures. Therefore, it is possible to assume that there were

two different kinds of readership (not necessarily contemporaneous): one interested in medicine, the other in amusing information. A proof of this can be found also in the quality of the witnesses. The manuscripts range from booklets written in simple cursive writing which covers the entire surface of the page (like Cairo TT 305) to a precious book rubricated in gold and blue with just a few lines of *muḥaqqaq* in every page (Istanbul Şehid Ali Paşa, see illustration). An ownership marks indicates that this book was part of the private collection of an Ottoman official and it was probably ordered and richly copied to become part of a collection of rare and precious books.

The internal structure and the particular readership deeply affected the manuscript tradition, making it prone to great changes. It was easy to enlarge a text like this adding new chapters and recipes, or to abridge it selecting only part of the materials, or to rewrite it choosing a different style. The manuscript

witnesses (only six were accessible to the editor: Berlin 6240, Istanbul Şehid Ali Paşa 2096, Gotha 67/2, Wien 1481/2, Leipzig 770, Cairo Ṭibb Timūr 305) confirm this process, showing great differences in length, style and contents.

The criteria for the edition had thus to be inferred from the peculiar features of this particular tradition. Trying to reconstruct an archetype would have definitely meant following a chimera, and so the aim of the edition was to present the text in a way that aims at clarifying the development of a complex and unstable tradition. The variations and the omissions that emerge in the phase of collatio tend to disorientate the researcher who tries to deal with more than one text bearing witness to the *Manāfiʿ* text, and therefore a synoptic display seemed the best way to present them. The manuscripts were grouped in three different branches, on the basis of similarities concerning the choice and the arrangement of the recipes and of the linguistic affinities. This editorial choice allowed displaying also the stylistic and linguistic variations among the different texts, offering a basis for a deeper study of Middle Arabic in scientific texts.

A systematic comparison of three entries (“elephant”, “lion” and “hoopoe”) with their counterparts in earlier (Ibn Buḥtīšū’s famous work on *Manāfiʿ*, still unpublished: mss. Paris 2782, Aya Sofia 2943, Chester Beatty 5006) and later works of the same genre or containing sections devoted to animal properties (Ibn Abī al-Ḥawāfīr, Damīrī, Qazwīnī) revealed that ʿĪsā ibn ʿAlī represents indeed a very early stage in the development of this tradition.

It is possible to find some traces that hint to an evolution of the genre in the manuscripts themselves. They consist in marginal annotations and rubrication that indicate a passage from the disposition of the materials chosen by ʿĪsā ibn ʿAlī and described above to different forms of textual organisation. For example, the rearrangement in the order of ingredients and the *a capite ad calcem* approach to therapeutic and medical texts.

Lucia Raggetti

University of Naples “L’Orientale”

## Digital Analysis of Arabic Biographical Collections<sup>1</sup>

Within the framework of my doctoral research I have been exploring the ways of in-depth computer-assisted analysis of biographical records in Arabic historical sources. The number of available records, ranging from short notices with little more than a name and dates of life to detailed biographies, reaches hundreds of thousands.<sup>2</sup> They are included in an array of chronicles and biographical dictionaries; the biggest collection of such kind, the *Taʿrīḥ al-Islām* of al-Ḍahabī (d. 1347), includes over 30,000 biographical records.<sup>3</sup>

The potential of these biographical data for the social historian of the Muslim world has been long recognised but few scholars ventured to approach the matter. In the 1970s and 80s, on the wave of popularity of quantitative methods in history, several scholars from different countries conducted methodologically similar studies, largely independently from each other.<sup>4</sup> However, only few remained faithful to this approach and came up with more than just one study. The main reason for that was that such studies were extremely laborious and time-consuming.

<sup>1</sup> An extended version of this paper will appear as “Writing Digital History of the Muslim World” in the Proceedings of the workshop on “The Methods and Means for Digital Analysis of Classical and Medieval Texts and Manuscripts”, 2-3 April 2012, Leuven-Brussels, Belgium.

<sup>2</sup> Over ninety years ago Italian scholars Leone Caetani and Giuseppe Gabrieli collected 250,000 biographical references, see Malti-Douglas – Fourcade 1976. My own biographical databank, which is still in the process of preparation, already includes over 86,000 biographies and biographical records (with only 24 biographical dictionaries processed).

<sup>3</sup> al-Ḍahabī 1990; on this source, see: Somogyi 1932.

<sup>4</sup> In Israel, Hayyim Cohen studied economic backgrounds of the early religious élite (Cohen 1970). In the USA, Richard Bulliet studied the social and religious élite of Nišāpūr (Bulliet 1972), and later – the process of conversion to Islām (Bulliet 1979); Carl Petry studied the civilian élites of Mamlūk Cairo (Petry 1981). In the USSR, a group of Soviet scholars (inspired and led by Piotr A. Griaznevich, all from the Leningrad Branch of the Institute of Oriental Studies of the Academy of Sciences of the USSR) studied the development of Arabic historical and religious writings in different areas of the growing Islamic empire (Boyko 1977; Prozorov 1980; Boyko 1991 – unfortunately, written in Russian, they remained unknown to Western scholars; all books have summaries in English). Scholars of the *Onomasticon Arabicum* project produces a series of publications on several biographical dictionaries: Richard-Bréaud 1971; Pascual 1971; Richard-Bréaud 1973; Malti-Douglas – Fourcade 1976; Rowson – Bonebakker 1980.

ing. In the late 1990s, advancements of computer technologies stimulated a few more attempts.<sup>5</sup> However, since the main “bottleneck” of manual data entry remained unresolved, a number of projects were never finished.<sup>6</sup>

After my first unsuccessful attempt to create a database for the study of Arabic historical sources almost ten years ago,<sup>7</sup> I am now full of hopes that there is an efficient way of overcoming the limitations of conventional relational databases. Taking advantage of the large corpus of Arabic historical texts that have recently become digitally available, the wide acceptance of the Unicode standard, and the possibilities offered by scripting languages one can now approach the issue from a different angle. A significant amount of the tedious job of data entry can be “delegated” to the computer. In the case of biographical records, we are dealing with highly structured texts where specific kinds of information (e.g., chronological, onomastic and toponymic data) conform to distinctive textual patterns, which can be described with *regular expressions* and thus easily manipulated with scripts. At the same time, relying on text processing scripts, one can overcome the structural rigidity of conventional relational databases, making the data adjustable and available for research purposes as soon as possible. As an alternative to the relational database format, the extracted data can be kept in simple text files, where each unit of processed data is tagged and therefore machine readable. These text files become a databank that can be updated with new kinds of information at any moment and serve as the source for a database, which can be automatically [re]generated at any time to fit specific data and research agenda.

Each source is treated separately and as a whole. First, it is tagged so that the computer could differentiate between its structural elements and split the text of the source into separate blocks of data, such as descriptions of events and texts of biographies/

obituaries. Next, the source is parsed into individual blocks. Each of newly generated blocks has two parts: the first one is a *cubaron*, the paragraph that contains tagged metadata extracted from the source; and the second one is an *eNaşş*, the actual text of a biography or an historical event. Subsequently, data-mining scripts are applied to extract required information.

In case of manual data processing the historian codes one biography at a time. Computationally, however, it is more efficient to extract one particular kind of data at a time from all the biographies of a particular source. Each script can be adapted to process historical dates, “descriptive names” (sing. *nisba*), toponyms etc.; moreover, dealing with the same type of information makes it easier to discern patterns and thus adjust *regular expressions* within *scripts* for better performance. Another advantage of such approach is that it allows the historian to begin the analysis of data long before the database could possibly be completed. Starting with the analysis of only few parameters, the historian will be able to gradually increase its complexity as new parameters become available.

For automated extraction of *nisbas*, a machine-readable list of “descriptive names” was created from the *Kitāb al-ansāb* of al-Samʿānī (d. 1166 CE), the major pre-modern dictionary of “descriptive names.” Each of 4,400 entries in this dictionary includes three important units of information: 1) a “descriptive name” itself, 2) its vocalisation, and 3) its definition. The “descriptive names” were marked-up during the initial structure tagging, so extracting them was very easy. The results of the next task – automatic extraction of vocalisation – were quite impressive: over 4,000 vocalisations – i.e. more than 90% – were extracted correctly. The extraction of definitions was a more complicated procedure, but overall very successful as well. This particular task was based on the premise that each thematic section begins with a rather limited number of transitional formulae, instances of which are frequent enough to make automatic extraction not only possible, but also efficient.

The last step in text-mining this particular source is to assign each *nisba* to a specific category, or categories (ancestral, geographical, religious, oc-

<sup>5</sup> Jerusalem Prosopography Project (JPP) founded and directed by Michael Lecker deals with Early Islamic Administration (ca. 622–800, <http://micro5.msc.huji.ac.il:81/JPP/homepage/>); on the Netherlands Ulama Project (NUP) of John Nawas and Monique Bernards, see Nawas – Bernards 1998.

<sup>6</sup> See Mathisen 2007.

<sup>7</sup> The project was described in details in Prozorov – Romanov 2003.

cupational, tribal etc.), which can be done by using sets of keywords, usually found within the definition itself. After these tasks are accomplished, the data from “source files” can be converted into the format suitable for other data-mining tasks.

Although the project is still in its rather early stages of development, I hope that even these preliminary results prove that the method is effective and will soon allow to realise the full potential of the approach, which was conceptualised over forty years ago by Bulliet (1970).

#### Quoted bibliography

al-Ḍahabī (Muḥammad b. Aḥmad b. ‘Uṭmān b. Qaymāz b. ‘Abdallāh al-Ḍahabī aš-Šāfi‘ī), *Tārīḥ al-Islām wa-wafayāt al-mašāhīr wa-al-a‘lām*, Bayrūt: Dār al-Kitāb al-‘Arabī, 1990.

Bichard-Bréaud, Pierre, *Documents sur la mise en ordinateur des données biographiques*, Paris: Éditions du CNRS, 1971 (Onomasticon Arabicum, 1).

Bichard-Bréaud, Pierre, *Traitement automatique des données biographiques; analyse et programmation*, Paris: Éditions du CNRS, 1973 (Onomasticon Arabicum, 5).

Boyko, Konstantin A., *Arabskaja istoričeskaja literatura v Ispanii: VIII-pervaia tret’ XI veka*, Moskva: Glavnaja redakcija vostočnoj literatury, 1977.

Boyko, Konstantin A., *Arabskaja istoričeskaja literatura v Egipte, IX-X veka*, Moskva: Nauka, 1991.

Bulliet, Richard W., “A Quantitative Approach to Medieval Muslim Biographical Dictionaries”, *Journal of the Economic and Social History of the Orient*, 13, 1970, pp. 195–211.

Bulliet, Richard W., *The Patricians of Nishapur: a Study in Medieval Islamic Social History*, Cambridge, MA: Harvard University Press, 1972 (Harvard Middle Eastern Studies, 16).

Bulliet, Richard W., *Conversion to Islam in the Medieval Period: an Essay in Quantitative History*, Cambridge, MA: Harvard University Press, 1979.

Cohen, Hayyim, “The Economic Background and the Secular Occupations of Muslim Jurisprudents and Traditionists in the Classical Period of Islam (Until the Middle of the Eleventh Century)”, *Journal of the Economic and*

*Social History of the Orient*, 13, 1970, pp. 16–61.

Malti-Douglas, Fedwa – Fourcade, Geneviève, *The Treatment by Computer of Medieval Arabic Biographical Data: an Introduction and Guide to the Onomasticon [i.e., Onomasticon] Arabicum*, Paris: Editions du CNRS, 1976.

Mathisen, Ralph W., “Where are all the PDBs?: The Creation of Prosopographical Databases for the Ancient and Medieval Worlds”, in: *Prosopography Approaches and Applications: A Handbook*, ed. by Katharine Keats-Rohan, Oxford: Oxford University Press, 2007 (Prosopographica et Genealogica, 13), pp. 95–126.

Nawas, John – Bernards, Monique, “A Preliminary Report of the Netherlands Ulama Project (NUP): the Evolution of the Class of ‘ulamā’ in Islam with Special Emphasis on the Non-Arab Converts (mawālī) from the First through Fourth Century A.H”, in: *Law, Christianity and Modernism in Islamic Society. Proceedings of the Eighteenth Congress of the Union Européenne des Arabisants et Islamisants ... Leuven ... 1996*, ed. by Urbain Vermeulen and Jan M.F. van Reeth; Leuven: Peeters, 1998 (Orientalia Lovaniensia Analecta, 86).

Pascual, Jean Paul, *Index schématique du Ta’rīḥ Baġdād*, Paris: Éditions du CNRS, 1971.

Petry, Carl F., *The Civilian Elite of Cairo in the Later Middle Ages*, Princeton, N.J.: Princeton University Press, 1981.

Prozorov, Stanislav M., *Arabskaja istoričeskaja literatura v Irake, Irane i Srednej Azii v VII-seredine X veka: šiitskaja istoriografija*, Moskva: Nauka, 1980.

Prozorov, Stanislav M. – Romanov, Maxim G., “Metodika izvlečenja i obrabotki informatsii iz arabskih istočnikov (na materiale istoriko-biografičeskoj literatury)”, *Oriens/Vostok*, 4, 2003, pp. 117–27.

Reynolds, John F., “Do Historians Count Anymore? The Status of Quantitative Methods in History, 1975–1995”, *Historical Methods*, 31, 1998, pp. 141–48.

Rowson, Everett K. – Bonebakker, Seeger Adrianus, *A Computerized Listing of Biographical Data from the Yaṭīmat al-dahr by al-Tha‘ālibī*, Paris: CNRS – Los Angeles, CA: University of California, 1980 (Onomasticon Arabicum, 3).

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## Conference reports

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In this issue:

COMSt workshops:

12 January 2012, Paris (FR), 'Legal and Illegal Circulation of Library Collections'

7-8 June 2012, Copenhagen (DK), 'The Electronic Revolution? The Impact of the Digital on Cataloguing'

Conferences and workshops in manuscript studies:

15-18 February 2012, Berne (SZ), 'InterNational and InterDisciplinary Prospects of Scholarly Editing'

8-9 March 2012, Copenhagen (DK), 'Transfer of Knowledge from Alexandria to Toledo'

2-3 April 2012, Leuven (BE), 'Methods and means for digital analysis of ancient and medieval texts and manuscripts'

17-18 May 2012, Sofia (BL), 'Authors, Texts and Lexicographical Data-bases'

### COMSt workshops

#### Legal and Illegal Circulation of Library Collections

This is a slightly shortened English translation of the report published in French in *Le Bulletin des bibliothèques de France*, 3, 2012, 86-87 (<http://bbf.enssib.fr/consulter/bbf-2012-03-0086-002>).

The third workshop of the COMSt team Conservation and Preservation, dedicated to the Circulation of Library Collections, was held on 12 February 2012 in the Université Paris-Sud XI, Faculté Jean Monnet. It was co-organised by the ENSSIB (École Nationale Supérieure des Sciences de l'Information et des Bibliothèques, [www.enssib.fr](http://www.enssib.fr)) and the MANUMED project ([www.manumed.org](http://www.manumed.org), s. project presentation in *COMSt Newsletter*, 1) as the fifth colloquium of the *Droit et patrimoine en bibliothèque* ("Law and heritage in libraries") series.

The first panel was dedicated to the historical and geographical setting. S. Ipert opened the symposium by presenting the first results of an ongoing research into the legal status of the art objects circulating in Antiquity (namely, the Roman Empire), covering the acceptable lootings, illegal thefts and the imposed restitutions. In the subsequent talk, P. Rueda considered the exchange network of European books between Spain and Latin America during the 16<sup>th</sup> century and the strategies of smuggling in danger of the Inquisition. C. Dondi focused on the 19<sup>th</sup> century, illustrating her point by the case study of the incunabula collection of the Bodleian library. The legal framework was identified in the second

workshop panel, first by N. Palmer, who analysed several cases of illegal transactions involving cultural heritage against the background of the English law, and then by M. Cornu who expanded on the difficulties encountered in the implementation of an effective policy to fight illicit trafficking of cultural objects in the countries of the European Union. The conflicts and difficulties are in part due to the divergence of legal systems, and a necessity of a universal regulation was particularly underlined. Many of the recommendations (including the increase of vigilance, improvement of information exchange, etc.) have already been accepted by the Council of the European Union.

Several members of the COMSt network offered regional case studies to illustrate the range of problems in the Oriental studies context. D. Kouymjian described in great detail a number of litigations concerning Armenian manuscripts in the period following the genocide. J. Moukarzel set forth the precarious state of Near-Eastern libraries and the need to pursue a policy of archiving and digitisation. F. Briquel-Chatonnet exposed the method of intervention used by researchers in the struggle against the trade in false Syriac manuscripts. E. Balicka-Witkowska focused on the role of local communities in the preservation and protection of Ethiopian manuscripts.

For the full programme and a detailed conference report, visit <http://www1.uni-hamburg.de/COMST/meet5-3.html>.

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## The Electronic Revolution?

### The Impact of the Digital on Cataloguing

On 7 and 8 June 2012 the third workshop of COMSt team Oriental Manuscripts Cataloguing was held in the Nordisk Forskningsinstitut of Copenhagen University. Organised by Paola Buzi (Rome), Witold Witakowski (Uppsala), Jost Gippert (Frankfurt), and hosted by Matthew Driscoll (Copenhagen), the workshop attracted over 40 attendees.

The main goal of the workshop was to explore the possibilities offered by electronic manuscript cataloguing in Oriental studies, the advantages (and disadvantages) of electronic vs paper catalogues, and the challenges faced by the scholars creating and using electronic catalogues.

In the first session, a range of cataloguing initiatives were presented, with the main focus on the technical and scientific characteristics and “philosophy” behind each project. The platforms and sites introduced included ArkA-D - a tool for the digitisation of the archival collections of research libraries (Sweden, presented by M. Berggren), PhiC at AB-JAD (France, M. Geoffroy), E-codices (Switzerland, presented by Ch. Flüeler), Manuscripts at CSIC (Spain, M.T. Ortega-Monasteiro). Two of the German cataloguing applications presented were using MyCORE database software (Turfan manuscripts in Berlin, S. Raschmann; Ethiopic manuscripts in Hamburg, D. Nosnitsin); another initiative uses an offline tool that generates XML files for online publication (Manuscripta Mediaevalia and MXML tool, A.-B. Riecke). TEI P5 XML scheme was used by E-codices and ArkA-D as well as by the Greek Manuscripts in Sweden project (E. Nyström, P. Granholm). The TEI application was illustrated in more detail on the example of the Wellcome Library Digital Catalogue of Arabic manuscripts (E. Pierazzo). The second session was introduced by a theoretical resume by P. Buzi and consisted in a roundtable discussion. Among the central points raised was the issue of catalogues doing justice to complex manuscript histories and duly reflecting cases of manuscripts consisting of several codicological units, or dismembered and dispersed in several collections.

The third session took place on the second work-

shop day. It was dedicated to the issue of hypercatalogues and portals that render access to distributed manuscript repositories and the like. After an overview of existing portals and their typology by J. Gippert, the functionality was illustrated on the example of the CERL portal (I. Boserup). A discussion of requirements in the field of Oriental manuscript cataloguing ensued, focusing on the degree of necessity of standardisation in data distribution and in terminology that would enable successive data retrieval by search engines of hypercatalogues.

The fourth session was dedicated to a detailed explanation of the TEI manuscript description module (mDesc). M. Driscoll paid particular attention to the possibilities offered by hyperlinking to pre-created authority files and the advantages presented by the hierarchical XML descriptions. A round of questions and answers concerning the possibilities of TEI encoding and envisaged developments concluded the session. As a final presentation, M. Driscoll showed how TEI in combination with multiple stylesheets can be used for creating multi-layer text editions.

For a detailed conference report, visit <http://www1.uni-hamburg.de/COMST/meet4-3.html>.

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### Conference and workshops in manuscript studies

#### InterNational and InterDisciplinary Prospects of Scholarly Editing

The 8<sup>th</sup> international conference of the European Society for Textual Society (ESTS) was organised on February 15-18, 2012 in Bern (Switzerland), in collaboration with the Arbeitsgemeinschaft für germanistische Edition, Arbeitsgemeinschaft philosophischer Editionen and Fachgruppe Freie Forschungsinstitute der Gesellschaft für Musikforschung. The conference was entitled Inter National and Inter Disciplinary Aspects of Scholarly Editing. The programme was extremely dense, with on the one hand plenary sessions and on the other up to four simultaneous parallel sessions (the lectures were given in German or in English, and a few in French). In keeping with the main goal of the ESTS,

the conference brought together specialists in textual scholarship (text editing, history of text, history of book, bibliographical studies, genetic criticism...), working on texts written in all languages from Antiquity up to now – with a major presence of 19<sup>th</sup>-20<sup>th</sup> cent. German and English literature. It is without doubt important that “textual scholarship” (*olim* philology) is recognised as a scholarly discipline in its own right, a discipline which transcends the boundaries of historical periodisation and linguistic areas. But does something like “textual scholarship” really exist? Is the methodological gap between the different types of approaches to texts not too large to be bridged? If some of the speakers tried to underline the similarities and possible contact points between those approaches (Wim Van Mierlo’s paper *Reflections on Textual Editing in the Time of the History of the Book* is representative of these attempts, but it was not the only one), it also appeared that a word like “edition” (not to talk about “text” or “work”), which is a key concept (is it a concept or rather a practice?) in a large part of what is called “textual scholarship”, does cover very different realities, although it is the same word in most European languages. One of the plenary panels organised by Peter Shillingsburg,<sup>1</sup> was entitled “Crossing Philology’s Cultural Boundaries”; it offered lectures by Paul Eggert (Canberra, Australia), Kiyoko Myojo (Tokyo, Japan), and Sukanta Chaudhuri (Kolkata, India), i.e. all textual scholars working on contemporary literature, at the borders, as it were, of the Anglo-American cultural empire – I am not sure that the boundaries lie exactly there, but rather between scholars working on texts written before the invention (or the general use) of the printing press, and scholars who are working on modern literature. Amongst the latter, there are a few people aware of the history of philology and of the methodological evolution of the field – but not all of them.

Alessandro Bausi and Caroline Macé presented the COMSt network at the third session, “Internation-

al Standards of Editing Texts: Advantages and Limitations”. We tried to explain what COMSt is and why we want to write a handbook of comparative Oriental manuscripts studies: why it is necessary, why the comparative approach is so important, where we should situate Oriental philology within the larger picture of Classical and Medieval philology, etc. We were offered the possibility of publishing our lecture as a paper in *Editio: Internationales Jahrbuch für Editionswissenschaft*.

The complete programme can be viewed at <http://www.parzival.unibe.ch/Bern2012/index.html>.

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### Transfer of Knowledge from Alexandria to Toledo

The workshop on the Transfer of Knowledge was held on March 8-9, 2012, at the Department of Cross-Cultural and Regional Studies, University of Copenhagen. It was hosted by Kerstin Eksell, University of Copenhagen and Irmeli Perho, The Royal Library of Denmark. The workshop was the second in a series of meetings organised by the “From Alexandria to Toledo” network, a joint enterprise between several universities and libraries studying the dynamics of the transfer of Greek secular learning around the Mediterranean ([www.greekarabictransfer.com](http://www.greekarabictransfer.com)). The first one, held on May 13, 2011, focused on the scholarship in natural sciences both in the Islamic world and in Byzantium.

The 2<sup>nd</sup> workshop dealt more broadly with issues of translation, transfer of texts and cultural encounters. The first paper was presented by Dimitri Gutas from Yale University on the state of the art and future prospects in Graeco-Arabic studies. He first summarised the previous achievements of the field and underlined the importance of text editions. He then proceeded to present his own current work of text philology relating to the Aristotelian corpus. As to future challenges, D. Gutas pointed to the increasing scholarly interest in contextualising the secular scientific texts and in assessing their impact on the social and intellectual environment from the eighth century onwards.

The participants of the workshop presented papers

<sup>1</sup> Perhaps not so well known amongst Classicists, Medievalist and Orientalists, Schillingsburg is the influential author of *Scholarly editing in the computer age: theory and practice*, 1996<sup>3</sup> and of *From Gutenberg to Google: electronic representation of literary texts*, 2006.

and discussed issues relating to both text philology and context of learning. Among the papers on text philology were those of Kerstin Eksell (Copenhagen) and Jaakko Hämeen-Anttila (Helsinki), the former analysing connectors in Greek and Arabic versions of Euclid's *Elementa* and the latter in discussing translations from Persian to Arabic. The social setting and impact of scholarship formed a part of Remke Kruk's paper on natural philosophy and science. In the subsequent discussions she further underlined that the studies should not only focus on scholars but also take into account the impact the classical Greek learning had on the wider population and their perception of nature. The social context and practices were the focus of my own paper dealing with the scholarly networks in the ninth century Baghdad.

The full programme and the abstracts of the papers of both the first and the second workshop can be seen at <http://www.greekarabictransfer.com> under "News & events".

Irmeli Perho

The Royal Library, Copenhagen

### Methods and Means for Digital Analysis of Ancient and Medieval Texts and Manuscripts

The workshop, convened by Caroline Macé and Tara Andrews within the framework of the CREA project, was held on 2-3 April in Leuven (Catholic University) and Brussels (Royal Flemish Academy).

The first session of day one (Leuven) focused on palaeography and manuscript digitisation. Ira Rabin presented cutting-edge work on the application of infrared imaging to the chemical identification (and therefore, in many situations, the provenance) of the ink used in medieval manuscripts. Daniel Deckers continued by expanding on ultraviolet and multi-spectral imaging methods. Ainoa Castro Correa presented her database of Visigothic palaeography.

The second session saw presentations by Patrick Andrist and David Birnbaum on the topic of manuscript descriptions and cataloguing. Andrist proposed a cataloguing model for online (and print) use that is more suited than common current mod-

els for the accurate capture of information for the different parts that might comprise an entire manuscript. Birnbaum discussed the analysis techniques that he has applied to the catalogue descriptions of medieval Slavic manuscripts.

Session three focused on stemmatology. Jean-Baptiste Camps and Florian Cafiero (Paris) presented the techniques that they have developed to handle translations within a text tradition; Philipp Roelli presented a neo-Lachmannian method aimed at the automatic identification of Leitfehler, or "significant error" that can be used to reconstruct a text stemma.

Session four concerned statistical and stylistic analysis of texts. Armin Hoenen presented his research into creating a statistical model for scribal error and showed its application in the case of Avestan manuscripts. Karina van Dalen-Oskam demonstrated the use of stylistic analysis applied to the *Rijmbijbel* of Jacob van Maerlant, not only to examine the ways in which a text was adapted by its various scribes but also to show the effect that modern edition has had. The final paper, by Mike Kestemont and Kees Schepers, demonstrated the application of stylistic methods to distinguish distinct "voices" in the collection *Ex epistolis duorum amantium*, which provides scientific support for the hypothesis that the letters did indeed have two authors.

The final discussion of day one focused on the nature of textual scholarship and the place of digital vs non-digital text edition.

Day two (Brussels) opened with the fifth session, on existing databases for textual analysis and presentation. Eugenio Luján and Eduardo Orduña presented their work on a database of palaeo-Hispanic inscriptions; the database raises a number of issues for encoding and representation of text that we do not yet have the ability to read. Nadia Togni presented BIBLION, a database for the representation and display of Italian "giant Bibles" of the 11<sup>th</sup> and 12<sup>th</sup> centuries. Francesco Stella gave an overview of the state of the art of digital publication, and presented the publication of the *Corpus Rhythmorum Musicorum* in this context.

Session six returned to the issues of stemmatology. Alberto Cantera discussed the coherence-based

model for ascertaining text genealogy as it applies to the tradition of Avestan religious texts, and Tuomas Heikkilä discussed the transmission and readership of the *Life and Miracles of St. Symeon Treverensis*.

Sessions seven and eight looked at aspects of inter-textual analysis, taking us from scholarship of a single text or corpus to the investigation of relationships across disparate texts. Charlotte Tupman presented the work of the multi-institutional *Sharing Ancient Wisdoms* project on tracing the provenance and transmission of gnostic sayings throughout medieval literature, including Greek and Arabic works. Samuel Rubenson and Benjamin Ekman presented their work on a database of the *Apophthegmata Patrum* as transmitted throughout medieval Christian literature. Linda Spinazzè presented the *Musisque Deoque* project and discussed the ongoing research into intertextual aspects of their corpus of medieval Latin poetry up to the Renaissance. Finally, Maxim Romanov discussed his work on the analysis of public sermons in the Islamic world, as reported in Arabic chronicles.

The organisers of the workshop (C. Macé and T. Andrews) closed the event with a presentation of the *Tree of Texts* project, wherein we seek to derive an empirical model for textual transmission in the Middle Ages based on the statistical analysis of a variety of texts in several different languages.

The workshop was an excellent showcase for the wide variety of analysis methods and techniques being applied to the study of medieval texts. The very good attendance (40-45 participants on each day) resulted in some stimulating discussion after each of the paper sessions.

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### **Authors, Texts and Lexicographical Databases**

A workshop on the topic “Authors, Texts and Lexicographical Data-bases” was organised in Sofia (Bulgaria) on May 17-18, 2012, within the framework of the COST Action IS1005 Medioevo Europeo / Medieval Cultures and Technological Resources ([www.medioevoeuropeo.eu](http://www.medioevoeuropeo.eu), 2011-15). The core

business of this COST Action is of course Western Middle Ages, but several papers given at this particular workshop were of interest for scholars working on Greek and Slavonic Medieval texts. I am only highlighting some of them, which I found particularly relevant.

Ana Stoykova (Bulgarian Academy of Sciences, Institute of Literature) presented some of the philological issues at stake in editing the Slavic versions of the Physiologus, and she explained why she chose for a digital edition (<http://physiologus.proab.info/>).

Anna-Maria Totomanova (Sofia University St. Kliment Ohridski), in her presentation entitled *Digital Presentation of Bulgarian Lexical Heritage. Tools and Perspectives*, demonstrated some of the quite remarkable endeavors in Bulgaria to digitise texts and manuscripts. Viktor Baranov (University of Izhevsk, Russia), and Valentin Vulchanov with Mila Vulchanova (The Norwegian University of Science and Technology, Trondheim), both from a rather linguistic perspective, presented their own projects of digitisation of Slavonic Medieval manuscripts.

Maria Vasiloudi and Wolfram Brunschön (University of Saarland, Germany) have developed a database of Post-Byzantine iatrosophia (i.e. medical texts written by practitioners, prescriptions, popular medicine...), in which they are digitizing Greek manuscripts (starting with Mount Athos manuscripts), describing them (codicological and palaeographical descriptions), transcribing the texts and sometimes editing them critically, when the same text is contained in more than one manuscript.

Music history was also represented in this workshop, by a paper on the digitisation of the Rila monastery manuscripts, given by Svetlana Kujumdzhieva (Bulgarian Academy of Sciences – Institute of Arts Studies)

Finally, I presented a project of a *Clavis Clavium: an Online Research Environment for Greek and Latin Christian Texts and Authors* (KU Leuven), for which we are seeking collaborations in order to integrate as much as possible extant Clavis of Oriental translations of Greek Patristic texts.

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## Miscellanea

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In this issue:

Peter Gumbert, *A note of comment on “The production of Arabic multi-block Bibles”*

Dickran Kouymjian, *Some notes on Armenian codicology*

Denis Nosnitsin, *The Four Gospel Book of Dābrā Ma‘šo and its marginal notes. Part 1: Note on the commemoration of Patriarch ‘Astona*

### A note of comment on “The production of Arabic multi-block Bibles”

It is very gratifying to find that my ideas have found an echo, and to see them well applied in a very useful and interesting article, such as that by Ronny Vollandt on “Arabic multi-block Bibles” in the previous issue of the *Comparative Oriental Manuscript Studies Newsletter*. On the other hand it is mortifying to see that some of them were not perfectly understood, surely because I had failed to be sufficiently clear and explicit in explaining them. I may add that, after my Dutch and English texts had been published, I found a handy criterion to help in deciding whether two groups of quires are to be considered codicological units (CU) or just blocks within a CU: if one of the two were absent, would you be surprised? If they were in different order, or there was something between them, would you think that strange? If no, they are CUs; if yes, they are blocks.

The table, p. 33, calls for a few comments. The first major quire group, ff. A, 1–85, is correctly divided into two blocks; even if they are by different hands (and not necessarily written in their present order), one can assume that they were meant to be together (in this order). Each block ends with an “atypical” quire. One should not describe, at the end, “84r–86r blank”, because such a description bridges the caesura, and masks the nature of the blanks. One should say “84r–85v blank”; that is the end of the quire, and it is blank because there was no more text to put in it. With “86r blank” begins the description of the next quire group, and this page is blank because there clearly is a rule that major text groups begin with a complete opening, that means: on a verso, and if that does not happen naturally, one simply leaves a recto blank.

Ff. 86–195 constitute the second major quire group. It

does not need a smaller or bigger quire at the end.

The third major group, ff. 196–390, is the work of two scribes, a Christian and a Muslim. But the transition happens in the middle of a quire: C starts to write in a quire of which B had already filled half! So there is no caesura, and there are no separate blocks (which means: the work could not possibly have been done in another order).

But the fourth major group, ff. 391, 458, is indeed again divided into two blocks, the first with an atypical quire at the end. Here the Wisdom books do not begin on a verso; but the Maccabees do. Again, one should describe “424v–428v blank” as the end of the first block, and “429r blank” as the beginning of the second. (The dotted line should have been over, not under, quire 429–438. At the end, add “458v blank”.)

What is the status of these “major quire groups”? If one could be sure that this is indeed “the product of a professional workshop”, which produced (i.a.) just such Bibles, one would call them blocks; but I think the evidence of this one manuscript, as here presented, is not enough to prove that we do not have here a unique combination of what we must call four codicological units (if one were missing, one would not think that strange; if one had only one of the four, one would never guess that there had been, or should have been, three others). The very welcome study of the parallel manuscripts announced at the end of the article may change this judgement.

Another point: the terms “allogenic” etc. The second CU, by scribe B, and the fourth, by D, are each monogenetic = “produced by the same scribe”. The first, by scribes A, B and C, and the third, by D and C, are not monogenetic; but since one judges the

scribes to have worked more or less “together”, or at least in the same circle at the same time, they are homogenetic (and not, as on p. 34, allogenic = “not produced in the same circle and time”). And since all four blocks are judged to have been produced in the same circle at the same time, the whole book is a homogenetic composite.

It may be interesting to note that the dates quoted on p. 32 allow one to calculate that scribe C wrote, in 73 days, 63 leaves, that is (on the average) 0.8 leaf

a day; scribe B did 39 leaves in 17 days, = 2.3 leaf a day. These are speeds that compare perfectly with speeds normal for Western scribes. It would be worthwhile to collect more data on the working speeds of Arabic (and other non-Western) scribes.

A minor detail: my second article, the one in German, is not “2004b”: it was written in 2008, and published in 2010.

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## Notes on Armenian Codicology.

### Part 1: Statistics Based on Surveys of Armenian Manuscripts

[Reflections on statistics compiled from the Matenadaran Manuscript Repository (Erevan) summary catalogues, vol. I (mss 1-5,000, 1965), vol. II (mss 5,001-10,408, 1970), vol. III (mss 10,409-11,077, 2007), and master catalogues, vols. 1-5 (mss 1-1,800, 1984-2009).]<sup>1</sup>

Codicology, the study of the manuscript as a physical object rather than simply a transmitter of a text, is a very new and little explored domain of Armenian studies. No manual exists, not even a substantial general article. Recent research has been confined to two specialised areas, manuscript structure and binding<sup>2</sup> and paleography,<sup>3</sup> though the latter is usually not considered to be strictly part of codicology. There have also been studies devoted to pigments<sup>4</sup> and, to a much lesser extent, inks. Little or no attention has been paid to writing surfaces, ruling, pricking, quire formation, folding, page layout, or textile linings of bindings.<sup>5</sup> Illuminations and manuscript decorations have fared better, but mostly in the domain of art history rather than codicology. One of the reasons that Armenian codicology is underdeveloped relates directly to the ubiquitous prevalence of the colophon in Armenian manuscripts. By carefully recording the elements that made up the structure of a manuscript, and comparing these

to like features of clearly dated works, scholars of Greek and Latin codices added to the existing arsenal of dating, which already included palaeography and the study of illustrations. The same method was also applied to identifying place of production and even separate workshops. But as I have pointed out more than once, the inclusion of the scribal memorial has privileged the study of Armenian manuscripts by granting with absolute precision the date and place of the copying in more than 55% of them:<sup>6</sup> An extremely high ratio, perhaps the highest of any medieval manuscript tradition. Thus, the urgency of uncovering secondary dating tools through physical analysis of the codex was greatly diminished.

Nevertheless, codicological analyses based on statistics from published manuscript catalogues, such as the transition from parchment to paper (Table 1), from majuscule to minuscule, or the change in quire size (Table 2), can yield very precise information on the moment of the dominance of one support over another or the change in the size of gatherings.

The estimated number of surviving Armenian manuscripts has increased over the past quarter century from 25,000 to somewhere above 30,000.<sup>7</sup> I have myself opted for 31,000,<sup>8</sup> but as will be seen from the statistics below about the actual number of in-

<sup>1</sup> Eganyan et al. 1965, 1970, Malkhasian 2007, short descriptions of 11,077 manuscripts; Eganyan et al. 1984-2009, also available online: [http://www.matenadaran.am/v2\\_2/](http://www.matenadaran.am/v2_2/).

<sup>2</sup> On structure see Merian 1993.

<sup>3</sup> For details and thorough bibliography see Kouymjian 2002=2006:5-75.

<sup>4</sup> A loosely constituted team of scientists and scholars including Mary Virginia Orna, Diane Cabelli, and Thomas F. Mathews have produced a dozen articles summarised in Orna 1994.

<sup>5</sup> An album of watercolor reproductions of such textiles was prepared by Dournovo 1953; see also Tarayan 1978.

<sup>6</sup> Kouymjian 1983[1984]:427f.

<sup>7</sup> The 25,000 number was given by Sanjian 1976:1; I had used Sanjian's number in Kouymjian 1983 [1984]:426. In 1958, Sirarpie Der Nersessian had proposed 20,000 (Der Nersessian 1958, vol. 1, p. xxi).

<sup>8</sup> Some years ago I opted for this figure based on discussions with Bernard Coulie after the publication of his *Répertoire* (1995-2004); a revised edition has been announced; see also my review (Kouymjian 1992-93).

Table 1. Evolution from parchment to paper. By the last quarter of the twelfth century paper began its domination over parchment and a century later completed the process.

Date	Mss	Parchment	Paper	Date	Mss	Parchment	Paper
0851-	1	1		1126-	1		1
0876-	1	1		1151-	13	7	6
0901-	2	2		1176-	21	8	13
0926-	0			1201-	25	11	14
0951-	4	4		1226-	23	14	9
0976-	4	3	1	1251-	46	26	20
1001-	3	3		1276-	84	19	65
1026-	12	12		1301-	62	17	45
1051-	9	9		1326-	63	11	52
1076-	4	3		1351-	45	1	53
1101-	2		2	1376-1400	32	2	30

Table 2. Quire size: 115 dated manuscripts to 1600.

Date	Quaternion (8ff.)	Quinion (10ff.)	Senion (12ff.)	Quire (14ff.)	Quire (16ff.)	Quire (20ff.)
11 <sup>th</sup> cent.	03					
12 <sup>th</sup> cent.						
13 <sup>th</sup> cent.	07	02	15		03	01
14 <sup>th</sup> cent.			32	01	03	
15 <sup>th</sup> cent.			26	01	01	
16 <sup>th</sup> cent.			18			

dividual manuscripts (usually discrete bound volumes) this does not give an accurate account of separate items since there seems to be an inflation factor of about 9% due primarily to bound volumes which contain more than a single manuscript.<sup>9</sup> To be fair, one might subtract from the total, a number of flyleaves, which are sometimes counted as individual manuscripts, though such guard leaves are in fact often fragments of separate manuscripts. Also, one ought to take into account early printed books and subtract them, since they are often bound just like manuscripts and counted among them in many collections.<sup>10</sup>

### Observations on Tabulating the Manuscripts

In every case the number of items listed in the index of manuscript catalogues arranged by date (discrete items) is always greater than the number of catalogued codices. For example the summary catalogue of the Matenadaran (Repository of Ancient Manuscripts), Erevan, v. I (1965), 5,000 numbers, 5,418 items counted (+ 8%); v. II (1970) 5,408 numbers, 5,886 items (+ 9%); v. III (2007) 668 numbers, 705 counted (+ 6%); Master Catalogue, Matenadaran, Erevan, v. 1-5, 1,800 numbers, 2012 counted

<sup>9</sup> This figure is derived from a statistical analysis of the 11,077 manuscripts thus far published from the Matenadaran collection in Erevan. Using the date indices in these volumes, 12,009 individual items were counted. To what extent this reflects individual manuscripts bound together or other anomalies was not determined or even attempted to control.

<sup>10</sup> Hybrid examples also exist of a printed text bound together with a manuscript, Kouymjian 2008:19, a printed book of 1669 with manuscript texts copied in 1697–98 and bound in the same year.

(+ 12%).<sup>11</sup> It is not clear why we get 12% for the first 1,800 of the 5,000 in the summary catalogue, that is the first 36% of manuscripts, whereas for the whole lot it is only an 8% inflation. Perhaps the counting was more accurate in the detailed catalogue or the remaining 3,200 manuscripts have proportionately fewer items with more than one dated part. It is not completely clear if the starred items in the indices represent two separate manuscripts or the same manuscript whose copying was discontinuous. In the final analysis I believe that there are at least 31,000 bound volumes in the world, but more probably 32,000 to 34,000 discrete surviving Armenian manuscripts.

### Dated Versus Undated Manuscripts

As already mentioned, Armenian scribes had the consistent habit of leaving a dated colophon usually at the end of the copy; in addition the scribal memorial usually mentioned the place of copying, the scribe and patron's name, and often that of the artist and binder. But many manuscripts have lost their original colophons through wear and tear or re-binding and thus are only dated by other elements, including dates of rulers, catholicoi, and other identifiable figures.

In an early article based on a similar, but more casual, survey of a large sample of more than 12,000 published manuscripts, I calculated that 59% of all Armenian manuscripts are precisely dated. For this

<sup>11</sup> Calculating the total of all 11,077 manuscripts in the Matenadaran collection (2007) with the number of individually dated items in the index, 12,009, the global augmentation is 9%.

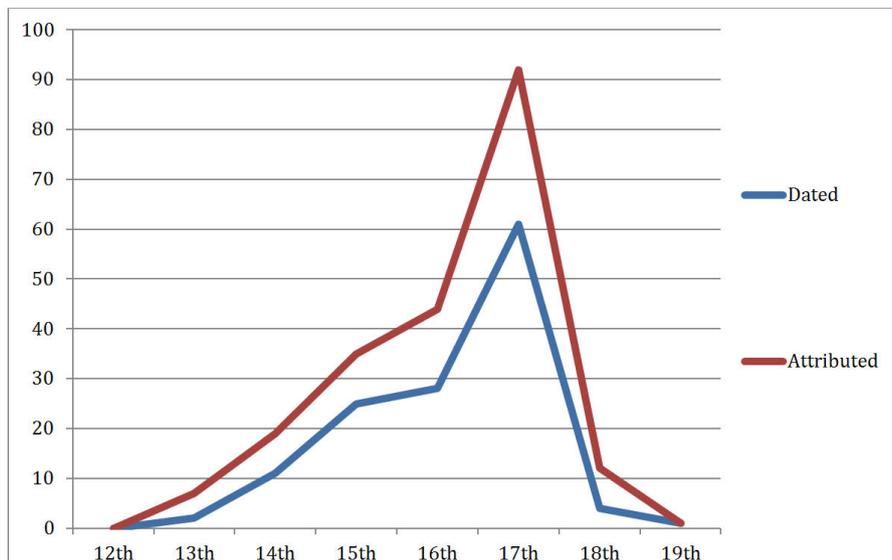


Table 3. Production graph by century of 264 Armenian Hymnal manuscripts, 132 of which are precisely dated.

note, a more careful counting of the large Matenadaran collection (11,077 items), the percentage is slightly less: for Cat. I (3,056 dated items, 5,418 total items), 56 %; Cat. II (3,176 dated items, 5,886 total), 54%; Cat. III (319 dated items, 705 total), 45%; Cats. 1-5 (1,800 numbers, 2,012 items), 54%; taken together 6,551 dated items of a grand total of 12,009 listings results in 55% of all manuscripts with precise dates. The discrepancy between the latter figure and the higher one of 59% in the earlier study using the data in the same indices probably is due to my using the number of manuscripts in the catalogues rather than the larger number of counted items in the indices, e.g., Cat. vol. I, manuscripts nos. 1–5,000, rather than the 5,418 individual items listed in the index and so forth.

### Manuscript Production by Century

In my earlier statistical study, a graph with three curves covering the years 1200 to 1800 was plotted by number of dated manuscripts for ten-year periods. The first curve was based on 6,030 dated items from the 10,408 manuscripts of the Matenadaran already published; the second on 7,973 dated manuscripts from a total of 13,944 from a variety of repositories; the third based on 16,744 manuscripts, which included the manuscripts from the large collection of the Armenian Patriarchate of Jerusalem, but only plotted for the years 1310 to 1620.<sup>12</sup> The first observation is that the curves resemble each other very closely even when the data sample was dramatically increased, suggesting that the Matenadaran, perhaps because of its size, affords an accurate reflection of the whole and can be used

<sup>12</sup> Kouymjian 1983 [1984]:433, fig. 1.

to project results of a theoretical database inclusive of all Armenian manuscripts. The data clearly show that the number of manuscripts copied steadily increased from century to century, except from the fifteen to the sixteenth century, when there was a net decline in production, especially in the first decades when production had practically come to a halt because of the enormous unrest caused by the Ottoman-Safavid wars.<sup>13</sup>

Examining the table listing the number of dated manuscripts and total number of manuscripts century by century, the decline in the sixteenth century was about 20%. But this was followed by the sudden and dramatic increase in manuscript production, already beginning in the second half of the sixteenth century, but continuously accelerating until the late seventeenth century: a nearly 400% increase, from 1,030 to 4,072 manuscripts. Though in absolute percentages it is less than the 560% increase from the twelfth to the thirteenth century (69 to 392 items in the combined column), the earlier figure has to be tempered when we consider reliable historic witnesses to the destruction of whole libraries with thousands of codices, especially during the Seljuk Turkic period.<sup>14</sup> The remarkable seventeenth-century growth reflects the furious activity of monastic scribes during a period when Armenians were prospering after the end of the wars between the Turks and the Persians and from wealth accumulation by

<sup>13</sup> The historical details of this period, including the devastating wars between the Safavids of Iran and the Ottoman Turks, which played out on the territory of Armenia, can be found in Kouymjian 1982 (revised ed. 2007; see also expanded version 1997).

<sup>14</sup> In the 1160s some 10,000 manuscripts were destroyed at the Monastery of Tatev alone; see Orbélian 1861, vol. 1, p. 191.



Fig. 1. Double page from the first Armenian printed Hymnal, Amsterdam, 1664, with on the left an engraving of the Annunciation by the Dutch artist Christoffel Van Sichem II (1577-1658), whose monogram initials cVs are seen just above the H in the lower left, and on the right an incipit page with traditional decorations used in Armenian manuscript versions. Paris: Private Collection.

a greatly expanded and dynamic merchant middle-class.<sup>15</sup> The trend was already graphically shown in an earlier article<sup>16</sup> and its conclusions help inform a discussion of the rise of the new class in a position of dominance as early as the late sixteenth and early seventeenth centuries.<sup>17</sup>

The data also very clearly show that a large majority of Armenian manuscripts which have come down to us date after 1600: 67 % after that date from the large sampling, 78% from the same sampling (cat. III), and 66% from the manuscripts included in the first five volumes of the detailed catalogue. And though there is a roughly 35% decrease in manuscript production in the eighteenth century, the absolute number of surviving eighteenth centuries codices is more than the combined quantity from both the fifteenth and sixteenth centuries. The actual decline in the hand writing or copying of manuscripts is statistically quite clear: the third-quarter of the seventeenth century. Yet again, nearly 10% of surviving

Armenian manuscripts were written or copied in the nineteenth century.<sup>18</sup>

### Printing and Manuscript Production

Even though the first Armenian printed book dates to 1512, the old technology continued to grow until 1675 and was an active endeavor until the mid-nineteenth century, even though by 1800 some 100 different titles in over a thousand editions had been printed in Armenian.<sup>19</sup> I have commented on this phenomenon more than once. For more than three centuries the two technologies, printing and scribal copying of manuscripts, worked in a close, symbiotic relationship, one that has not been adequately studied. It is certainly true that a large number of eighteenth and nineteenth Armenian manuscripts were not copied from earlier exemplars, but simply are the original composition of an author (memoir, account book, dictionary, translation), a unique item that perhaps should have a special place in the sta-

<sup>15</sup> To the already considerable bibliography on Armenian merchants and trade in the seventeenth and later centuries, notice should be taken of the just published, Aslanian 2011.

<sup>16</sup> Kouymjian 1983 [1984].

<sup>17</sup> Kouymjian 1994.

<sup>18</sup> It should be remembered that medieval sources speak of the destruction of whole libraries numbering more than 20,000 manuscripts, and that during the massacres of 1894-96 and the Genocide of 1915-23, thousands more were destroyed, stolen, or lost.

<sup>19</sup> Anasyan 1963.



Fig. 2. Left, engraving of the Tree of Jesse; right, incipit, printed Hymnal, Constantinople, 1743. Erevan: National Library.

tistical examination of the history of the last centuries of manuscript production.

Armenian printing was wide spread and dynamic, an entirely diaspora-based activity from the first books published in Venice in 1512 to the first press established in the historic homeland in Holy Etchmiadzin in 1772. During these 260 years Armenian printers were established in more than twenty localities including Paris, Rome, Constantinople, Berlin, Lvov, Marseille, New Julfa-Isfahan, Amsterdam, Padua, Leghorn, London, Leipzig, Vienna, and Madras. Yet, unlike the experience in European printing, which rapidly replaced the work of copyist, scribes continued their activities, to be sure often in the context of remote monasteries, well into the nineteenth century. One explanation for this is that the cheap, in some cases free, labour of the monastic scribe was more economical than the often expensive printed volumes.

Available data have not been sufficiently studied yet. At least for one category of a liturgical text, the Armenian Hymnal (*Šaraknoc’* or *Tropologion*, indispensable for performing the daily and hourly offices), a preliminary survey showed that the hand copying of text dropped dramatically (nearly 700%) from the end of the seventeenth to the eighteenth century

(Table 3).<sup>20</sup> The first Amsterdam printed Hymnal of 1664 (fig. 1) was followed quickly by more printings up to the total of twenty-one editions by 1794 (figs. 2-3) – nine more in Amsterdam and thirteen in Constantinople. The most copied Armenian manuscript text, the four Gospels, reflects a similar, yet somewhat different, history. Though the first Gospel book as well as complete Bibles and New Testaments were printed in equally large numbers, the noticeable decline in copying of the Gospels seems to have only occurred half a century later, in the early eighteenth century.

The intent of this short article, though proclaiming to treat codicology, was to show how data mined from published manuscript catalogues and other sources abundantly available online for the history of early Armenian printing<sup>21</sup> can be used statistically to es-

<sup>20</sup> The following results from an as yet unpublished sampling of 132 precisely dated Hymnals mostly from the Mekhitarist Fathers’ collection in Venice, of the thirteenth to the nineteenth century, are revealing: thirteenth century (2), fourteenth (11), fifteenth (25), sixteenth (28), seventeenth (61), eighteenth (4), nineteenth (1). The numbers are even more dramatic because of the sixty-one Hymnals of the seventeenth century, more than twice that of the previous century, fifty-four are dated to before the first printing and only seven after.

<sup>21</sup> The Meghapart Project, named after the mysterious first Armenian printer of Venice, Yakob Meghapart (the Sinner), can be consulted at: <http://greenstone.flib.sci.am/gsdl/cgi-bin/library.cgi?site=localhost&a=p&p=about&c=armenian&l=en&w=utf-8>.

establish a history of Armenian manuscript production and observe a number of phenomena related to the long transitional period from the handmade book to the mechanically produced one.

### Quoted bibliography

Anasyan, Hakob (general ed.), *Hay hnatip grk'i matenaghtakan c'uc'ak. 1512-1800* ('Bibliographic List of Early Armenian Printed Books. 1512-1800'), Erevan, 1963.

Aslanian, Sebouh David, *From the Indian Ocean to the Mediterranean. The Global Trade Networks of Armenian Merchants from New Julfa*, Berkeley, New York – London: University of California Press, 2011.

Coulie, Bernard, *Répertoire des bibliothèques et des catalogues de manuscrits arméniens*, Turnhout: Brepols, 1992, with supplements: (I) *Le Muséon*, 108/1-2, 1995, pp. 115–30, (II), *Le Muséon*, 113/1-2, 2000, pp. 149–76, (III), *Le Muséon*, 117/3-4, 2004, pp. 473–96.

Der Nersessian, Sirarpie, *The Chester Beatty Library. A Catalogue of the Armenian Manuscripts*, Dublin: Hodges, 1958.

Dournovo, Lydia, *Armjanskaja nabojka*, Moscow: Gosudarstvennoe izdatelstvo izobrazitel'nogo iskusstva, 1953.

Eganyan, Ónnig – Andranik Zeyt'unyan – P'aylak Ant'abyan, et al, *Mayr c'uc'ak hayerén jeragrac'Maştoc'i anuan Matenadarani* ('Master Catalogue of the Armenian Manuscripts of the Matenadaran Library Named after Maštoc'), 5 vols., nos. 1-1,800, Erevan: Armenian Academy of Sciences (vol. 1) – Nairi (vols. 2-5), 1984–2009.

Eganyan, Ónnig – Andranik Zeyt'unyan – P'aylak Ant'abyan, *C'uc'ak hayerén jeragrac'Maştoc'i anuan Matenadarani* ('Catalogue of Manuscripts of the Matenadaran Library Named after Maštoc'), 2 vols., Erevan: Armenian Academy of Sciences, 1965, 1970.

Kouymjian, Dickran, "Dated Armenian Manuscripts as a Statistical Tool for Armenian History", in: *Medieval Armenian Culture*, ed. by Thomas J. Samuelian and Michael E. Stone, Chico, CA: Scholars Press, 1983 [1984], pp. 427–28.

Kouymjian, Dickran, "From Disintegration to Reintegration: Armenians at the Start of the Modern Era, XVIth-XVIIth Centuries", *Revue du monde arménien* 1, 1994, pp. 9–18.

Kouymjian, Dickran, "From Manuscript to Printed Book: Armenian Bookbinding from the Sixteenth to the Nineteenth Century", in: *History of Printing and Publishing in the Languages and Countries of the Middle East*, ed. by Philip Sadgrove, Oxford: Oxford University Press, 2008 (= *Journal of Semitic Studies*, Supplement 24), pp. 13–21.

Kouymjian, Dickran, "Sous le joug des Turcomans et des Turcs ottomans (XVe-XVIe siècles)", in: *Histoire des Arméniens*, ed. by Gérard Dédéyan, Toulouse: Privat, 1982, pp. 341-376 (revised ed.: 2007, pp. 377–411).

Kouymjian, Dickran, "Armenia from the Fall of the Cilician Kingdom (1375) to the Forced Emigration under Shah Abbas (1604)", in: *The Armenian People from Ancient to Modern Times*, ed. by Richard Hovannisian, New York: St. Martin Press, 1997, vol. 2, pp. 1–50.

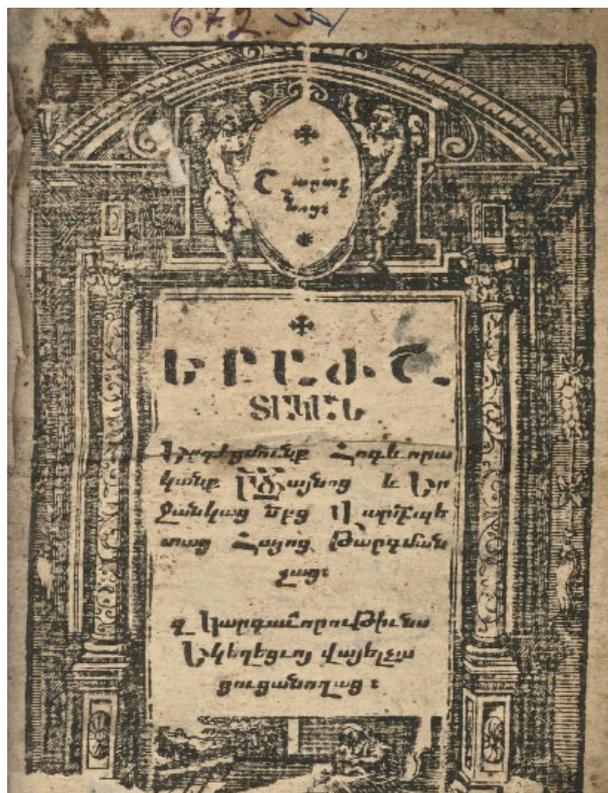


Fig. 3. Titlepage, printed Hymnal, Constantinople, 1768. Erevan: National Library.

Kouymjian, Dickran, review of Coulie 1995, *Journal of the Society for Armenian Studies*, 6, 1992–93, pp. 255–58.

Kouymjian, Dickran, "History of Armenian Paleography", in: *Album of Armenian Paleography*, ed. by Michael E. Stone, Dickran Kouymjian, Henning Lehmann, Aarhus: Aarhus University Press, 2002 (= Armenian ed.: *Haykakan hnagrut'ean albom*, Erevan: Tigran Mec, 2006), pp. 5–75.

Malkhasian, Armen, *C'uc'ak jeragrac' Maštoc'i anuan Matenadarani* ('Catalogue of Manuscripts of the Matenadaran Named after Maštoc'), vol. 3, Erevan: Erevan State University Press, 2007.

Merian, Sylvie, *The Structure of Armenian Bookbinding and its Relation to Near Eastern Bookmaking Traditions*, Ph.D. dissertation, Columbia University, 1993.

Orbélian, Step'annos, *Histoire de la Siounie*, tr. by Marie-Félicité Brosset, St. Petersburg: Académie impériale des sciences, 1861.

Orna, Mary Virginia "Pigment Analysis", in: *Treasures in Heaven, Armenian Illuminated Manuscripts*, ed. by Thomas F. Mathews and Roger S. Wieck, NY: Pierpont Morgan Library, 1994, pp. 135–42.

Sanjian, Avedis, *A Catalogue of Medieval Armenian Manuscripts in the United States*, Berkeley, CA – Los Angeles, CA – London: University of California Press, 1976.

Tarayan, Zemfira Rubenovna, *Nabojka v Armenii*, Erevan: Armenian Academy of Sciences, 1978.

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## The Four Gospel Book of Däbrä Ma'šo and its Marginal Notes.

### Part 1: Note on the Commemoration of Patriarch 'Astona

A preliminary assessment of the manuscript collection of Däbrä Ma'šo Qəddus Yoḥannēs Məṭmaq, a lesser known historical site in East Təgray (Gulo Mākāda) recorded in May 2010 by the team of the project Ethio-SPaRe,<sup>1</sup> appeared in the first issue of the *COMSt Newsletter*.<sup>2</sup> The manuscripts of the collection have been studied in order to be catalogued, and some of them have revealed previously unknown facts of Ethiopian intellectual and religious history.

#### Manuscript MY-008: an introduction

The “Golden Gospel” of of Däbrä Ma'šo (project call number MY-008) is one of the main items of the collection but also one of the most interesting books that the project team has recorded so far. It includes the standard traditional Introduction (with the Eusebian canons, letter of Eusebius to Carpianus and the “Synopsis of Classes”), the Four Gospels (Matthew, Mark, Luke, and John; each preceded by a list of “tituli” and concluded by a postscript), and up to eleven additional notes. The manuscript can be dated to the late fourteenth–early fifteenth century (see below). The dating may be further narrowed down to the time of King Dawit II (r. 1379/80-1413) on the grounds of some internal evidence provided by other manuscripts of the collection.<sup>3</sup>

The manuscript is in relatively good condition; it is complete and represents a valuable addition to the (not very large) corpus of the fourteenth–fifteenth

century Four Gospel manuscripts known so far.<sup>4</sup>

Its main value for Ethiopian studies lies, however, in the many documentary notes added on blank pages and margins. The earliest seem to go back to as early as the fifteenth century and are thus of great use for the reconstruction of local history.



Fig. 1. MY-008, upper board.



Fig. 2. MY-008, lower board.



Fig. 3. Inner face of the upper board: pastedown, leather turn-ins.



Fig. 4. Sewing.

<sup>1</sup> The project *Ethio-SPaRe: Cultural Heritage of Christian Ethiopia, Salvation, Preservation, and Research* is funded by the European Research Council within the 7<sup>th</sup> EU Framework Programme IDEAS; <http://www1.uni-hamburg.de/ethiostudies/ETHIOSPARE>.

<sup>2</sup> Nosnitsin 2011.

<sup>3</sup> *ibidem* p. 26.

<sup>4</sup> Zuurmond 1989, part I, 240, 242, and also a few of those manuscripts listed on pp. 251-55; part II, 58-68, most probably manuscripts nos. 13, 14, 15, 16, 31, 32, 33, 34 (with a few more of those broadly dated back to the 15<sup>th</sup> cent. possibly coming in question). So far, the researchers have mostly focused on the text-critical studies of the Gospels, or artistic and decorative aspects of illuminated Gospel books (like in the case of the deluxe “Gospel book of Zir Ganela”, *ibid.*, no. 31; or Tānāsee 59 = Däbrä Märyām 1, *ibid.*, no. 13, and Tānāsee 1 = Kebrān 1, *ibid.*, no. 33), or historical aspects (the attention was paid mostly to marginal notes, like in the case of ms. National Archives and Library of Ethiopia no. 28, Zuurmond no. 16). Cp. similar placement of the title and the execution of the incipit page decorations in a few mss. dating approximately to the same period: St. Petersburg National Library, Dorn 612 (Vasilieva 2007:32, fig. 8).

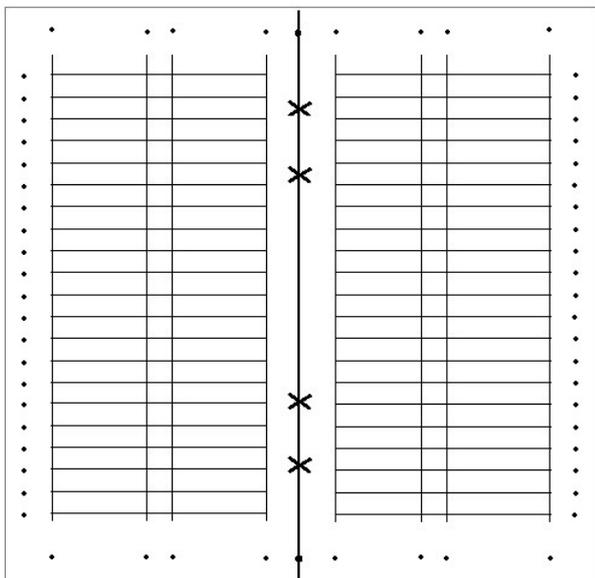


Fig. 5. Ruling and pricking of the main text.

### Codicological features

The manuscript is a codex measuring 20.5 x 30 cm. It is a single production unit, consisting of 144 folia assembled in 19 quires, mostly quaternions. It is complete and in relatively good condition, and its binding is to a great part original. The upper board is sound; the crack in the lower board (fig. 2) has been repaired with cords. Turn-ins on the inner face of the boards<sup>5</sup> reveal that they were once covered with leather (fig. 3: small holes in the overlapping corners are suggestive of former turn-in stitches). The endleaf quire has only been preserved at the front, under the upper board. It appears to be composed of two loose single leaves which might have been originally conjoint. In fact, it used to be made up of two bifolia; as to the second one, its anterior leaf was used as a pastedown (fig. 3),<sup>6</sup> and its severed posterior counterpart was misplaced.

The stitch-link sewing with “Z-type” thread of apparently animal origin (looking tight and shiny) was done on two pairs of sewing stations, in the traditional Ethiopian way. At the first exam, threads were broken close to the joints of both boards, and the first and last text block quires were loose (fig. 4).<sup>7</sup> Remnants of what could have originally been sewing of end-

<sup>5</sup> Of the “overlapping” type (cp. Szirmai 2009:231, fig. 9.38f).

<sup>6</sup> A treatment of endleaves similar to that described by Szirmai for several traditions (2009:30, fig. 2.10a; 118, fig. 7.18a; 147, fig. 8.4b). The practice has not yet been reported for Ethiopia, but I have observed it on a small number of older manuscripts recorded and investigated by the project team.

<sup>7</sup> The type of damage shows a typical and frequent problem of the Ethiopian codices. In many cases threads get overstrained and subsequently break at the edges of the boards near the holes where they are anchored.

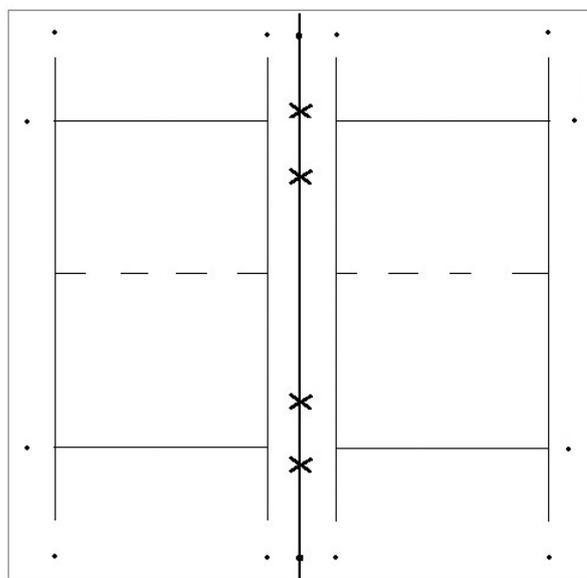


Fig. 6. Ruling and pricking of the Eusebian Canons.

bands, solid threads of animal origin, were visible on the end and head edges of the spine. The damage has been repaired in the course of the project conservation programme by Nicolas Sarris and Marco Di Bella, who also restored the original order of leaves by reinserting the misplaced folia. F. 11 of the pre-restoration sequence thus became f. 3α in the first endleaf quire; f. 13 became f. 20α.<sup>8</sup>

The layout is assisted by pricking and ruling. The prick holes are angular; the line of ruling pricks on one side of a bifolium indeed looks like “mirror-reflection” of the pricks on another side. The lines of ruling pricks are not quite straight but slightly zigzagging<sup>9</sup> and sometimes showing other irregularities.<sup>10</sup> The Gospels as well as the “Synopsis of Classes” (ff. 8va-9rb) are written in two columns, using the text area of 17 x 23.5 cm.<sup>11</sup> The ruling pattern is, in

<sup>8</sup> The quire structure can be summarised as follows (s.l. standing for “single leaf/leaves”): A(4/ff. 0r[=pastedown, not foliated], 1, 2, 3αv[=f. 11v]) – I(8/ff. 3r-10v) – II(8/ff. 12r, 14, 15, 16, 17, 18, 19, 20αv[=f. 13v]) – III(8/ff. 20r-27v) – IV(8/ff. 28r-35v) – V(8; s.l.3, stub after 6; 6, stub after 3/ff. 36r-43v) – VI(8/ff. 44r-51v) – VII(8; s.l.3, stub after 6; 6, stub after 3/ff. 52r-59v) – VIII(8/ff. 60r-67v) – IX(8; s.l.3, stub after 5; 6, stub after 2/ff. 68r-75v) – X(8/ff. 76r-83v) – XI(8/ff. 84r-91v) – XII(8; s.l.3, stub after 6; 6, stub after 3/ff. 92r-99v) – XIII(8/ff. 100r-107v) – XIV(8/ff. 108r-115v) – XV(8/ff. 116r-123v) – XVI(8; s.l.3, stub after 6; 6, stub after 3/ff. 124r-131v) – XVII(8; s.l.3, stub after 5; 6, stub after 2/ff. 132r-139v) – XVIII(5; s.l.1, no stub/ff. 140r-144v).

<sup>9</sup> E-type, according to the system of Jones (see Jones 1946:46, pl. II).

<sup>10</sup> In a few cases, the prick line is slightly sloping or goes astray towards the edge of the folium (these irregularities are mirrored on the respective counterpart folium).

<sup>11</sup> The margins of a recto folium are 4 cm at top and bottom, 1.5 cm left and 3.5 cm right; the intercolumn space is 1.5 cm. There are ca. 32 lines per page, with ca. 12-14 characters per line.



Fig. 7. Eusebian Canons, ff. 3v-4r.

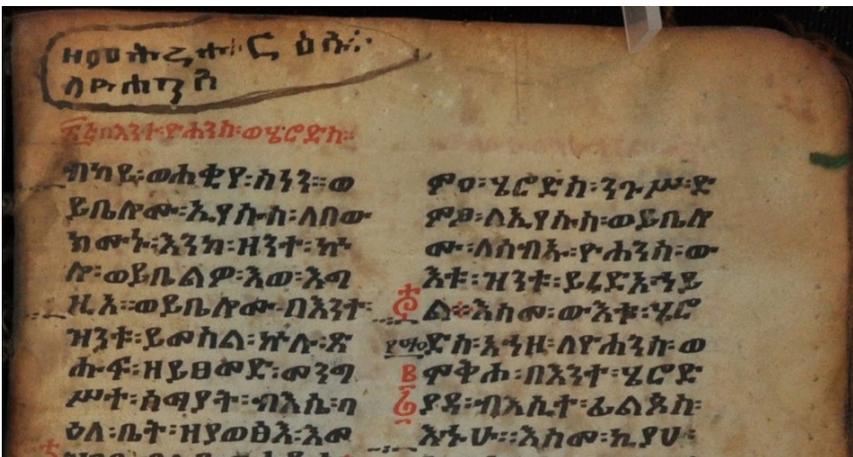


Fig. 8. Navigation devices on f. 28r (for the feast of John the Baptist, 2 Mäskäräm).

Muzerelle’s system, 1A-1A-1A1A/0-0/0-0/C (fig. 5).<sup>12</sup> The Eusebian Canon Tables (ff. 3v-6v) are executed in a “grid”. The ruling pattern here is a simple frame of only four lines, for which only six pricks per folium were necessary (fig. 6). However, it was obviously not enough for drawing the grid, and its lines are not straight. One wonders if black dots on the first two folia to the left of the grid were meant to provide an additional support for the scribe (fig. 7). The Letter of Eusebius to Carpianus (ff. 7r-8r) is written in one column. The ruling pattern is the same as that of the two-column regular text folia but it was not well adopted for writing in one column, and the lines are not properly justified on the right. Both the upper and the bottom text lines are invariably written above the respective ruling lines. Initially, only the “Tituli” – written in red mostly in the upper, sometimes in the bottom margins – provided some navigation support for the user. Later, notes

<sup>12</sup> Muzerelle 1999.

were added by a crude hand, in black, in the upper margins of some folia (mostly encircled by black lines) referring to the church feasts and thus facilitating search of relevant text portions. Still later, threads were inserted in some folia for the same purpose. Some folia accommodate all the navigation devices (fig. 8).

The handwriting is characteristic of the late fourteenth–early fifteenth century. The hand is careful and well trained. The letters (3–5 mm tall) are sloping to the right, slightly irregular, rounded, with relatively weak shading. The script looks “dense” because the vertical elements of the letters are comparatively thick. Among a few typically ancient features, the following can be mentioned: Ethiopic number 6 (፩) looks like “compressed” 7 (፪); numbers 1 and 4 have exactly the same shape but are oriented in the opposite ways (the first “upwards” and the second “downwards”);

some of the numbers have no “circles” (though the numbers of the “Tituli” in the margins have them); the loops of ሙ are set closely to each other, with no space in-between; the sign of the 7<sup>th</sup> order for ለ (ሎ) is attached to the limb of the letter without any connecting line, very close to the top.

Rubrication is executed carefully and in full extent, by the same scribe who wrote the main text. In the incipit folia of the Gospels, the rubricated titles are inserted between two chains of lines and red and black dots, with modest ornamentation on top (crosses, coronis). Four lines of the incipit are rubricated, alternating with black lines. Other rubricated elements are the numbers in the lists of the “Tituli”; numbers and “Tituli” written in the upper and sometimes in the bottom margins; elements of the punctuation signs; numbers referring to the numbers of the Canon Tables;<sup>13</sup> Chi-Ro, *crux ansata* and *coronis* signs.

<sup>13</sup> Under the numbers referring to the respective Ammonian sections (always written in black), on the left side from the text columns.



(F. 3cra[=11ra]) በስሙ ሥሉስ፡ ቅዱስ፡ አሐዱ፡ እግዚአብሔር፡ ተጽሕፈ፡ ተዝካረ፡ ዕረፍቱ፡ ለአባ<sup>19</sup>፡ አስቶና፡ ሊቀ፡ ጳጳሳት፡ ዘሮሜ፡ ሃገር፡ ወምስለ፡ ኩሎሙ፡ ቅዱሳን፡ እለ፡ አስመርዖ፡ ለእግዚአብሔር፡ በሰነ፡ ትዕግስቶሙ፡ ወፈጸሙ፡ ስምዖሙ፡ በሰናይ፡ በደብረ፡ ማዕጸ፡ በእንተ፡ እግዚእነ፡ እየሱስ፡ ክርስቶስ፡ ወደ፡ በውግረተ፡ እብን፡ ወደ፡ እለ፡ ሐመይዎሙ፡ ወወሰርዎሙ፡ ወቀተልዎሙ፡ በአፈ፡ መዋባሕት፡ ወደ፡ እለ፡ ረገዝዎሙ፡ በኳናት፡ እግዚአብሔር፡ አምላክ፡ ስቡሕ፡ በኩሎ፡ ምድር፡ ወበኩሎ፡ ዓለም፡ ነዋኪ፡ ርእዩ፡ አመሀይምና፡ ክርስቶስ፡ ጾታ፡ ነገር፡ በእንተ፡ ሰማዕቱ፡ ለእግዚእነ፡ ኢየሱስ፡ ክርስቶስ፡ ማኅበረ፡ ቅዱሳን፡ ወተጽሐፈ፡ በመዋዕለ፡ ማቴዎስ፡ ወንጌላዊ፡ አመ፯ {መስቀለ፡ ክርስቶስ}፡ ለወርሐ፡ መጋቢት፡ ወወሀበ፡ ስዩም፡ እንዳሉ፡ ለበደብረ፡ ማዕጸ፡ ወስመ፡ ካህናቱሳ፡ ዘአማኑኤል፡ ወወሀበ፡ ለተዝካሮሙ፡ እምወስተ፡ ሕዳድ፡ እንታላም፡ ወጀገበታ፡ ለአባ፡ አስቶና፡ ሊቀ፡ ጳጳሳት፡ ዘሮ (f. 3arb[=11rb]) ሜ፡ ወዕረፍቱሳ፡ አመጽ ወጀለወርሐ፡ ጥር፡ {በአስተርእዮ፡ ማርያም} ለአባ፡ አስቶና፡ ወተዝካረ፡ ዕረፍቶሙ፡ ለማኅበረ፡ ቅዱሳን፡ አመጽ ለወርሐ፡ ታሕሳስ፡ በኤልያስ፡ ኮሬባዊ፡ ነቢይ፡ ፳፻ ወ፴ወ፰፡ ማኅበረ፡ ቅዱሳን፡ እለ፡ ቀተልዎሙ፡ አረማዊያን፡ እለ፡ አልሶሙ፡ ሀይማኖት፡ ወወሀበ፡ በእንተ፡ አብ፡ ወወልድ፡ ወመንፈስ፡ ቅዱስ፡ ወበእንተ፡ ተዝካረ፡ ዕረፍታ፡ ለእግዝእትነ፡ ማርያም፡ ወላዲተ፡ አምላክ፡ ወበእንተ፡ ጸሎቶሙ፡ ለአባዊነ፡ ቅዱሳን፡ አብርሃም፡ ይስሐቅ፡ ወያዕቆብ፡ ወበእንተ፡ ጸሎቶሙ፡ ለሚካኤል፡ ወገብርኤል፡ ወበእንተ፡ ጸሎቶሙ፡ ለነቢያት፡ ወሐዋርያት፡ በእንተ፡ ጸሎቱ፡ መፍቀሬ፡ እግዚአብሔር፡ ለንጉሥነ፡ ዳዊት፡ ወበእንተ፡ ጸሎ[ታ]፡ ለመፍቀሪተ፡ ነዳይ፡ ወሰአሊተ፡ ምሕረት፡ እግዚአ[*sic*]፡ ክብራ፡ ንግሥት፡ እሙ፡ ለዘርአ፡ ያዕቆብ፡ ንጉስ፡ ወወሀበ፡ በእንተ፡ መንግሥቱ፡ ለንጉሥነ፡ ዘርአ፡ ያዕቆብ፡ ከመ፡ ይኩኖ፡ (f. 3ava[=11va]) መድኅኒተ፡ ነፍሱ፡ ወሊተኒ፡ ለኃዋኢ[*sic*]፡ ዘአማኑኤል፡ ከመ፡ እርከብ፡ ዕሴተ፡ ተስፋ፡ ዘአብ፡ ወወልድ፡ ወመንፈስ፡ ቅዱስ፡ ወበእንተ፡ ጸሎታ፡ ለማርያም፡ ወላዲተ፡ አምላክ፡ ወበእንተ፡ ጸሎቱ፡ ለዮሐንስ፡ መጥምቅ፡ በእንተ፡ ጸሎቱ፡ ለጊዮርጊስ፡ መስተጋድል፡ ገባሬ፡ ተአምር፡ ወበእንተ፡ ጸሎቶሙ፡ ለ፫፻፲ ወ፰ርቱዓነ፡ ሃይማኖት፡ ወበእንተ፡ ጸሎቶሙ፡ ለ፬እንስሳ፡ ጸዋርያነ፡ መንበሩ፡ ለእግዚአብሔር፡ ወበእንተ፡ ጸሎቶሙ፡ ለ፳ወ፬፡ ካህናተ፡ ሰማይ፡ ወእቤሎ፡ አንሳ፡ ዘአማኑኤል፡ ለዓቃቤ፡ ሰዓት፡ ኢየሱስ፡ ዘደብረ፡ ማዕጸ፡ ወዲያቆናትሂ፡ ፊልጶስ፡ ወፍ[ሬ]፡ ቅዱስ፡

(F. 3cra[=11ra]) In the name of the triple, holy, one God. (Herewith) the commemoration of the repose of 'abba 'Astona the Patriarch of the land of Rome is written, together with all saints who pleased God with the beauty of their patience. And they completed their martyrdom for the sake of Our Lord Jesus Christ, in a good way, on Däbrä Ma'šo. There were some who (did it) through (having been executed with) stoning, and some whom they tortured, sawed, and killed with the mouth of the axe, and there were some whom they pierced with spears. God is glorious on the whole earth and in all time.<sup>20</sup> Behold, look, oh the faithful of Jesus Christ, the manner of the word about the martyr of Jesus Christ Our Lord, the community of the saints. And it was written in the time of Matthew the Evangelist, on *Mäggabit* 10 [the feast of] the Cross of Christ.<sup>21</sup> And *səyyum* 'Endalu gave it to Däbrä Ma'šo, while his priestly name was Zä-'Amanu'el. And he allotted for their commemoration from the *ḥədad*<sup>22</sup> (one) 'əntalam<sup>23</sup> and two *gäbätas*<sup>24</sup> for 'abba 'Astona the Patriarch of (f. 3arb[=11rb]) Rome. And the repose of 'abba 'Astona is on the 21<sup>st</sup> of the month of *Tərr* {on the Dormition of Mary}, and the commemoration of the repose of the community of the saints is on the 1<sup>st</sup> of *Tahsas* (on the feast of) Elijah of Horeb, the Prophet. (It was) 638 (from) the community of the saints whom the pagans killed, those who have no faith. And he gave for the sake of the Father, the Son and the Holy Spirit, and for the sake of the commemoration of the Dormition of Our Lady Mary, the mother of God, and for the sake of the prayers of our saintly fathers Abraham, Isaac and Jacob, and for the sake of the prayer of Michael and Gabriel, and for the sake of the Prophets and Apostles, and for the sake of the prayer of our God-loving King Dawit<sup>25</sup>, and for the sake of the prayer of the intercessor for mercy who loves the poor, Queen 'Əgzi'a Kəbra<sup>26</sup>, the mother of King Zär'a Ya'qob<sup>27</sup>. And he gave for the sake of the kingdom of our King Zär'a Ya'qob so that it might be for him (f. 3ava[=11va]) the salvation of his soul; and for me, sinful Zä-'Amanu'el, so that I might find a reward of hope of the Father, and the Son, and the Holy Spirit. And for the sake of the prayer of Mary, mother of God, and for the sake of the prayer of John the Baptist, and for the sake of the prayer of George the combatant, the miracle-worker, and for the sake of the prayers of the 318 Orthodox, and for the sake of the prayer of the Four Heavenly Creatures, the carriers of the God's throne, and for the sake of the 24 Heavenly Priests. And I, Zä-'Amanu'el, said to 'aqabe sä'at 'lyosyas of Däbrä Ma'šo,<sup>28</sup> and the deacons Filpos, and Fəre Qəddus,

<sup>19</sup> The transcription of አ as opposed to ኣ, ሐ as opposed to ኣ may at times appear questionable and in some cases they are not easily distinguishable. It looks like the scribe did make a nearly consequent difference in some words: in most of the cases the words እግዚአብሔር or አባ are written with 'Alef in the fourth order, while the name አስቶና ('Astona) and some others are invariable written with 'Alef in the first order. No attempt was made to standardise the orthography (or correct a few grammatical imperfections of the documents); of course, in some cases the transcription may be dependent on the author's personal visual perception.

<sup>20</sup> Cp. Ps. 72:19.

<sup>21</sup> The feast of the Finding of the True Cross (*Mäsqa*).

<sup>22</sup> An early appearance of a complex term referring to a land possession and land use type (in the form absent in Gə'əz, apparently the same as *kudad* or *hudad* in Amharic, Kane 1990:32-33, 1456; cp. Gebre-Wold-Ingida Worq 1962:304, 305-6; more elucidating Berhanou Abbebe 1971:12; *ḥədad* in Təgrəñña, with clear definition in Kane 2000:286b).

<sup>23</sup> A traditional measurement unit, see Leslau 1987:33; EAE II, 318b.

<sup>24</sup> A traditional measurement unit, see Leslau 1987:179b; esp. in Amharic, see Kane 1990:1980b and Təgrəñña, Kane 2000:2299b ("measure for grain of about 20 kg.").

<sup>25</sup> King Dawit II, r. 1378/80-1413, the father of Zär'a Ya'qob.

<sup>26</sup> Queen 'Əgzi' Kəbra was indeed the mother of Zär'a Ya'qob (see EAE II, "'Əgzi' Kəbra", 247b).

<sup>27</sup> King Zär'a Ya'qob (r. 1434-68).

<sup>28</sup> As commonly known, the title 'aqabe sä'at was not bound only to Däbrä Ḥayq 'Əstifanos (cp. the documents of the "Golden Gospel" of Däbrä Libanos of Ham and the Liber Axumae, see Bausi 2007:4, 2009:109).

ቴዎድሮስ፡ [ወቅዱስ]፡ ካህናት፡ ዘደብረ፡ ማዕጸ፡ የሀብ  
 ሙ፡ ቃለ፡ ነጋሢ፡ ለካህናት፡ ለእመ፡ አብኩሩ፡ ዘንተ፡  
 ውጉዛነ፡ ይኩኑ፡ በአፈ፡ አብ፡ ወወልድ፡ ወመንፈስ፡ ቅዱስ፡  
 ወዘተዐደወ፡ ዘንተ፡ ቃላተ፡ እመሢ፡ ውሉድየ፡ ወአ  
 ው፡ አገማድየ፡ ወለእመ፡ ተሰይመ፡ ካ(f. 3avb[=11vb])ል  
 አ፡ ሰዩመ፡ ወለእመሢ፡ <...>ት፡ ወለእመሢ፡ <...> ወእመሢ፡  
 ጼዋ፡ ዘደብረ፡ ማዕጸ፡ ለእመ፡ አብኩሩ፡ [ቦ]ኑ፡ ቀንቃኒ፡  
 ለእመ፡ መከረ፡ [ሕ]ሱመ፡ በተዝካረ፡ ንጉሥ፡ ወጸድቃን፡  
 ውጉዘ፡ ለይኩን፡ በአፈ፡ አብ፡ ወወልድ፡ ወመንፈስ፡ ቅዱስ፡  
 በአፈ፡ እግዝእትነ፡ ማርያም፡ ወላዲተ፡ አምላክ፡ በአ  
 ፈ፡ ሚካኤል፡ ወገብርኤል፡ በአፈ፡ ነቢያት፡ ወሐዋርያት፡  
 በአፈ፡ ዮሐንስ፡ መጥምቅ፡ በአፈ፡ አብርሃም፡ ይስሓቅ፡  
 ወያዕቆብ፡ በአፈ፡ አባ፡ ሊባኖስ፡ መጣዕ፡ ገባሬ፡ ተአም  
 ር፡ በአፈ፡ ጸድቃን፡ ወሰማዕት፡ ውጉዘ፡ ወርጉመ፡ ለይ  
 ኩን፡ ወእሱረ፡ በማእሰር፡ ዘኢይትፈታሕ፡ በመንግሥተ፡  
 ሰማያት፡ እስከ፡ ትውልድ፡ ትውልድ፡ ። ወለእመ፡ በዝሐ፡  
 ይንሣእ፡ እንተላም፡ ወጀገበታ፡ እምጥፍአተ፡ ፍሬ፡ ምድር፡  
 ር፡ ያድኅን፡ እግዚአብሔር፡ እመኢኮነ፡ ዘእንበለ፡ እንተ  
 ላም፡ ወጀገበታ፡ ይንሥኡ፡ በታልኡ፡ ኢይክልኡ፡ ሰዩ  
 ም፡ ወቃለ፡ ነጋሢ ። ግዘተ፡ ይኩን፡ በርእሶሙ፡ ወአንት  
 ሙኒ፡ ካህናት፡ ወዲያቆናት፡ ወሕዝባዊያን፡ ወሙቁሓ  
 ን፡ ዝክሩኒ፡ በጸሎትክሙ፡ ለሐዋእ፡ (f. 3ra) ዘአማኑኤል፡  
 በእንተ፡ መንግሥቱ፡ ለዘርአ፡ ያዕቆብ፡ መፍቅሬ፡ እግዚ  
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 ን፡ ወአሜን ። ያድኅነን፡ እግዚአብሔር፡ እምሕጸተ፡ ማይ፡  
 ወእምዕለተ፡ እኪት፡ ለዓለመ፡ ዓለም፡ አሜን፡ ወአሜን ። ወ  
 ሊተኒ፡ ለጸሐፊሃ፡ ዮሐንስ፡ ወለዘ፡ አጽሐፎ፡ ወለዘ፡ ተርጉ  
 ሞ፡ ኅቡረ፡ ይመሐሮሙ፡ እግዚአብሔር፡ በእንተ፡ ጸሎ  
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Tewodros, [and the holy] priests of Däbrä Ma'šo, "Let the *qalä nägas*<sup>29</sup> give (that) to the priests. And if they suspend this they shall be excommunicated through the mouth of the Father, and the Son, and the Holy Spirit. The one who trespassed these words, be it my children, or my relatives, or another governor who might be appointed, be (f. 3avb[=11vb]) it <...>, be they <...>,<sup>30</sup> be it the *šewa*<sup>31</sup> of Däbrä Ma'šo, if they suspended (this order), or if there is a *qänqan*<sup>32</sup> and if he advised badly on account of the commemoration of the King and the righteous ones, he shall be excommunicated through the mouth of the Father, the Son and the Holy Spirit, through the mouth of Our Lady Mary, mother of God, through the mouth of Michael and Gabriel, through the mouth of the Prophets and Apostles, through the mouth of John the Baptist, through the mouth of Abraham, Isaac and Jacob, through the mouth of 'abba Libanos Mäta', the miracle-worker, through the mouth of the righteous ones and martyrs; be excommunicated and cursed and bound with the bondage that might not be unbound in the Kingdom of Heaven until the generations of the generations. If it is plentiful, it (Däbrä Ma'šo) might take (one) 'entälam and 2 gäbätas, God saves from the shortage of the fruits of the earth. If it is not, they might take except (one) 'entälam and 2 gäbätas,<sup>33</sup> the governor may not prohibit with his prohibition,<sup>34</sup> and neither the *qalä nägas*; anathema will be upon themselves". And you, priests and deacons, and lay people and prisoners,<sup>35</sup> remember in your prayer the sinful (f. 3ra) Zä' Amanu'el for the sake of the kingdom of the God-loving Zär'a Ya'qob. May God bless the fruits of the earth; for eternity; amen and amen. May God save us from the shortage of water and an evil day; for eternity; amen and amen. And as to me, scribe Yoḥannēs, and the one who caused it to be written, and the one who interprets (it), may God have mercy upon them, altogether, for the sake of the prayer of 'abba 'Astona, and for the sake of the prayer of the community of saints, the Apostle of Our Lord Jesus Christ, praise be to Him for eternity. Amen and amen. So be it, so be it.

<sup>29</sup> *Qal* should be understood here as an equivalent for 'af "mouth", thus *qalä nägasi* referring to a "speaker" and transmitter of the orders (of a lord, governor, or ecclesiastic hierarch, here, *nägas*, the title on which see EAE I, "Afä näguś", 113b-114a; III, "Nağāšī", 1109b-1110b; "Nəguś", 1162b-1166a).

<sup>30</sup> At two places, the writing is damaged and barely readable.

<sup>31</sup> Here, the word obviously refers to the medieval "military elite" of the Ethiopian Kingdom, settled and stationed, as commonly assumed, at the borders and in restive regions, especially in the pre-17<sup>th</sup> century period. In earlier times, the area of Däbrä Ma'šo might have been less secure than it is today (cp. additio 7 in the same manuscript).

<sup>32</sup> *Qänqani* is absent in Gə'əz; modern Təgrəñña does not provide satisfactory explanation either (cp. Kane 2000:991); but cp. Amharic *qänqañ*, meaning, among others, "investigator, inspector" (Kane 1990:785a).

<sup>33</sup> The difficult sentence, with apparent syntactical influence of a colloquial language (Amharic?), should possibly be understood, less literally, "If it (i.e. the harvest) is not (abundant), they (the priests of Däbrä Ma'šo) will take less than (one) 'entälam and two gäbätas (of grain)". *Zä' enbälä* here functions as preposition (Dillmann 1907:403-4, §166.23; for the conjunction cp. ibidem. 419, §170.4). *'Emmä 'ikonä* makes an opposition to *lä 'əmmä bāzha* ("if the harvest is redundant, plentiful ..., if not..."), both forms being followed by subjunctives. An abrupt change of the verb conjugation from 3<sup>rd</sup> sg. to 3<sup>rd</sup> pl. (*yənsa' – yənsə'u*) is difficult to explain, but the document was inconsistent also before, cp. the way Zä' Amanu'el is referred to, as 3<sup>rd</sup> sing. masc. in the beginning, then a sudden change happens, "And for me, sinful Zä' Amanu'el...", etc.

<sup>34</sup> The first letter of the Gə'əz word (በ)ታልኡ is blurred but it seems to read ታ. The word ታልኡ does not exist; however, it might be interpreted as *kalə'u* (\*bä-kalə'u > bā-talə'u, i.e. "with/through his prohibition"; cp. Leslau 1987:281b). It would be a case when the actual pronunciation during the reading of the document (that could have taken place, as the issue had to be announced to the people) influences the written form. Still, the rendering "with his prohibition" does not lead to a fully smooth translation. Further interpretations on the basis of the root meaning "make two, make another" cannot be ruled out (see ibidem. 282a, *bä-kalə'u* meaning "an-other time, the second time": "If it is not, the governor may not prohibit that they might take less than 'entälam and 2 gäbätas, another time").

<sup>35</sup> Probably, an explicit reference to detainees of Däbrä Ma'šo which was used as a place of exile and imprisonment at least in the 15<sup>th</sup> century, see Nosnitsin 2011:24 and n. 5 (to this end, a reference in another work of the Stephanite hagiography can be added, "A History of the First ጴጥያንዎስ Monks", see Getatchew Haile 2011, vol. 2, 31 [tr.]). Today, both the village and the site of the church are called Däbrä Ma'šo (Yoḥannēs). However, originally it was the name of the church only (to which the historical sources refer), the flat-top mountain bearing a different name. The church is extremely difficult to access; it stands on the tower-like rock, on the spot smaller than 1 km<sup>2</sup>. It can be reached only through one narrow pass and several stone stairways, and would be a place of detention *par excellence* (rather than a village on a mountaintop), with no escape. Beside the church there is a deserted structure, obviously the former house for community meetings. At some distance, there is a deep cavity in the basalt stone filled with water during the rainy season (could it be the "cell of Afḥarom" of the Vita of ጴጥያንዎስ, Getatchew Haile 2006, vol. 2, 60 [tr.]).

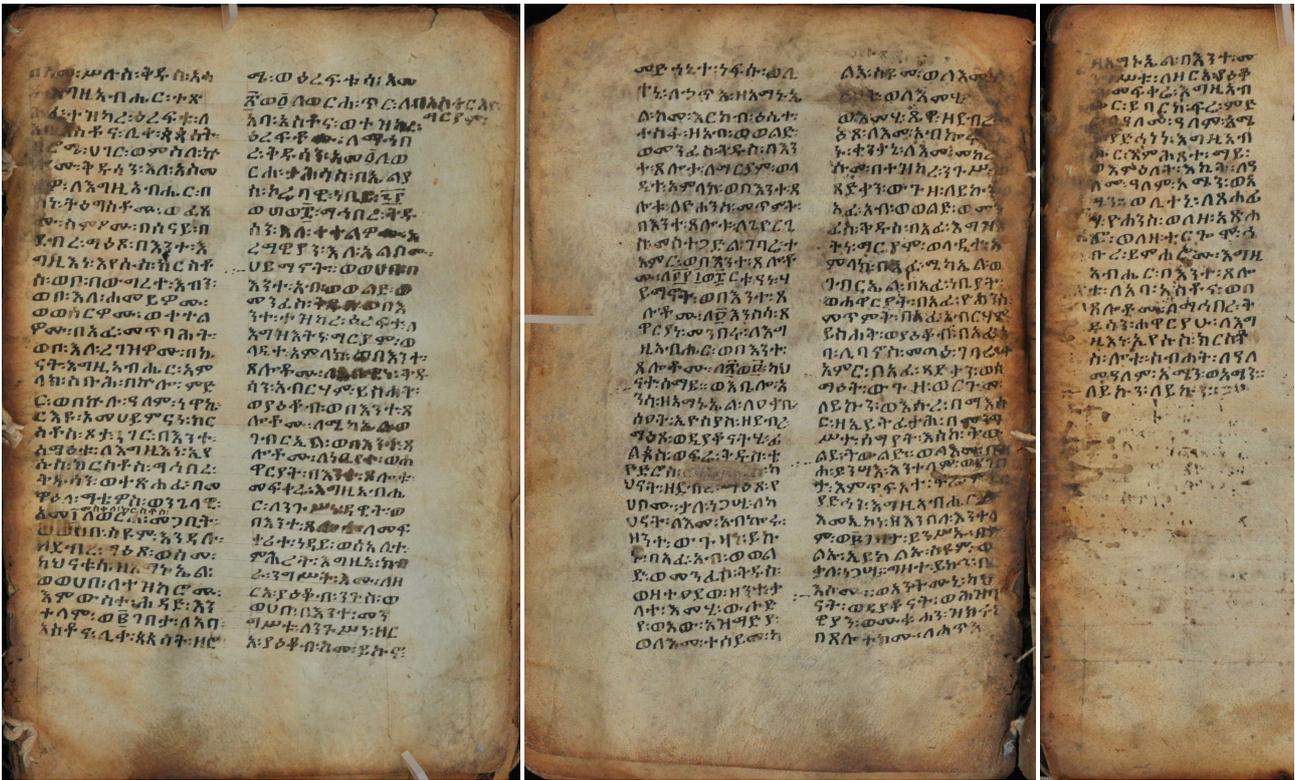


Fig. 9. MY-008, ff. 3ar, 3av, 3ra: Note on the commemoration of Patriarch 'Astona.

Starting from f. 3ava the document grows somewhat obscure. However, the main points are clear: during the time of King Zär'a Ya'qob (r. 1434-68), scribe Yoḥannēs wrote down an ordinance of the local governor 'Ḥndalu/ Zä' Amanu'el,<sup>36</sup> according to which Däbrä Ma'šo was supposed to receive a (substantial) amount of grain for two annual commemorations,<sup>37</sup> from the *ḥədad*-land. The document was apparently also announced to the clergy of Däbrä Ma'šo.

The most interesting is not the fact of allotting grain for that purpose, but the person to be commemorated. 'Abba 'Astona has so far been only known from one source, which is a homily on the Sabbath in the ancient homiliary from the monastery of Ṭana Qirqos, microfilmed in the late 1970s by the Ethiopian Manuscript Microfilm Library as EMM 8509 (ff. 162v-164r). The approximate broad dating

proposed for the manuscript by Sergew Hable Sel-lase was between the tenth/eleventh and the thirteenth century.<sup>38</sup> There, Patriarch 'Astona features as the author of the homily, styling himself in the same way as in the note in ms. MY-008;<sup>39</sup> the investigation of the homily's content goes beyond the frames of this study. The statement in the note that Patriarch 'Astona and his followers "were martyred on Däbrä Ma'šo by unspecified "pagans (*'arāmawiyān*) who have no faith", on different dates, 21 Ṭerr

<sup>38</sup> Sergew Hable-Selassie 1987-88:23. According to the information from the Hill Monastic Microfilm Library, the microfilm was not digitised due to its extremely poor condition. Today, it can only be viewed in the National Library and Archives Agency (Addis Abāba). The quality of the pictures is, indeed, very poor and the text is hardly readable, primarily because of the obviously deprecate condition of the manuscript. Half-destroyed already by the time of microfilming (1978?), it is possibly in even worse condition or lost today (not seen in December 1997 – January 1998 by a scholar visiting the site, see Bosc-Tiessé 2000:216-17). According to the "metadata sheet", the dimensions of the manuscript were 40.5 x 30.5 cm (?); the name of the donor is indicated, but unintelligible. As the author, "Rətu'a Haymanot" is mentioned. The manuscript remains little known; the fact that it was not used in the seminal work by Uhlig (1988) can be explained by the poor accessibility of the material. Pictures of five folia of the manuscript were printed in Ethiopia, in acceptable quality, in Habtāmāryam 'Asāffa 1993-94 A.D.:380-84.

<sup>39</sup> አኒ፡ ሊቀ፡ ጳጳሳት፡ አሰቶና፡ ዘሮሜ፡ ሃገር (EMML 8509, f. 162v).

and 1 *Taḥsas*, respectively,<sup>40</sup> is significant and surprising. It is remarkable that Ḍastona and his followers were commemorated in Däbrä Maḥšo long after their death, and that under King Zär'a Ya'qob the local ruler decided to support the commemoration by a special tribute and had a notice on that written. A couple of centuries had elapsed since the death of Ḍastona and his partisans, but the local tradition about them was still vivid.

What exactly is meant with the qualifier “ዘርጌ፡ ገገር”, ‘of the land (city?) of Rome’, added to the name of Ḍastona, is difficult to say for the moment and can be a subject of a special research.<sup>41</sup>

In any case, the document is an indigenous Ethiopian record providing a clear hint that in a remote period, possibly before the re-establishment of the Solomonic dynasty ca. 1270 and subsequent “revitalisation” of the relations with the Coptic church, hierarchs of another church were present in that part of the country. The document does not say explicitly whether Ḍastona and his followers had their seat in Däbrä Maḥšo. They apparently met violent death there, from some unspecified non-Christian intruders, and their memory was held in esteem by the local people.

### Quoted bibliography

Bausi, Alessandro, “Some Short Remarks on the Canon Tables in Ethiopic Manuscripts”, in: *Scritti in onore di Clelia Sarnelli Cerqua*, ed. by Carmela Baffioni, Napoli 2004 (= *Studi Magrebini* 26, 1998–2002), pp. 45–67.

Bausi, Alessandro, “Un indice del Liber Aksumae”, *Aethiopica: International Journal of Ethiopian and Eritrean Studies*, 9, 2006, pp. 102–46.

Bausi, Alessandro, “Un indice dell’Evangelo d’oro di Dabra Libānos (Šemēzānā, Akkala Guzāy, Eritrea)”, *ibidem*, 10, 2007, pp. 1–11.

Berhanou Abbebe, *Évolution de la propriété foncière au Choa (Éthiopie)...*, Paris: Imprimerie nationale, 1971 (Bibliothèque de l’école des langues orientales vivantes, 23).

Bosc-Tiessé, Claire, “L’histoire et l’art des églises du lac Tana”, *Annales d’Éthiopie*, 16, 2000, pp. 207–70.

Dillmann, August, *Ethiopic Grammar*, tr. by James A.

<sup>40</sup> Today, local people do not remember Ḍastona, and neither of the two commemorations is held. Neither of the commemorations appear in any edition of the Ethiopian Synaxarion (the library of Däbrä Maḥšo does not possess a Synaxarion copy of its own).

<sup>41</sup> The provenance of the name Ḍastona itself (Greek? Arabic?) is also unclear.

Crichton, ed. by Carl Bezold, 2<sup>nd</sup> ed., London: Williams & Norgate, 1907 (repr. Amsterdam: Philo Press, 1974).

EAE = Siegbert Uhlig et al. (eds.), *Encyclopaedia Aethiopica*. Vol. I: A-C, Vol. II: D-Ha, Vol. III: He-N, Vol. IV: O-W, Wiesbaden: Harrassowitz, 2003, 2005, 2007, 2010 (= EAE I–IV).

Gebre-Wold-Ingida Worq, “Ethiopia’s Traditional System of Land Tenure and Taxation”, *Ethiopia Observer*, 5/4, 1962, pp. 302–39.

Getatchew Haile (ed., tr.), *The Gə‘əz Acts of Abba Ḍstifanos of Gʷəndagʷənde*, Lovanii: Peeters, 2006 (Corpus Scriptorum Christianorum Orientalium, 619-620; Scriptorum Aethiopicum, 110–111).

Getatchew Haile, *A History of the First Estifanosite Monks*, Lovanii: Peeters, 2011 (Corpus Scriptorum Christianorum Orientalium, 635–636; Scriptorum Aethiopicum, 112–113).

Habtāmaryam Ḍasäffa, *Yä-Ḍityopya tarik ḥeyyaqewoçenna bahloçç*, Addis Abäba, 1986 E.C. (= 1993–94 A.D.).

Jones, Leslie Webber, “Pricking Manuscripts: the Instruments and their Significance”, *Speculum*, 21/4, October 1946, 389–403.

Kane, Thomas Leiper, *Amharic–English Dictionary*, 2 vols., Wiesbaden: Harrassowitz, 1990.

Kane, Thomas Leiper, *Tigrinya–English Dictionary*, 2 vols., Springfield, VA: Dunwoody Press, 2000.

Leslau, Wolf, *Comparative Dictionary of Ge‘ez (Classical Ethiopic): Ge‘ez–English / English–Ge‘ez with an Index of the Semitic Roots*, Wiesbaden: Harrassowitz, 1987.

Muzerelle, Denis, “Pour décrire les schémas de réglure: une méthode de notation symbolique”, *Quinio*, 1, 1999, pp. 123–170.

Nosnitsin, Denis, “The Manuscript Collection of Däbrä Maḥšo Qəddus Yoḥannēs (Təgray, Ethiopia): a First Assessment”, *Comparative Oriental Manuscript Studies Newsletter*, 1, January 2011, pp. 24–27.

Sergew Hable Sellassie, “An Early Ethiopian Manuscript EMM 8509 (Ethiopian Manuscript Microfilm Library)”, *Quaderni di studi etiopici* 8–9, 1987–88, pp. 5–27 [repr. in *Ostkirchliche Studien*, 40, 1991, pp. 64–80].

Szirmai, John A., *The Archaeology of Medieval Bookbinding*, Aldershot: Ashgate, 1999 (repr. 2009).

Uhlig, Siegbert, *Äthiopische Paläographie*, Stuttgart: Franz Steiner, 1988 (Äthiopistische Forschungen, 22).

Vasilyeva, Olga, “Christian Manuscripts of the East in the National Library of Russia”, *Manuscripta Orientalia*, 13/2, 2007, pp. 24–54.

Zuurmond, Rochus, *Novum Testamentum Aethiopicum: the Synoptic Gospels*, I: *General Introduction*, II: *Edition of the Gospel of Mark*, Stuttgart: Franz Steiner, 1989 (Äthiopistische Forschungen, 27).

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