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Ethiopian and Coptic Sewing Techniques in Comparison

Abstract: This article addresses the problem of Ethiopian sewing wrongly being referred to as 'Coptic'. Indeed, the technical jargon has solidified an outdated idea of similarity between Ethiopian and Coptic binding traditions. Therefore, to distinguish their respective fields of relevance, the article discusses the definitions of Coptic and Ethiopian bookbinding and evaluates the probable origins of the terminological misunderstanding. Although exploratory and open to reconsideration, the last section of the article compares Ethiopian and Coptic sewing techniques to identify their similarities and differences. Based on the comparison, the modern Ethiopian binding technique can be seen to differ from the ancient Coptic one; therefore, 'Coptic chain-stitch' can be considered a misleading term for the Ethiopian technique.

1 Introduction

In common understanding, the distinction between Coptic and Ethiopian bookbinding is blurred, and confusing terminology is used for the Ethiopian structures. As a simple web search for 'Ethiopian bookbinding' shows, the term 'Ethiopian' is often equated with the term 'Coptic', thus giving the impression that the two binding techniques are identical. Online tutorials describing how to construct a 'Coptic/Ethiopian binding' or 'Ethiopian (Coptic) binding' model are significant examples.[1] On the other hand, a search for 'Coptic bookbinding'

1 Among the first ten results of a search for 'Ethiopian bookbinding' – based on a Google search performed from Hamburg, Germany, on 30 August 2022 – a video tutorial and a post on a blog provide two fitting examples. The tutorial is titled *Coptic/Ethiopian Binding Part 1* and was uploaded to YouTube on 5 December 2019 (Part 2 has not yet appeared). In the video, the author shows 'how to make Coptic bookbinding', drilling holes for the attachment of the boards and the endbands in the upper and lower wooden boards. The tutorial shows the combination and re-elaboration of features of historical Ethiopian bookbinding (the board attachment) and historical Coptic bookbinding (the attachment of the endband). The result is a hybrid structure. See https://youtu.be/ZKtuBn8vfZU (accessed on 28 February 2023). As regards the post, it appeared on the *Work of the Hand* blog, which is meant to share some of the author's 'experiences during graduate school at the University of North Carolina at Chapel Hill and through the bookbinding program at the North

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returns images of either modern book structures or models of historical Ethiopian book structures.[2]

The misleading use of the terms stems from the technical jargon having assimilated an outdated idea of the similarity between Coptic and Ethiopian binding, which also persists to some extent in literature.[3] A survey of publications related to the description of Ethiopic manuscripts that have appeared in the last two decades,[4] online cataloguing projects, and digitisation initiatives with some

Bennet Street School in Boston, MA'. The post is titled 'Ethiopian/Coptic Bindings' and dated 29 September 2010, but it stimulated a discussion that was active until 25 July 2022. The author presents a model of a Coptic-style binding described as 'one of the oldest known forms of the codex'. However, the images show the model of a historical Ethiopian binding. See https://henryhebert.net/2010/09/29/ethiopiancoptic-bindings/ (accessed on 28 February 2023).

2 I find it symptomatic of this terminological confusion that the photograph used to describe a 'simple Coptic binding (model)' in Wikipedia represents a historical Ethiopian binding model. See https://en.wikipedia.org/wiki/Coptic_binding (accessed on 28 February 2023).

3 For example, a book presenting extensive research on the three manuscripts of the Four Gospels preserved in the monastery of Ǝndä Abba Gärima states the continuity between the Coptic and Ethiopian binding traditions. It affirms: 'Coptic binding was used on the earliest codices (bound books) in Egypt and continues to be used in Ethiopia' (McKenzie and Watson 2016, 43). Along the same lines, one of the conservators who worked on the gospels, talking about the Ethiopic gospels and other books kept in the treasury of the monastery, affirmed that they were all 'made in the same Coptic style of binding' (Capon 2008, 4). The conservation treatment of the gospels entailed rebinding them by repeating the sewing according to the 'Coptic twin method' (a less common expression to identify the two-needle/double-needle Coptic sewing); see Winstanley 2007, 8. Furthermore, Winslow 2015, 124, referring to Ethiopian book structures, uses the expression '"Coptic stitch" bound books', and in Gnisci et al. 2019, 24, he affirms that 'the relatively simple "Coptic" form of binding still in evidence in Ethiopian manuscripts became the basis of Islamic bookbinding'. However, the use of inverted commas serves as a caveat. Miller 2018, 649, adds 'Ethiopian Christians had an ancient binding tradition, corresponding with the Coptic Christians in Egypt, and binding practices were shared between the two cultures'. A broader terminological problem is present in Brown 2006, 73, as he affirms that the vast family of unsupported chain-stitch sewing techniques, as a whole, 'is known as "Coptic sewing" although it was widely practised in eastern Mediterranean lands and is still employed in Ethiopia'. In general, it seems that the misunderstanding is based on the widespread opinion reported in Tomaszewski and Gervers 2015, 120, according to which 'it is believed that the simple structure of Ethiopian binding is very similar to that of early Coptic codices'.

4 The survey of publications is based on the reference list provided in the text of the presentation given by Alessandro Bausi at the conference Manuscript Cataloguing in a Comparative Perspective: State of the Art, Common Challenges, Future Directions organised by the Centre for the Study of Manuscript Cultures and held in Hamburg on 7 – 10 May 2018. The text by Alessandro Bausi (and Denis Nosnitsin) is available at https://www.csmc.uni-hamburg.de/written-artefacts/workinggroups/permanent-seminar/conference-contributions.html (accessed on 28 February 2023).

metadata[5] has shown increased attention toward codicological features. As regards binding in specific, it is possible to note that:

– the sewing structure (sewing type, number of sewing stations, etc.) is not systematically recorded in these sources;
– the Ethiopian sewing technique, when encountered, is often referred to as 'Coptic'.[6]

It must be acknowledged that not always the Ethiopian sewing is described as 'Coptic'. In these cases, the sewing structure is described by noting the sewing technique (chain-stitch)[7] and the number of sewing stations (or pairs of sewing stations).[8] However, given the continued use of such confusing terminology, it

5 The online resources surveyed include entries in *Beta maṣāḥəft: Manuscripts of Ethiopia and Eritrea* (Bm), which 'aims at creating a virtual research environment that shall manage complex data related to the predominantly Christian manuscript tradition of the Ethiopian and Eritrean Highlands' (https://betamasaheft.eu, accessed on 28 February 2023); the *Catalogo Nazionale dei Manoscritti Etiopici Italiani* (CaNaMEI), which aims to digitise, catalogue, and publish online Italian collections of Ethiopian manuscripts (https://www.ipocan.it/index.php/it/canamei-2, accessed on 28 February 2023); the Endangered Archives Programme (EAP), which 'facilitates the digitisation of archives around the world that are in danger of destruction, neglect or physical deterioration' (https://eap.bl.uk, accessed on 28 February 2023); and Hill Museum & Manuscript Library Reading Room (HMML), which 'offers resources for the study of manuscripts and currently features manuscript cultures from Europe, Africa, the Middle East, South Asia, and Southeast Asia' (https://www.vhmml.org, accessed on 28 February 2023).

6 The formula 'Coptic chain-stitch' appears in the catalogues of the Ethiopian Manuscript Imaging Project (EMIP) (Getatchew Haile et al. 2009; Melaku Terefe et al. 2011; Six et al. 2011) as well as in the companion volumes that I surveyed (Delamarter and Melaku Terefe 2009, 27 and Delamarter et al. 2014, 21). Thus, the manuscript descriptions imported from the EMIP project into the Bm online catalogue use the same wording. The formula also appears in Delamarter and Demeke Berhane 2007 and Meley Mulugetta 2016, which use the template of the EMIP catalogue. In reviewing Meley Mulugetta's catalogue, Denis Nosnitsin has already questioned using the term 'Coptic' to describe the Ethiopian sewing technique. However, he also affirmed that 'it is a known fact that "Ethiopian" link-stitch sewing resembles that of later Coptic manuscripts'; see Nosnitsin 2017a, 294.

7 For a definition of 'chain-stitch', see *The Language of Binding Thesaurus* (LoB), http://w3id.org/lob/concept/1249.

8 For example, Ewa Balicka-Witakowska prefers to describe the Ethiopian sewing technique as 'two independent pairs of link-stitches join[ing] the quires together'; see Balicka-Witakowska 2007, 750. The expression 'pairs of sewing stations' is used when the sewing is described in Nosnitsin 2017b; Nosnitsin and Bulakh 2014; Nosnitsin and Reule 2021; and Tomaszewski and Gervers 2015. In the reports of the CaNaMEI project, the terms *doppia catenella* (double chain-stitch) or *catenella a due fili* (two-thread chain-stitch) are used (see Lusini et al. 2020; Lusini et al. 2021; Lusini et al. 2022) and the sewing pattern is identified according to the system codified

seems worthwhile to compare Coptic and Ethiopian sewing techniques to demonstrate that, despite their similarities, they are fundamentally different traditions. Therefore, the term 'Coptic' does not seem appropriate, but is misleading for describing the Ethiopian sewing technique.

Though exploratory and open to reconsideration, what I set out in the article is based on my own autoptic examinations.[9] Therefore, I hope my contribution will be useful especially from this point of view, as it introduces first-hand data for studying the relationship between Coptic and Ethiopian bookbinding techniques. This article aims to discuss (1) the definitions of Coptic and Ethiopian bookbinding; (2) how the terminological confusion between them arose; and (3) the difference between Ethiopian and Coptic sewing technique based also on the evidence that has emerged from my first-hand observations.

2 Defining Ethiopian and Coptic bookbinding

When discussing historical book structures, the term 'Ethiopian bookbinding' refers to the traditional technique used to bind Ethiopic manuscripts, that is, manuscripts written in the Ethiopic language. In contrast, 'Coptic bookbinding'

in Bozzacchi 2001. As a side note, in Report 2, where the sewing is described as being on 'quattro coppie di fori' ('four pairs of holes'), is clear from the images that the pairs are two and, therefore, the sewing stations are four in number (see Lusini et al. 2021, 12, 15, 17, 19, 24). Further exceptions are the entries in Bm that are not imported from EMIP catalogues and describe the sewing. Generally, Bm entries record the number of sewing stations, and, occasionally, the sewing pattern is identified according to Bozzacchi 2001. See, for example, the bindings of the Ethiopic manuscripts in the Exarchic Greek Abbey of St Mary of Grottaferrata (https://betamasaheft.eu/INS0414Abbey_of_St_Mary_of_Grottaferrata, accessed on 28 February 2023) and the Staats- und Universitätsbibliothek Hamburg Carl von Ossietzky (https://betamasaheft.eu/INS0387State_and_University_Library_Hamburg_, accessed on 28 February 2023).

9 As part of my doctoral project, from 2020 to 2022, I had the chance to examine Coptic bindings first-hand at the Arxiu Històric de la Companya de Jesús de Catalunya, the Bibliothèque nationale de France, the British Library, the Chester Beatty Library, the Kölner Papyrussammlung Institut für Altertumskunde, the Museo Egizio in Turin, the Österreichische Nationalbibliothek, the Rijksmuseum van Oudheden, and the Staats- und Universitätsbibliothek Hamburg Carl von Ossietzky. Further, as part of the 'Torno Subito 2017' Operational Programme of the Regione Lazio, I could examine the bindings of the Ethiopic manuscripts kept in the Staats- und Universitätsbibliothek Hamburg Carl von Ossietzky, in the Angelica, Casanatense, Giovardiana, and Nazionale Centrale Vittorio Emanuele II libraries, in the Casamari abbey, in the Grottaferrata abbey, and few specimens in the library of the Accademia Nazionale dei Lincei e Corsiniana.

is commonly used to refer to the binding techniques prevalent in Egypt in the late antique and early medieval eras. However, some clarifications are necessary to precisely delineate these fields of enquiry.

The expression 'Ethiopian bookbinding' identifies a set of structural features shared by the bindings of Christian manuscripts produced in Ethiopia and Eritrea. These include chain-stitch sewing (mostly) on paired sewing stations, slit-braid endbands,[10] and wooden boards, which may be covered with leather and lined with colourful textiles. In Ethiopic manuscripts, the writing support is usually parchment, produced without making use of lime baths.[11] While this is the general rule, one should note that not all Ethiopic manuscripts have an Ethiopian binding or are written on parchment. Indeed, manuscripts made outside Ethiopia and Eritrea often use materials, techniques, and decorations distinctive to the place where they were produced.[12]

Furthermore, Christian and Islamic traditions coexist in the Horn of Africa, but the two differ in the shape of their books.[13] Indeed, the Islamic texts are written on paper in Arabic script and bound with a technique that falls under the category of Islamic bookbinding. It has been rightly suggested that the possibility of differentiating Christian and Islamic traditions through the form of their books raises 'issues of identities' that could be investigated at an anthropological level.[14]

In reference to historical book structures, 'Coptic bookbinding' is a historical expression, deeply rooted in the literature, which refers to the binding tradi-

10 For a definition of slit-braid endband and a line drawing of its construction, see Szirmai 1999, 49 and Fig. 4.3.

11 For an introduction to the traditional method of parchment making and further bibliography, see Balicka-Witakowska et al. 2015, 154–155; also with beautiful photographs, see Winslow 2015, 69–112.

12 See, for example, Rome, Biblioteca Casanatense, ms. 2206, written on paper (Zarzeczny 2015). Furthermore, Ethiopic manuscripts with an originally Ethiopian binding may have been rebound using a different technique, also as a result of conservation interventions. See, for example, manuscripts Grottaferrata, Biblioteca statale del Monumento Nazionale di Grottaferrata, Crypt. Aet. 2, Crypt. Aet. 4, and Crypt. Aet. 9.

13 After being long neglected, studies on Islamic written heritage in the Horn of Africa have been revitalised by initiatives such as the EMIP (see Gori et al. 2014) and the ERC project 'IslHornAfr: Islam in the Horn of Africa, A Comparative Literary Approach' (PI Alessandro Gori); see http://www.islhornafr.eu (accessed on 28 February 2023).

14 Regourd et al. 2014, xci. Anne Regourd gives a detailed account of Ethiopian Islamic bindings found on manuscripts kept at the Institute of Ethiopian Studies (IES) in Addis Ababa that have been digitised by EMIP; see Regourd et al. 2014, lxx–ccii and Regourd 2019. For the binding technique in the city of Harar, see also Pankhurst 1992.

tion prevalent in Egypt during the late antique and early medieval periods. Coptic book structures vary, and include single quires attached directly to the leather cover using tackets;[15] multi-quire codices sewn with chain-stitch and furnished with wooden boards, or laminated papyrus boards with leather covers.[16] However, the use of the term 'Coptic' requires some caution, since it is fundamentally inappropriate when applied outside of a very specific context: it alludes to a link with Christianity and to a specific language that the bound codices may never have had.

The term 'Coptic' derives from the term *qubṭ*/*qibṭ*-, from the Greek αἰγύπτιος, used after the Arab conquest of Egypt (639–641 CE) to designate the indigenous population. Therefore, it initially had no religious connotation. However, with time, the term 'Coptic' came to be used as a general term to denote the Christian minority as distinct from the vast Muslim majority. However, it is necessary to recall that after the Council of Chalcedon (451 CE), Egyptian Christianity was divided between the Copts, opponents of the Chalcedonian choices, and the Melkites, who remained in communion with the Patriarchate of Constantinople. Therefore, the term 'Coptic' cannot be considered a general term for Egyptian Christianity, but refers only to its anti-Chalcedonian component. Likewise, the term is appropriately applied to the literature and language specifically created for this religious sphere.[17]

Furthermore, the Egyptian religious landscape in the first centuries of Christianity was uneven: the Christian faith was mixed with traditional cults, and different Christian theologies were present, such as Manichaeism and Gnosticism. For example, the bindings of the Nag Hammadi codices contain Gnostic texts, and recently three wooden boards belonging to the bindings of Manichaean codices were found at the Chester Beatty Library (henceforth CBL).[18] 'Coptic' is an inappropriate term for such bookbinding because it is associated with the idea of a canonised Christianity that was not present in the early centuries; it would thus be improper to trace the production of bindings of this period to the same Christian context.

Moreover, the term 'Coptic' is misleading because it links the tradition to a specific language. Therefore, the expression 'Coptic bookbinding' could be

15 For a definition of 'tackets', see the LoB, http://w3id.org/lob/concept/1657.

16 The presence of vegetal fibres, mud-like fillers, leather, parchment, and paper fragments in the boards has also been observed.

17 For an introduction to the correct use of the term 'Coptic' and a discussion of the cultural traits of Christian Egypt from its origins to modern times, see Buzi 2014.

18 These are Dublin, CBL, Cpt 824, Cpt 825, and Cpt 826.

interpreted as the technique used to bind Egyptian codices in the Coptic language. However, in the period under consideration, Egypt was a bilingual country, and codices written in Greek and Coptic in Egypt were bound according to the same technique. The similarity between the bindings of Greek and Coptic Egyptian manuscripts has already been noted by the bookbinder and book historian Berthe van Regemorter,[19] who in a published posthumously study on Byzantine binding, affirmed:

> Rien ne différencie les reliures des livres grecs trouvés en Égypte de celles des livres coptes, aussi devons-nous considérer ce type primitif comme caractéristique de l'Égypte et non point comme propre au livre copte.[20]

Therefore, the same technique was adopted to bind all manuscripts produced in the same cultural context, regardless of language and content.[21]

Improper as it may be, since the term 'Coptic' is also commonly associated with other artistic manifestations of the period and has a long history in the scientific literature, it is reasonable to retain the expression 'Coptic bookbinding' to denote the set of characteristic features common to all late antique and early medieval Egyptian bindings.

However, in reference to modern book structures, the meaning of 'Coptic bookbinding' is different still. Indeed, Julia Miller informs us that the term is nowadays applied to 'any book with unsupported link sewing where the boards are sewn simultaneously with the text'.[22] Hence the misunderstanding: although Ethiopian and Coptic are distinct bookbinding traditions, since Ethiopian bindings have structural characteristics that fall within the modern definition of 'Coptic bookbinding', they are sometimes referred to as 'Coptic'.

19 For her biography, see Irigoin 1966.

20 'There is no difference between the bindings of the Greek books found in Egypt and those of the Coptic books, so we must consider this primitive type as characteristic of Egypt and not as specific to the Coptic book' (van Regemorter 1967, 102; translation mine).

21 For instance, we find the same technique in the binding of the Greek gospel known as the codex Washingtonianus (Washington, DC, Smithsonian Institution, Freer Gallery of Art, 06.274), the binding of the papyrus codex containing the Acts and the Catholic Epistles in Greek (Cologny, Fondation Martin Bodmer, P.Bodmer XVII), but also in the binding of a Greek grammar and Graeco–Latin lexicon (Dublin, CBL, BP XXI); see Rose-Beers 2023.

22 Miller 2010, 425. Note that 'link sewing' is an alternative label for 'chain-stitch sewing'.

3 The basis of the terminological misunderstanding

How did the expression 'Coptic binding' come to be associated with the Ethiopian binding tradition? One reason might be related to the history of the Ethiopian Church, which, until the middle of the twentieth century, was formally dependent on the Coptic Church.[23] The other is most probably rooted in the early literature on Ethiopian bookbinding that used to emphasise its similarity to the Coptic tradition.[24]

Thanks to the increasing number of digitisation projects, researchers can now base their observations on a broader range of manuscripts. Some established beliefs have thus proven to be generalisations and are now obsolete.[25] The studies of Theodore C. Petersen, Berthe van Regemorter, and Janos Szirmai on Coptic and Ethiopian bookbinding will be discussed first because of the significant impact they had on the development of studies in the field.

Ethiopian bookbinding was considered closely related to the Coptic, particularly in terms of sewing technique. Theodore C. Petersen, the author of the most extensive and detailed monograph on Coptic bookbinding to date, supported this theory. Although the catalogue, completed in 1951 after more than twenty years' effort, has never been sent to print, the typescript served as a reference for many book historians. It was finally published posthumously in 2021.[26] Petersen based his observations on the bindings of the Coptic manuscripts from Hamuli kept at the Morgan Library and Museum and on additional Coptic bindings in institutions scattered worldwide. He offers no information, however, on the provenance of the Ethiopian manuscripts he studied.[27] In the monograph, he notes that in many late antique Coptic codices, double stitches[28]

23 Störk and Müller 2003, 799a.

24 Without the intention of providing a complete list, see Cockerell 1977, 8; Bosch et al. 1981, 23; Bull 1987, 44b; Greenfield 1991, 183; and Greenfield 1998, 83.

25 This article is not intended to discredit those scholars who laid the foundations of the study of bookbinding as a discipline in its own right; their studies on understanding bookbinding techniques remain fundamental.

26 Edited by Francisco H. Trujillo for the Legacy Press. For details regarding the history of the manuscript collection and the edition of the catalogue, see Trujillo 2021.

27 Petersen includes three drawings of Ethiopian structures (Petersen 2021, Figs 11a–c).

28 The expression 'double stitches' in this article refers to two thread lengths along the fold between sewing stations.

are found in the centre of the quires, and he observes the similarity of this sewing method with the Ethiopian one. He affirms:

> In many [Coptic] parchment codices, both early and later, the sewing stitches placed in the folds of the quires are found to be of double threads indicating that the sewing operation was executed either with two separate threads and needles or with a thread with a needle at either end, in a manner similar to that used by Ethiopic bookbinders until comparatively recent times.[29]

Therefore, according to Petersen, the Coptic sewing technique is often similar to the Ethiopian one, still in use in recent times, due to the presence of double stitches in the fold of the quires.

Later, Berthe van Regemorter, who was among the first to dedicate a study exclusively to Ethiopian bookbinding, considered the similarity of the sewing a sign of Ethiopian binding's descent from the Coptic. According to van Regemorter, the similarity derives from an additional feature of the sewing structure, that is, its periodic fold pattern.[30] In the 1962 article 'Ethiopian Bookbinding', after translating the description of the Ethiopian bookmaking technique that the French explorer Antoine d'Abbadie provides in his catalogue,[31] she writes:

> I want to add a detail about the technique of the Ethiopian binder, which probably did not strike the French explorer but which is quite characteristic of the Coptic origin of the Ethiopian bookbinder's craft. An Ethiopian book is never sewn with one thread beginning at the tail of a quire and going up to the head before entering the next quire. The centre of the quires always have [*sic*] an even number of holes. A thread will be passed through number 1 and then go through number 2. Another thread will go through number 3 and number 4, and so on.[32]

According to van Regemorter, then, the Ethiopian codices always present an even number of sewing stations and a periodic fold pattern, which is considered proof of their Coptic origin. It follows that Coptic codices were considered to have the same characteristics. However, van Regemorter's statement is not always true. Petersen had already discovered that Coptic and Ethiopian bindings

29 Petersen 2021, 25.

30 The fold pattern is defined as the 'the sequence of stitches visible in the fold of the innermost folio of a section' and 'periodic fold patterns have intervals between some of the stations'; see Spitzmueller 1982, 45.

31 D'Abbadie 1859, xii–xiii.

32 van Regemorter 1962, 87.

could be sewn on three sewing stations,[33] and Theodore Lamacraft, the conservator who worked on the codices from the monastery of Apa Jeremiah now kept at the CBL, noted that the codex Dublin, CBL, Cpt 814 (CLM 65)[34] was sewn all-along, continuously, on four sewing stations.[35]

Another common opinion was that Ethiopian bookbinding had remained almost unchanged for centuries. Indeed, modern Ethiopian bindings seem outwardly similar to the ancient ones, which would confirm the stability of the Ethiopian binding technique. Not surprisingly, Janos Szirmai, in his book *The Archaeology of Medieval Bookbinding* – one of the most influential volumes on bookbinding history – shares this theory, affirming that Ethiopic manuscripts are 'bound in a very simple codex form, which has in fact remained almost unchanged until the present day'.[36] However, codicological research on Ethiopian manuscripts is in its infancy; by recording some previously unknown characteristics of Ethiopian bookbinding,[37] recent studies have revealed how limited our knowledge of Ethiopian codex manufacture is.[38] However, many aspects still deserve dedicated research to be fully understood. For example, as regards the sewing technique, Giampiero Bozzacchi has examined fifty-six Ethiopic codices kept at the library of the Accademia Nazionale dei Lincei e Corsiniana in Rome, and was able to identify and describe twelve variation patterns within the general typology of Ethiopian sewing.[39] Further research may verify whether the variations are related to temporal or geographical factors.[40] As a preliminary remark, it can be argued that the technical and aesthetic variations in Ethiopian bookbinding are concentrated on detail, as Richard Pankhurst had already noted with respect to their decoration.[41]

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33 For an early analytical drawing of an Ethiopian structure sewn on three sewing stations, see Petersen 2021, Fig. 11b.

34 CLM stands for Coptic Literary Manuscript and is the stable ID attributed to each codicological unit by the project 'PAThs: Tracking Papyrus and Parchment Paths. An Archaeological Atlas of Coptic Literature. Literary Texts in Their Original Context. Production, Copying, Usage, Dissemination and Storage' (PI Paola Buzi) (http://paths.uniroma1.it and https://atlas.paths-erc.eu, accessed on 28 February 2023). This article indicates the CLM stable ID in brackets.

35 Lamacraft 1939, 227.

36 Szirmai 1999, 45.

37 Di Bella and Sarris 2014; Nosnitsin 2016.

38 For an overview of the development of Ethiopian manuscript studies with a focus on codicological aspects and further bibliography, see Nosnitsin 2012.

39 Bozzacchi 2000; Bozzacchi 2001.

40 For a summary of the possible variations in Ethiopian bookbinding and relevant bibliography, see Dal Sasso 2022.

41 Pankhurst 1984, 209.

Lastly, the idea of the similarity between Coptic and Ethiopian bindings combined with the latter's stability over time gave rise to the assumption that the Ethiopian bookbinding craft, to a lesser extent still practised today, preserved Coptic techniques and passed them on to us. In fact, van Regemorter wrote about how the Ethiopians preserved the ancient Coptic binding technique until the nineteenth century:

> Les reliures éthiopiennes présentent une technique de couture absolument égyptienne (à fils indépendants) [...]. Ce pays est resté fidèle à ce modèle de reliure jusqu'au XIX^{e} siècle inclus.[42]

Szirmai has reported this theory, and even if he does not clearly support it, he does not discredit it either. Indeed, referring to Ethiopian bindings, he states:

> Their simple structure has often been equated with that of early Coptic codices, which would have meant that the Ethiopian binder had preserved the tradition of his craft for more than a millennium.[43]

In light of this, it can be argued that the confusing use of the terms 'Coptic' and 'Ethiopian' binding has its roots in the past literature produced by distinguished scholars, who spread the idea of the similarity between Ethiopian and Coptic binding technique. The assumption was also fuelled by the Ethiopian Church being formally dependent on the Coptic Church until the mid-1950s. As a consequence, the Ethiopian sewing technique began to be called 'Coptic'. However, the assumption of similarity between the two traditions was founded on underlying generalisations and misunderstandings. To highlight the differences between Coptic and Ethiopian sewing techniques, Section 4 presents a comparison between them.

42 'Ethiopian bindings have an undoubtedly Egyptian sewing technique (with independent threads) [...] This country remained faithful to this binding model until the nineteenth century included' (van Regemorter 1967, 104; translation mine).
43 Szirmai 1999, 45.

4 Ethiopian and Coptic sewing technique in comparison

The following section offers a comparison between Ethiopian and Coptic binding. It first discusses how the quantity and state of conservation of preserved specimens influence the study of the binding tradition; it then compares Ethiopian and Coptic sewing technique.[44]

4.1 The problem with Ethiopian and Coptic bookbinding evidence

The problem with a comparative study of Coptic and Ethiopian binding is, first and foremost, the considerable time gap between the preserved specimens of the two traditions. Ethiopian manuscripts dated before the thirteenth century are rare, their number limited to a handful of examples. Several factors probably underlie this scarcity: besides the Muslim persecution that destroyed Christian heritage during the sixteenth century, other violent events, such as the Italo–Ethiopian war (1935–1941), certainly also played a role. So too did the deliberate replacement of old manuscripts with new ones due to damage, the need to remove and replace texts, or simply the poor storage conditions that accelerated the natural decay of manuscripts.[45] Amid the paucity of evidence, it is difficult to trace the evolution of the binding technique.

As Ethiopian manuscript production still endures today[46] – producing codices that, at first glance, are similar to the older ones – one might be tempted to reconstruct the ancient technique based on modern practices. However, recent studies have revealed minor variations among Ethiopian bindings. Moreover, the preserved manuscripts have often been reworked and repaired. The boards and leather covers, fulfilling their function as protective elements of the book block, inevitably suffer deterioration. The sewing in particular is one of the first elements that must be replaced, due to the wear it undergoes when turning pages. The presence of unused holes in the quires (for sewing) or boards (for

44 For the purpose of this article, only the structures sewn through the fold of the quires will be considered.

45 For a discussion on the number of early manuscripts and the causes of their scarcity, see Bausi 2008, 518–520 and Bausi 2015, 48.

46 For recent studies on the manuscript production as it is today, see Mellors and Parsons 2002a; Mellors and Parsons 2002b; Winslow 2015.

attaching them to the book block) indicates the practice of replacing the sewing and reusing old boards in new bindings. Therefore, it is even more difficult to assess to what extent the ancient technique has been preserved.

Despite such cycles of deterioration and replacement, some original features have survived in the binding of the Abba Gärima Gospels, the most ancient Ethiopian manuscripts known so far (sixth/seventh century).[47] As evidenced by the 2006 restoration, the bindings have been repaired over time, so the codices do not retain the original sewing. Although the dating of the bindings is uncertain, the Abba Gärima Gospel 2 metal covers are decorated 'with a large cross in late antique style'.[48] A further feature of their antiquity is that the lower metal cover of Abba Gärima Gospel 1 is attached to a laminated papyrus board on which traces of a leather cover are visible. It may be speculated that this is the rest of an ancient, laminated papyrus board with a leather cover,[49] similar to some preserved Coptic bindings.[50]

As far as Coptic bindings are concerned, since the late eighteenth century, Coptic and Greek manuscripts from Egypt have entered European and non-European collections. However, it is evident from the first glance is that these manuscripts are in a highly fragmentary state, and rarely has a codex been preserved intact at a single institution. Coptic and Greek manuscripts have either suffered the ravages of time, or were intentionally torn apart when discovered to sell them in separate pieces, thus increasing the sale proceeds. As a result, fragments belonging to the same codicological unit are scattered throughout various collections worldwide.[51]

Moreover, as researchers focused on the language and intellectual content rather than the materiality of the manuscripts, even codices preserved in good condition underwent invasive processes to facilitate the handling of the leaves. For example, the bindings were separated from the book block; the sewing was cut to free the quires and allow the bifolia, sometimes cut in half for the purpose, to be housed between glass panes. This procedure was common in many

47 The dating of the gospels has been discussed in Bausi 2011.

48 Bausi et al. 2020, 49.

49 A full set of digitised images of Abba Gärima Gospel 1 is available, upon registration, in the HMML Reading Room (see https://w3id.org/vhmml/readingRoom/view/132896).

50 The presence of a papyrus board has been noted in Winslow 2015, 249, n. 69.

51 For this purpose, abbreviations identifying codicological units, like the CLM, are used. For example, the manuscript fragments originating from the monastery of Shenoute at Atripe, belonging to the codicological unit CLM 264, are scattered in collections in Egypt, France, Germany, Italy, the United Kingdom, and the US. See https://atlas.paths-erc.eu/manuscripts/264 (accessed on 28 February 2023).

European and non-European institutions until the second half of the twentieth century. In some cases, the treatment was even worse: in antiquity, discarded fragments of old manuscripts were often reused, glued together to provide rigid supports for leather coverings; later, in the interest of recovering scholarly texts, the boards were split to extract the precious manuscript fragments, thus reducing the bindings to empty leather covers. Moreover, since the bindings were deemed of little value, they were sometimes even disposed of by conservation institutions after these invasive operations.

In light of this, one can understand why there are so few manuscripts still preserving the original Coptic binding, complete with sewing.[52] Additional information can be gathered from folios with remnants of sewing threads but detached from their cover, which has not been preserved. Therefore, research must combine all the fragmentary evidence and interpret the resulting image, filling in the remaining gaps.

In the absence of material evidence, the sewing structure could only be reconstructed if it was documented before the invasive interventions. Unfortunately, this happened only rarely. For example, the sewing structure of the codices from the monastery of Apa Jeremiah is known thanks to Lamacraft, who documented it, even with drawings, before the codices were dismembered.[53] One outstanding case consists of a few photographs that emerged, during the course of this research, from among Walter Ewing Crum's papers at the Griffith Institute in Oxford. They show some of the Coptic manuscripts from the city of Edfu purchased by the British Library from the American Egyptologist Robert de Rustafjaell on 12 November 1907. When they were first acquired, the manuscripts still preserved their binding, albeit in a deteriorated state. Most of the photographs accompany the description of Rustafjaell's collection that appears

52 Coptic manuscripts still preserving the ancient sewing are: Barcelona, Arxiu Històric de la Companya de Jesús a Catalunya, P. Palau Ribes 181–183 (CLM 3956); Cologny, Fondation Martin Bodmer, P.Bodmer VI (CLM 34), P.Bodmer XVI (CLM 35), P.Bodmer XIX (CLM 37), and probably P.Bodmer XVIII (CLM 36) (in the digitisation, the fold is hidden by strips of parchment with the function of sewing stays); Leiden, Rijksmuseum van Oudheden, AMS9 (CLM 3355); New York, NY, Morgan Library and Museum, G67 (CLM 44) and M910 (CLM 1399) (which has not been opened yet due to its state of preservation); and probably Princeton, NJ, University Library, Scheide MS 144 (CLM 6296).

53 See Lamacraft 1939. He had an incredible conservationist sensitivity for the time, since he kept all the original materials he removed from the bindings (even the dust and smallest debris). Now, everything is housed neatly in forms cut to size in Plastazote® panels and preserved in boxes.

in *The Lights of Egypt* (1909), but those showing binding features (for example, Fig. 1 and Fig. 2) were not selected for publication.[54]

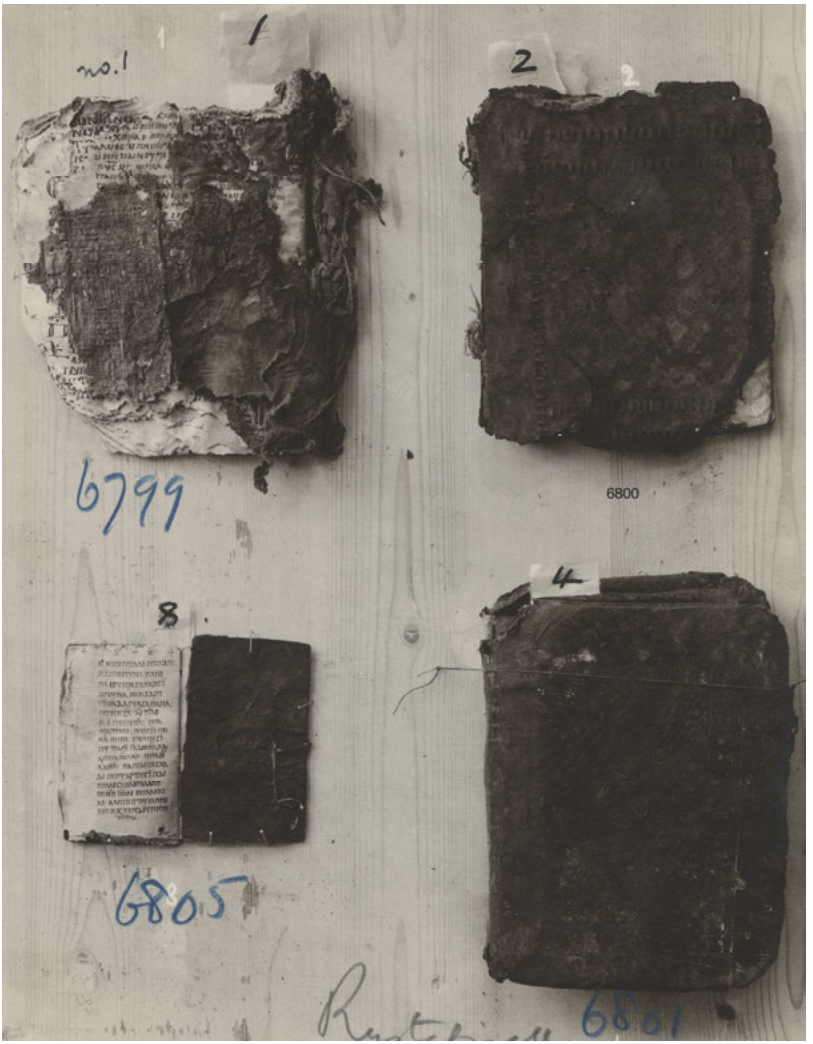

Fig. 1: The Coptic manuscripts London, British Library, Or. 6799 (CLM 183), Or. 6800 (CLM 197), Or. 6801 (CLM 184) and the Old Nubian manuscript Or. 6805, in their ancient bindings. Oxford, Griffith Institute, Crum mss I.3.12.4 © Griffith Institute, University of Oxford

54 De Rustafjaell 1909.

The manuscripts have since been rebound and the ancient bindings were not preserved;[55] therefore, the photographs are unique testimonies of the pristine state of the bindings: they show aspects of the external appearance of the covers, and internal structural features such as the sewing. The previously unknown photographic documentation makes new observations on Coptic sewing technique possible.

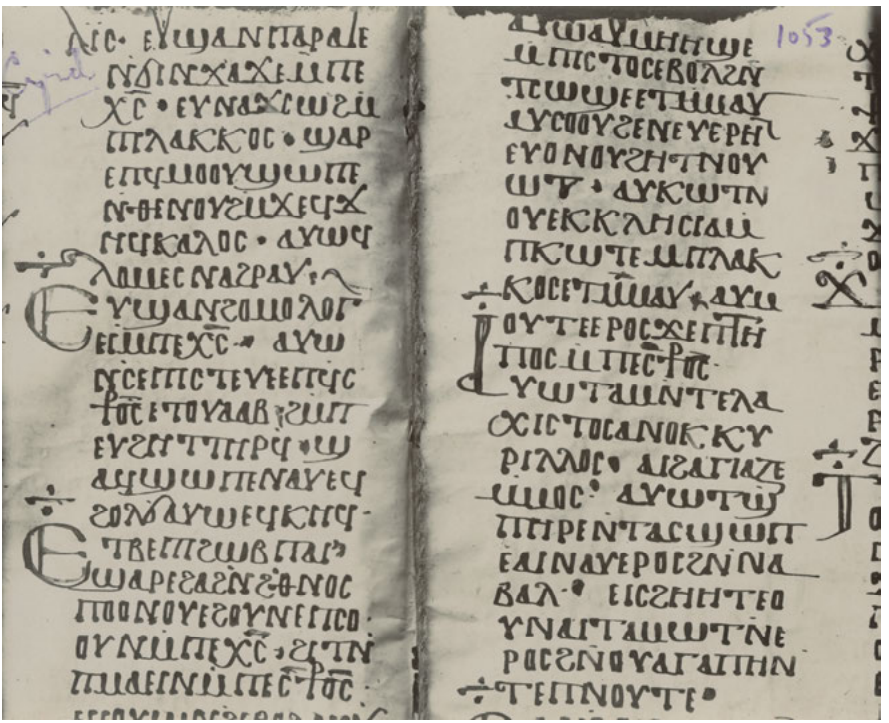

Fig. 2: Original sewing of London, British Library, Or. 6799 (CLM 183). Oxford, Griffith Institute, Crum mss I.3.12.3 © Griffith Institute, University of Oxford

55 Of the manuscript binding London, British Library, Or. 6801 (CLM 184) only the central panel of the covers is preserved, trimmed and glued as *doublure* to the modern binding. For a summary of the bindings of the Edfu manuscripts still preserved at the British Library, see Lindsay 2001. Jen Lindsay is currently preparing an updated study of these Coptic bindings.

4.2 Ethiopian and Coptic sewing methods

As discussed in the previous sections, the sewing technique is traditionally indicated as an element of similarity between the Ethiopian and Coptic binding traditions. Specifically, the statements on which this assumption was built, based on the surveyed literature, are that of Petersen regarding the presence of double stitches in the fold, and that of van Regemorter regarding the periodic structure of the fold pattern. However, these statements are not universally valid, and to avoid generalisations, they must be restricted to specific cases, as demonstrated by direct observation.

The sewing technique used in both Ethiopian and Coptic multi-quire codices is the chain-stitch, a type of unsupported sewing common to Eastern bookbinding traditions (for example, Islamic, Byzantine, Coptic, and Ethiopian), which assumes a chain-like pattern on the spine of the book block. Usually, in the Ethiopian tradition, the chain-stitch is executed with independent threads on pairs of sewing stations and is often referred to as a 'two-needle sewing'. The expression indicates that each pair of sewing stations is sewn using two needles: either with one thread (one needle at each end) or two threads (one needle each).[56] Therefore, in the centrefold of the quires, two thread lengths move independently, resulting in a double stitch. Normally, Ethiopic manuscripts are sewn on two sewing stations (one pair) or four sewing stations (two pairs). The latter structures present the periodic fold pattern noted by van Regemorter. An analytical drawing of the Ethiopian sewing on four sewing stations is presented in Fig. 3, and the resulting periodic fold pattern in the centre of the quire is shown in Fig. 4.[57]

56 Sean Michael Winslow observes that the sewing could be conducted either with needles or solely by means of awls to punch the holes in the quires and pull the thread through; see Winslow 2015, 205.

57 Fig. 3 does not show the sewing of the first quire or the board attachment, as several variants are possible.

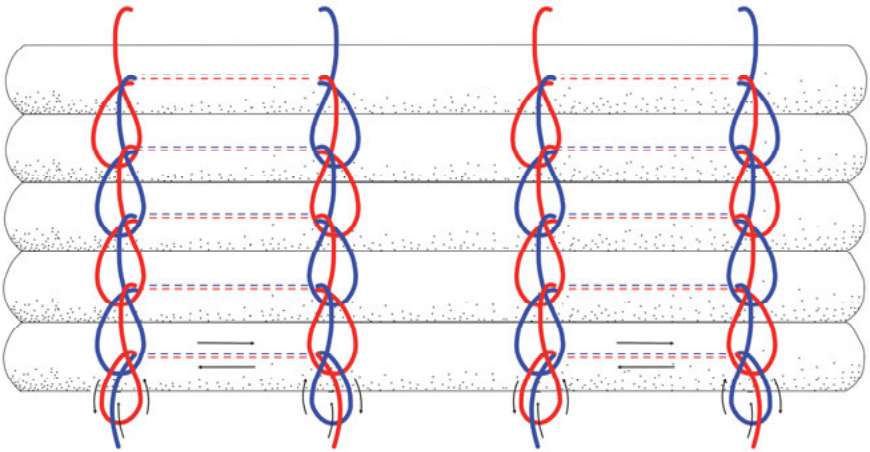

Fig. 3: Analytical drawing of an Ethiopian sewing on four sewing stations (two pairs).

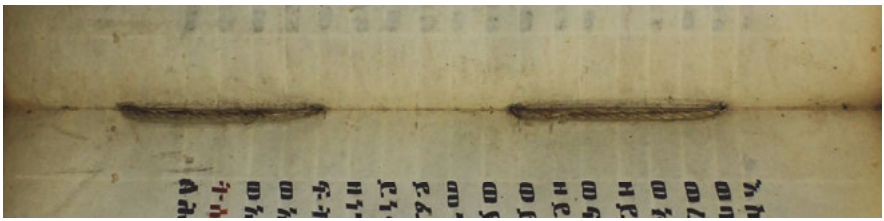

Fig. 4: Periodic fold pattern of an Ethiopic manuscript sewn on four sewing stations (two pairs) with double stitches between each pair. Grottaferrata, Biblioteca statale del Monumento Nazionale di Grottaferrata, Crypt. Aet. 7.

However, structures sewn on an even number of paired sewing stations are not the only possibility, and a smaller number of manuscripts are sewn on three sewing stations.[58] Ethiopian three-hole sewing has been the object of Dan Paterson's investigations in preparation for the conservation of Ethiopic manuscript MS 93 of the Thomas Kane Collection in the African and Middle Eastern Division of the Library of Congress. Common features of the three-hole bindings are the

58 The manuscripts sewn on three sewing stations represent a minority in the collections of Ethiopic manuscripts. For example, only seven of the one hundred and one manuscripts examined by the conservator Dan Paterson had a three-hole pattern (see Paterson 2008, 58), and only six of the ninety-one manuscripts in the collection of May Wäyni had the same (see Tomaszewski and Gervers 2015, 210).

continuous fold pattern and the presence of double lengths of thread in the fold. However, during his investigation, Paterson discovered that even among the few structures with three sewing stations, there are variations in the way the sewing was performed, leading him to state:

> the variations within the small number of three-hole bindings confirms [*sic*] for me that Ethiopian bindings are not as uncomplicated or uniform in structure as is often assumed.[59]

Specific research is needed to fully understand these structures. For this purpose, an essential aid would be the systematic recording of the number of sewing stations in cataloguing projects.

In the Coptic bookbinding tradition, multi-quire codices are sewn with the chain-stitch technique as well.[60] However, this exhibits different features compared to the Ethiopian tradition. Based on the current evidence, in Coptic bindings, the presence of double stitches between sewing stations is confined to quires with a continuous fold pattern. In some codices, the continuous fold pattern with double stitches could have been maintained throughout the codex, as, for example, in the codex Washingtonianus (Washington, DC, Smithsonian Institution, Freer Gallery of Art, 06.274, where the quires have been sewn on five sewing stations with double stitches,[61] and Dublin, CBL, Cpt 815 (CLM 66), sewn on three sewing stations with double stitches.[62] Sometimes the continuous sewing pattern is maintained, but the presence of double stitches between the sewing stations is limited to the first and last quires. So far, this feature is common to codices furnished with wooden covers, as it has been recorded in the manu-

59 Paterson 2008, 61.

60 The presence of a sort of sewing supports has been recorded, but only for the repair of broken sewing. Indeed, Petersen notes that broken chain-stitch links in manuscripts M586 (CLM 251) (= binding 6) and M599 (CLM 215) (= binding 12) at the Morgan Library and Museum were repaired by sewing the loose quires to strands of cord stretched across the spine of the book; see Petersen 2021, 36–37.

61 According to Petersen (2021, 34, Fig. 16c), in two instances there are even three stitches between the sewing stations, while in the second and third quires there is only one length. However, the state of the sewing today is not the same as that observed by Petersen. See the digital reproduction available in the digital collection of the Centre for the Study of New Testament Manuscripts, https://manuscripts.csntm.org/manuscript/View/GA_032 (accessed on 1 March 2023).

62 See Lamacraft 1939, 232 (= MS. C); Petersen 2021, 29; and for an analytic drawing of the sewing, Szirmai 1999, Fig. 2.3c. It is worth noting that both Ethiopian and Coptic book structures sewn on three stations have a continuous fold pattern, but their comparison awaits dedicated research.

script Dublin, CBL, Cpt 814 (CLM 65), sewn on four sewing stations;[63] the codex Princeton, NJ, University Library, Scheide MS 144 (CLM 6296), on three sewing stations; the codex Glazier (New York, NY, Morgan Library and Museum, G67; CLM 44), on three sewing stations;[64] and the codex Ann Arbor, MI, University of Michigan Library, Ms 167 (CLM 68), kept at the University of Michigan Library, sewn on four sewing stations.[65] Other times, only one thread length connects one sewing station to the next, creating the continuous fold pattern. The late Copto-Arabic specimens, such as Vatican City, Biblioteca Apostolica Vaticana, Barb. Or. 17 (CLM 3070), which is sewn on five stations, preserve this structure. However, this is not the most adequate example on which to base a general assessment, as it represents an evolution of the binding technique that assimilated features of Islamic tradition and possibly underwent conservation treatments. However, even though other codices featuring chain-stitch sewing with a single thread length have not been preserved in their entirety, there is further evidence to document its use. In fact, the miniature Cologne Mani-Codex shows this type of sewing. Though the outer margins of the parchment bifolia are missing, the fold is preserved, and it retains fragments of the S-plied thread used for sewing arranged in a continuous fold pattern.[66] Another fragmentary proof of sewing with a single thread length in the centre of the fold can be found among Crum's papers at the Griffith Institute in Oxford. The photograph is the only document of the now lost sewing of the Coptic manuscript Or. 6799 (CLM 183) shortly before its acquisition (and dismembering) at the British Museum (Fig. 2). The photograph shows an open central bifolium sewn with a Z-plied thread that connects three sewing holes in a continuous fold pattern. Another piece of evidence comes from Hyvernat's photostats of the Hamuli Coptic codices that are now in the Morgan Library and Museum. Fr. Henry Hyvernat, director of the Department of Semitic and Egyptian Languages and Literatures at the Catholic University of America in Washington, DC, was hired to catalogue the collection and took a series of photostats showing the codices still in their bindings before they were sent to the Vatican Library for preservation, where the sewing was cut to separate the book blocks from the covers. According to Petersen, the photo-

63 See Lamacraft 1939, 227 (= MS. B), and for an analytic drawing of the sewing, Szirmai 1999, Fig. 2.3b.

64 See Sharp 1999, 463 and Fig. 6.

65 See Lamacraft 1939, 233 (= MS. D) and Sharp 1999, 463 and Fig. 6.

66 For colour digital reproductions, see https://papyri.uni-koeln.de/features/mani-kodex (accessed on 1 March 2023).

stats show the codices sewn with 'three stitches' on four sewing stations.[67] Fig. 5 is one of the photostats,[68] which confirms Petersen's statement showing the manuscript New York, NY, Morgan Library and Museum, M605 (CLM 255) sewn on four sewing stations with continuous fold pattern and single thread length. The image also shows stitches at the head and tail for attaching endbands. The short horizontal lines mark the extention of stitches and were later added on the photostat probably by Petersen.

In Coptic bookbinding, as in the Ethiopian tradition, there are structures with a periodic fold pattern, sewn on pairs of sewing stations. Yet the preserved specimens show that there is a difference between the two traditions; while in the Ethiopian tradition there are two thread lengths between each pair of stations, in the Coptic there is just one. The Coptic sewing method has already been described and drawn by the conservator and bookbinding historian Paul Adam, and more recently by Brent Nongbri.[69] A schema of the sewing is presented in Fig. 6. From the comparison of the sewing schemas of the Ethiopian (Fig. 3) and Coptic (Fig. 6) manuscripts sewn on two pairs of sewing stations, the difference in the number of threads passing along the fold between a pair of sewing stations emerges.

Furthermore, in the Coptic tradition, a codex can switch the fold pattern from continuous to periodic. In these cases, the presence of double stitches is limited to the first and last two quires, with a continuous fold pattern, while the remnant, with a periodic fold pattern, have only a single thread length between the pairs of sewing stations. This structure has been recorded, for example, in the manuscript Dublin, CBL, Cpt 813 (CLM 64).[70] Other structures might have been sewn entirely on paired sewing stations with a single thread length between them, as shown in the digital images of Cologny, Fondation Martin Bodmer, P.Bodmer VI (CLM 34),[71] P.Bodmer XVI (CLM 35),[72] P.Bodmer XIX (CLM

67 In the specific, Petersen refers to the photostats of M586 (CLM 251) (Petersen 2021, 102 = binding 6), M599 (CLM 215) (Petersen 2021, 118–119 = binding 12), M585 (CLM 238) (Petersen 2021, 141 = binding 20), M575 (CLM 214) (Petersen 2021, 150 = binding 23), M574 (CLM 213) (Petersen 2021, 152 = binding 24), M570 (CLM 208) (Petersen 2021, 157 = binding 25), M605 (CLM 255) (Petersen 2021, 160 = binding 26).

68 The original colours of the negative print have been inverted using the graphics editor Affinity Photo.

69 Adam 1914, 91; Nongbri 2018, 31–34.

70 See Lamacraft 1939, 218–220 and Fig. 2 (= MS. A).

71 See https://bodmerlab.unige.ch/fr/constellations/papyri/barcode/1072205347 (accessed on 1 March 2023).

37),[73] and P.Bodmer XXI (CLM 38).[74] The same pattern has emerged from the direct examination of Barcelona, Arxiu Històric de la Companya de Jesús a Catalunya, P. Palau Ribes 181–183 (CLM 3956), and P. Theol. 51 and 53–60 in the Papyrussammlung der Universität zu Köln.[75] Szirmai's drawing of the fold pattern of Barcelona, Arxiu Històric de la Companya de Jesús a Catalunya, P. Palau Ribes 181–183 seems to contradict this observation, since he drew the sewing structure as periodic and with double stitches between each pair of sewing stations.[76] Szirmai has affirmed that he based the drawing on Coptologist Hans Quecke's description of the manuscript; however, Quecke has described the sewing as follows:

> Es läuft nämlich jeweils zwischen den beiden unteren und den beiden oberen Einstichen ein Faden im Inneren der Lage. […] Es befanden sich also im Lageninneren jeweils zwei 4 cm lange Fadenstückchen, die die Einstiche des unteren und des oberen Paares verbanden.[77]

Therefore, he describes the sewing with a periodic fold pattern and one stitch between each pair of sewing stations. Thus, the photograph, taken during my first-hand examination of Barcelona, Arxiu Històric de la Companya de Jesús a Catalunya, P. Palau Ribes 181–183, corresponds to Quecke's description (Fig. 7), but not to Szirmai's drawing.[78]

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72 See https://bodmerlab.unige.ch/constellations/papyri/barcode/1072205355 (accessed on 1 March 2023).

73 See https://bodmerlab.unige.ch/constellations/papyri/barcode/1072205348 (accessed on 1 March 2023).

74 For the leaves kept at the Fondation Martin Bodmer see Cologny, Fondation Martin Bodmer, P.Bodmer XXI at https://bodmerlab.unige.ch/constellations/papyri/barcode/1072205359 and for those kept at the CBL see Dublin, CBL, Cpt 2019.8, https://viewer.cbl.ie/viewer/image/Cpt_2019_8/1/LOG_0000/ (accessed on 1 March 2023).

75 The digitised manuscripts in Cologne, are available at https://papyri.uni-koeln.de/features/tura (accessed on 1 March 2023).

76 Szirmai 1999, 21, Fig. 2.3d.

77 'There is a thread running inside the centrefold respectively between the two lower and the two upper sewing stations. […] So there were two 4 cm long pieces of thread inside the centrefold, connecting the sewing stations of the lower and the upper pair' (Quecke 1984, 11; translation mine).

78 As Quecke notes, the sewing is broken and the quires are loose (Quecke 1984, 10). Therefore, it cannot be ruled out that fragments of thread may have been lost. However, it is unlikely that this happened systematically in each quire, leaving only one length per pair of sewing stations.

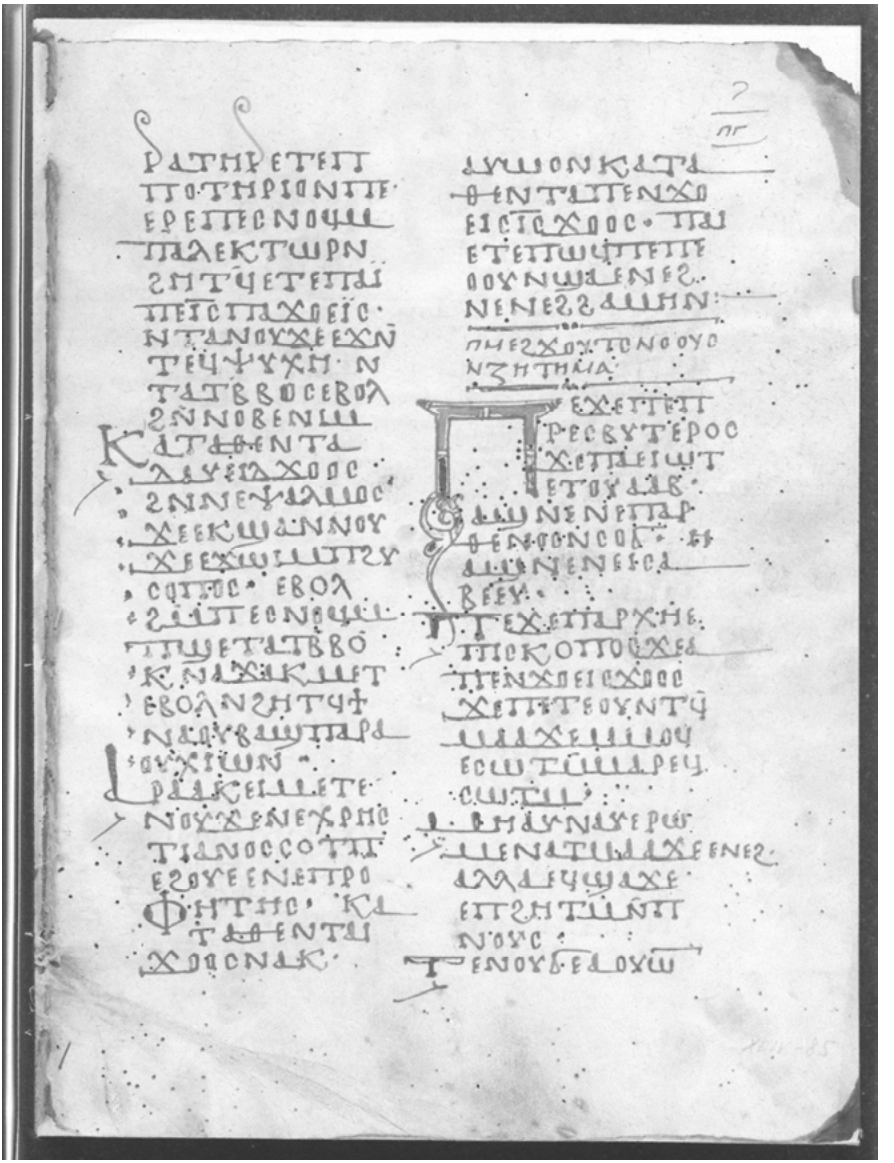

Fig. 5: Original sewing on four sewing stations, with continuous fold pattern and single thread length of New York, NY, Morgan Library and Museum, M605 (CLM 255). Washington, DC, The Institute of Christian Oriental Research (ICOR) Library, CODD. Copt. Tom.XIV M.575 (K.11), Pl. 85

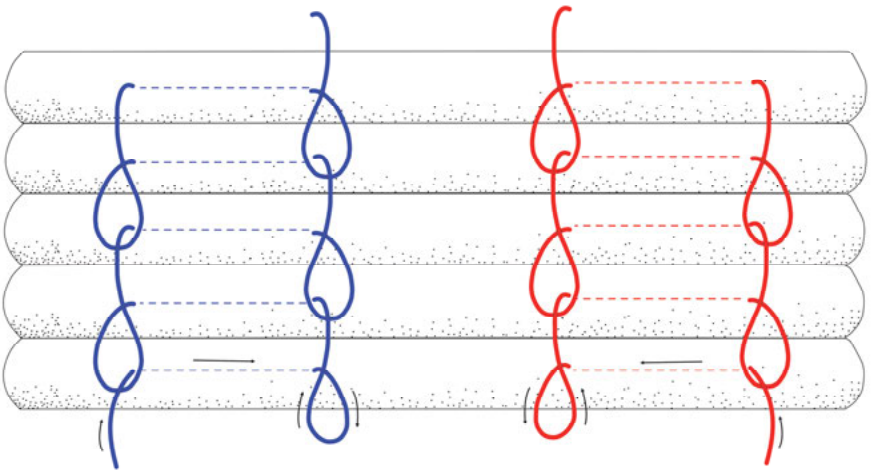

Fig. 6: Analytical drawing of a Coptic codex sewn on four sewing stations (two pairs) with a single thread between each pair.

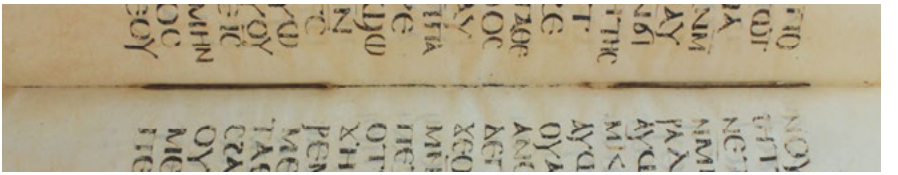

Fig. 7: Periodic fold pattern of a Coptic codex sewn on four sewing stations (two pairs) with a single thread between each pair. Barcelona, Arxiu Històric de la Companya de Jesús a Catalunya, P. Palau Ribes 181–183 (CLM 956) / © Arxiu Històric de la Companya de Jesús a Catalunya.

The difference between the Ethiopian and Coptic techniques can also be appreciated from a spine view of the codices, where the appearance of the 'chains' resulting from sewing is distinct. Whereas the Ethiopian chain-stitch takes on a distinct 'chevron' pattern on the spine of the codex (Fig. 8), the Coptic does not (Fig. 9).

Lastly, to conclude the comparison of Coptic and Ethiopian sewing techniques through the fold of the quires, it can be mentioned that both Ethiopian and Coptic bookbinding feature book structures in which the sewing is not intended to connect one quire to another. This is obviously the case of those codices formed by one quire, but also of multi-quire codices where each quire is sewn independently.

Fig. 8: Chain-like pattern on the spine of an Ethiopic codex. Grottaferrata, Biblioteca statale del Monumento Nazionale di Grottaferrata, Crypt. Aet. 7.

Fig. 9: Chain-like pattern on the spine of a Coptic codex. Cologny, Fondation Martin Bodmer, P.Bodmer XVI (CLM 35).

In the Coptic binding of single-quire codices, the quire is attached directly to the cover by means of tackets.[79] The bindings of the Gnostic codices discovered in 1945 near the village of Nag Hammadi are probably the most famous examples.[80] All but one of the eleven codices preserving the binding consist of a single quire attached directly to the cover with two leather tackets. Each lace passes through two holes pierced in the centrefold, and the leather cover is lined

79 For a list of single-quire codices, see Turner 1977, 58–61. The presence of single-quire codices in Ethiopian manuscript culture is mentioned, for example, in Nosnitsin 2016, 82 and Balicka-Witakowska et al. 2015, 171.

80 The bibliography on the Nag Hammadi codices and their discovery is vast. As a starting point for the study of the bindings, see Miller and Spitzmueller 2018; Robinson 1975; and Szirmai 1999, 7–14.

with layers of papyrus sheets. These bindings appear to be finely crafted artefacts, as indicated also by the presence of decorations drawn in ink and blind-tooled on their covers.

Tackets can serve as temporary devices while the manuscript waits to receive a permanent binding. For example, in the Ethiopian manuscript tradition, the quires are formed by holding the leaves of the quires together by means of tackets, piercing the quires at the head and tail, which are cut and removed as the codex receives the definitive binding.[81] Petersen has noted that Coptic quires may have been similarly prepared for their definitive sewing. He has observed that the quires of codices M581 (CLM 232), M595 (CLM 243), and M604 (CLM 254) at the Morgan Library and Museum in New York feature two different sets of sewing holes, where one could have served as a temporary sewing of the quires.[82]

However, these simple structures may also have been definitive, and in this case, they are provided with protective material as a cover. In the Ethiopian tradition, a single or a few quires can be secured directly to a parchment or leather cover. The quires can be attached to it by means of tackets, passing through matching holes in the centrefold and the cover, and passing over the head and/or tail of the quires.[83] Otherwise, the quires can be attached to the cover with quick sewing, like running stitches.[84] Furthermore, in the Coptic tradition, there are examples of economic bindings that, despite not being temporary, make use of quick sewing techniques and less expensive materials, often reused. This is the case, for example, of the booklet P. Heid. Inv. Kopt. 686 in the Heidelberger Papyrussammlung, which contains the praise of the Archangel Michael and rituals for protection on a parchment palimpsest.[85] It is part of a kind of booklet produced and used by practitioners who used to travel from village to village, making their income performing 'magical', oracular rituals. The binding consists of two loops of leather that directly pierce the leaves at four points, two at the head and two at the tail, to fix them to the cover. The simple nature of the binding indicates that the book was not intended for display.

81 For a description of assembling the quires and further bibliography, see Balicka-Witakowska et al. 2015, 159.

82 Petersen 2021, 16.

83 See, for example, London, British Library, EAP 286/1/1/114, https://eap.bl.uk/archive-file/EAP286-1-1-114 (accessed on 1 March 2023).

84 See, for example, London, British Library, EAP 526/1/89, https://eap.bl.uk/archive-file/EAP526-1-89 (accessed on 1 March 2023).

85 See Heidelberg, Universität Heidelberg, Heidelberger Papyrussammlung, P. Heid. Inv. Kopt. 686, https://doi.org/10.11588/diglit.39754.

5 Final remarks

This article started by noting that the term 'Coptic' is often used to refer to the Ethiopian sewing technique. The misleading use of the term stems from the fact that historical Ethiopian bindings have characteristics that correspond to modern Coptic-style book structures: namely, the board attachment is an integral part of chain-stitch sewing. However, these modern structures may not be conceived as historically accurate, but only as bindings that meet specific aesthetic standards. For this reason, modern bindings created for aesthetic purposes must be considered separately from reproductions of historical bindings. Furthermore, historical Ethiopian and Coptic bindings are different, therefore, to avoid misleading interpretations, it would be better to speak separately of modern bindings inspired by the Ethiopian or the Coptic technique.[86]

Yet the term 'Coptic' is also used in some catalogues to describe the Ethiopian sewing technique. This inappropriate label has its roots in an outdated idea of the similarity between Coptic and Ethiopian binding that has been assimilated by technical jargon and persists to some extent in the literature. Indeed, in the early days of bookbinding studies, distinguished scholars supported the theory of similarity between ancient Coptic and modern Ethiopian binding traditions. The theory was particularly plausible given the existence of points of contact between the sewing techniques, the apparent stability of Ethiopian bookbinding, and the fact that Ethiopian book production was linked to a religious sphere that formally depended on the Coptic Church until the mid-twentieth century.

The Coptic binding technique was considered the origin of Ethiopian bookbinding *and* all other traditions. This Coptic influence would extend as far as northern Europe.[87] Quite significant in this regard is Geoffrey D. Hobson's statement on Coptic bindings:

86 As proposed in the video tutorial Ethiopian *Two-Needle Binding // Adventures in Bookbinding*, which was uploaded on YouTube on 19 February 2022. The author, aware of the terminological problem, accurately states that he will show the making of 'a modern binding based on the traditional Ethiopian binding', often named 'two-needle Coptic binding'. He then explains why he thinks that 'this is not the best name to use and unfair on the Ethiopian binding tradition'. See https://youtu.be/Nvxvq6AlWvY (accessed on 1 March 2023).

87 For the Coptic influence on the eighth-century gospel found in the coffin of Saint Cuthbert, see van Regemorter 1949 and Powell 1956.

> The interest justly claimed by their antiquity is greatly increased by the fact that they are the source of all other decorated bindings, whether European or Asiatic.[88]

However, it should be noted that the Coptic binding technique has been credited as the forerunner of all other binding traditions because Egypt, with its favourable climatic conditions, provided specimens of early bindings that have not been preserved elsewhere. Georgios Boudalis has clarified that the influence of Coptic bindings must be reconsidered in light of the presence of physical, literary, and iconographic evidence that compensates for the absence of late antique bindings in areas outside of Egypt. Furthermore, based mainly on the iconographic evidence, Boudalis argues that the characteristics of the bindings believed to corroborate the influence of the Coptic technique are not specific to this tradition, but were rather shared throughout the Mediterranean basin and far beyond.[89]

Moreover, a comparative analysis of Coptic and Ethiopian bindings cannot disregard the fact that Ethiopian manuscripts dated before the thirteenth century are rare, and even those preserved were often reworked and repaired. Furthermore, evidence shows that the theory under which Ethiopian bindings remained unchanged for centuries must be reconsidered, and the stability of Ethiopian binding techniques over time cannot be taken for granted. Therefore, modern manuscript production in Ethiopia cannot be used to reconstruct the earliest binding technique, since it is impossible to determine the extent to which it has been preserved today.

The most obvious point of contact between Coptic and Ethiopian binding technique is found in structures with four sewing stations sewn with independent threads. When the sewing takes place on two pairs of stations, the resulting fold pattern is periodic in both Ethiopian binding and Coptic. However, the Coptic sewing technique differs from the Ethiopian in that only one thread length runs between the pairs of sewing stations.

Furthermore, in the Coptic tradition, there is evidence of structures sewn all-along on four sewing stations with one thread length between the stations, and it is possible to switch between continuous and periodic fold patterns with-

88 Hobson 1938, 206.

89 See Boudalis 2017. However, it might be imprecise to use the suggested term 'Early Christian bindings' to refer to late antique binding as a whole, since it is unlikely that the very same decorative and binding techniques were shared by the variety of societies that populated the Mediterranean basin. Instead, they likely all adopted the general characteristics depicted in the iconography, but detailed them in their own way. Moreover, it is not certain that all bindings had a 'Christian' origin.

in the same codex – characteristics that are utterly unrelated to the Ethiopian binding technique.

To conclude, the comparative analysis of the sewing technique shows that Coptic and Ethiopian sewing technique belong to distinct traditions. Therefore, it seems improper and misleading to use the term 'Coptic chain-stich' to describe the Ethiopian sewing. It would be more accurate to speak of Coptic and Ethiopian chain-stitch as two separate entities, also admitting that many aspects of both traditions remain obscure to this day and await dedicated research, which may, however, be impeded by the state of preservation of the original specimens.

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References

Abbadie, Antoine d' (1859), *Catalogue raisonné de manuscrits éthiopiens appartenant à Antoine d'Abbadie*, Paris: Imprimerie impériale.

Adam, Paul (1914), 'Beiträge zur Entwicklung der frühislamitischen Einbände', *Archiv für Buchbinderei*, 14/7: 90–97.

Balicka-Witakowska, Ewa (2007), 'Manuscripts: Preparation of Manuscripts', in Siegbert Uhlig (ed.), *Encyclopaedia Aethiopica*, vol. 3, Wiesbaden: Harrassowitz Verlag, 749a–752a.

Balicka-Witakowska, Ewa, Alessandro Bausi, Claire Bosc-Tiessé and Denis Nosnitsin (2015), 'Ethiopic Codicology', in Bausi et al. 2015, 154–174.

Bausi, Alessandro (2008), 'La tradizione scrittoria etiopica', *Segno e Testo*, 6: 507–557.

Bausi, Alessandro (2011), 'The "True Story" of the Abba Gärima Gospels', *Comparative Oriental Manuscript Studies Newsletter*, 1: 17–20.

Bausi, Alessandro (2015), 'Ethiopic Manuscripts', in Bausi et al. 2015, 46–49.

Bausi, Alessandro, Pier Giorgio Borbone, Françoise Briquel-Chatonnet, Paola Buzi, Jost Gippert, Caroline Macé, Marilena Maniaci, Zisis Melissakis, Laura Emilia Parodi, Witold Witakowski and Eugenia Sokolinski (eds) (2015), *Comparative Oriental Manuscript Studies: An Introduction*, Hamburg: Tredition.

Bausi, Alessandro, Michael Harrower and Ioana A. Dumitru (2020), 'The Gəʿəz Inscriptions From Beta Samāʿti (Beta Samati)', *Bibliotheca Orientalis*, 77: 34–56.

Bosch, Gulnar K., John Carswell and Guy Petherbridge (1981), *Islamic Bindings & Bookmaking: A Catalogue of an Exhibition in the Oriental Institute Museum, University of Chicago, May 18–August 18*, Chicago: Oriental Institute, University of Chicago.

Boudalis, Georgios (2017), 'The Bindings of the Early Christian Codex: Clarifying the Coptic Contribution to Bookbinding Structures', in Nataša Golob and Jedert Vodopivec Tomažič (eds), *Bookbindings. Theoretical Approaches and Practical Solutions* (Bibliologia Elementa ad librorum studia pertinentia, 45), Turnhout: Brepols.

Bozzacchi, Giampiero (2000), *Censimento dei dati materiali dei codici etiopici della Sezione Orientale della Biblioteca dell'Accademia Nazionale dei Lincei e Corsiniana*, typescript, Rome: *s.n.*

Bozzacchi, Giampiero (2001), 'La legatura etiopica', *Beni culturali: tutela e valorizzazione*, 15/6: 47–53.

Brown, Michelle P. (2006), 'Spreading the Word', in Michelle P. Brown (ed.), *In the Beginning: Bibles Before the Year 1000*, Washington, DC: Freer Gallery of Art and Arthur M. Sackler Gallery, 45–76.

Bull, William (1987), 'A 17th Century Ethiopic Bookbinding', *The Abbey Newsletter*, 11/3: 44a–45b.

Buzi, Paola (2014), *La chiesa copta. Egitto e Nubia* (Teologia, 40), Bologna: ESD.

Capon, Lester (2008), 'Extreme Bookbinding – A Fascinating Preservation Project in Ethiopia', *Skin Deep*, 26: 2–11.

Cockerell, Douglas (1977), 'Ethiopian Binding', *Designer Bookbinders Review*, 10: 5–9.

Dal Sasso, Eliana (2022), 'Describing Ethiopian Bookbinding in TEI', *Journal of the Text Encoding Initiative*, <DOI: 10.4000/jtei.3790>.

Delamarter, Steven and Demeke Berhane (2007), *A Catalogue of Previously Uncatalogued Ethiopic Manuscripts in England: Twenty-Three Manuscripts in the Bodleian, Cambridge*

University and John Rylands University Libraries and in a Private Collection (Journal of Semitic Studies Supplement, 21), Oxford: Oxford University Press.

Delamarter, Steve, Marilyn Heldman, Jeremy R. Brown and Sara Vulgan (2014), *Ethiopian Scribal Practice 7: Plates for the Catalogue of the Ethiopic Manuscript Imaging Project* (Ethiopic Manuscripts, Texts, and Studies, 14), Eugene, OR: Pickwick Publications.

Delamarter, Steve and Melaku Terefe (2009), *Ethiopian Scribal Practice 1: Plates for the Catalogue of the Ethiopic Manuscript Imaging Project* (Ethiopic Manuscripts, Texts, and Studies, 2), Eugene, OR: Pickwick Publications.

Di Bella, Marco and Nikolas Sarris (2014), 'Field Conservation in East Tigray, Ethiopia', in James Matthew Driscoll (ed.), *Care and Conservation of Manuscripts 14. Proceedings of the Fourteenth International Seminar Held at the University of Copenhagen 17th–19th October 2012*, Copenhagen: Museum Tusculanum Press, 271–307.

Getatchew Haile, Melaku Terefe, Roger M. Rundell, Daniel Alemu and Steve Delamarter (2009), *Catalogue of the Ethiopic Manuscript Imaging Project. Volume 1: Codices 1–105, Magic Scrolls 1–134* (Ethiopic Manuscripts, Texts, and Studies Series, 1), Eugene, OR: Pickwick Publications.

Gnisci, Jacopo, Sebastian Brock, David Appleyard, Sean M. Winslow, Steve Delamarter, Siam Bhayro, Antonella Brita, Girma Getahun and Dan Levene (2019), *Treasures of Ethiopia and Eritrea in the Bodleian Library, Oxford*, ed. Jacopo Gnisci (Manar al-Athar Monograph, 5), Oxford: Manar al-Athar / University of Oxford.

Gori, Alessandro, Anne Regourd, Jeremy R. Brown and Steve Delamarter (2014), *A Handlist of the Manuscripts in the Institute of Ethiopian Studies, II: The Arabic Materials of the Ethiopian Islamic Tradition* (Ethiopic Manuscripts, Texts, and Studies, 20), Eugene, OR: Pickwick Publications.

Greenfield, Jane (1991), 'Notable Bindings III: Ethiopic Ms 21: Manuscript Prayer Book', *The Yale University Library Gazette*, 65/3–4: 183–186.

Greenfield, Jane (1998), *ABC of Bookbinding: A Unique Glossary with over 700 Illustrations for Collectors & Librarians*, New Castle, DE: Oak Knoll Press.

Hobson, Geoffrey D. (1938), 'Some Early Bindings and Binders' Tools', *The Library: Transactions of The Bibliographical Society*, 19/2: 202–249.

Irigoin, Jean (1966), 'Berthe Van Regemorter (1879–1964)', *Scriptorium*, 20: 277–281.

Lamacraft, Charles T. (1939), 'Early Book-Bindings from a Coptic Monastery', *The Library: Transactions of The Bibliographical Society*, 20/2: 214–233.

Lindsay, Jen (2001), 'The Edfu Collection of Coptic Books', *The New Bookbinder*, 21: 31–51.

Lusini, Giafrancesco, Gioia Bottari, Jacopo Gnisci and Massimo Villa (2020), 'Grosseto, Museo Archeologico e d'Arte della Maremma – Museo Diocesano d'Arte Sacra: Tetraevangelo', *CaNaMEI Reports*, 1: 1–23.

Lusini, Giafrancesco, Gioia Bottari, Jacopo Gnisci and Massimo Villa (2021), 'Manoscritti Etiopici della città di Roma. La collezione Zanasi-Li Volsi', *CaNaMEI Reports*, 2: 1–39.

Lusini, Giafrancesco, Gioia Bottari, Jacopo Gnisci and Massimo Villa (2022), 'Savona, Archivio Storico Diocesano: Atti dei Martiri', *CaNaMEI Reports*, 3: 1–42.

McKenzie, Judith S. and Francis Watson (2016), *The Garima Gospels: Early Illuminated Gospel Books from Ethiopia, With Preface and Photographs by Michael Gervers and contributions by Matthew R. Crawford, Linda R. Macaulay, Sarah S. Norodom, Andres T. Reyes, and Miranda E. Williams* (Manar al-Athar Monograph, 3), Oxford: Manar al-Athar.

Melaku Terefe, Steve Delamarter and Jeremy R. Brown (2011), *Catalogue of the Ethiopic Manuscript Imaging Project, VII: Codices 601–654: The Meseret Sebhat Le-Ab Collection of*

Mekane Yesus Seminary, Addis Ababa. With a Foreword by Richard Pankhurst (Ethiopic Manuscripts, Texts, and Studies, 13), Eugene, OR: Pickwick Publications.
Meley Mulugetta (2016), *Ethiopian Church Archives Collections: Volume I, Ethiopian Manuscripts Digital Library, Codices 1–213* (The Harriet Tubman Series on the African Diaspora), Trenton, NJ: Red Sea Press.
Mellors, John and Anne Parsons (2002a), *Bookmaking in Rural Ethiopia in the Twenty-First Century: Scribes of South Gondar*, London: New Cross Books.
Mellors, John and Anne Parsons (2002b), *Bookmaking in Rural Ethiopia in the Twenty-First Century: Ethiopian Bookmaking*, London: New Cross Books.
Miller, Julia (2010), *Books Will Speak Plain. A Handbook for Identifying and Describing Historical Bindings*, Ann Arbor, MI: Legacy Press.
Miller, Julia (2018), 'A Model Approach', in *Meeting by Accident: Selected Historical Bindings*, Ann Arbor, MI: Legacy Press, 591–664.
Miller, Julia and Pamela Spitzmueller (2018), 'A Gift from the Desert: A Report on the Nag Hammadi Codices', in *Meeting by Accident: Selected Historical Bindings*, Ann Arbor, MI: Legacy Press, 420–589.
Nongbri, Brent (2018), *God's Library: The Archaeology of the Earliest Christian Manuscripts*, New Haven: Yale University Press.
Nosnitsin, Denis (2012), 'Ethiopian Manuscripts and Ethiopian Manuscript Studies. A Brief Overview and Evaluation', *Gazette du livre médiéval*, 58/1: 1–16.
Nosnitsin, Denis (2016), 'Lesser Known Features of the Ethiopian Codex', in Éloi Ficquet, Ahmed Hassen and Thomas Osmond (eds), *Movements in Ethiopia, Ethiopia in Movement. Proceedings of the 18th International Conference of Ethiopian Studies*, vol. 1, Addis Ababa: CFEE–IES / Los Angeles: Tsehai Publishers, 75–90.
Nosnitsin, Denis (2017a), 'Review of Meley Mulugetta, *Ethiopian Church Archives Collections: Volume I, Ethiopian Manuscripts Digital Library, Codices 1–213* (The Harriet Tubman Series on the African Diaspora), Trenton, NJ: The Red Sea Press, 2016', *Aethiopica*, 20: 293–297.
Nosnitsin, Denis (2017b), *Catalogue of Ethiopic Manuscripts. Codices Etiopici* (COMDC – Catalogue of Oriental Manuscripts, Xylographs etc. in Danish Collections, 11), Copenhagen: NIAS Press / Det Kongelige Bibliotek.
Nosnitsin, Denis and Maria Bulakh (2014), 'A Fragment of an Ancient Four Gospels Book (Lk 6:35–7:7): A Short Analysis', in Alessandro Bausi, Alessandro Gori and Gianfrancesco Lusini (eds), *Linguistic, Oriental and Ethiopian Studies in Memory of Paolo Marrassini*, Wiesbaden: Harrassowitz Verlag, 551–582.
Nosnitsin, Denis and Dorothea Reule (2021), *The Ethiopic Manuscripts of Dayr as-Suryān: A Catalogue* (Supplement to Aethiopica, 10), Wiesbaden: Harrassowitz Verlag.
Pankhurst, Richard (1984), 'Ethiopian Manuscript Bindings and Their Decoration', *Abbay*, 205–257.
Pankhurst, Richard (1992), 'The Last Bookbinder of Harar and His Tools', *The Book Collector*, 41/2: 215–219.
Paterson, Dan (2008), 'An Investigation and Treatment of an Uncommon Ethiopian Binding and Consideration of its Historical Context', *The Book and Paper Group Annual*, 27: 55–62.
Petersen, Theodore C. (2021), *Coptic Bookbindings in the Pierpont Morgan Library*, ed. Francisco H. Trujillo, Ann Arbor, MI: Legacy Press.
Powell, Roger (1956), 'The Stonyhurst Gospel: The Binding. Incorporating Parts of an Unpublished Article by the Late G. D. Hobson', in Christopher F. Battiscombe (ed.), *The Relics of Saint Cuthbert: Studies by Various Authors Collected and Edited by C. F. Battiscombe*, Oxford: The University Press, 362–375.

Quecke, Hans (1984), *Das Johannesevangelium Saïdisch. Text der Handschrift PPalau Rib. Inv.-Nr. 183 mit den Varianten der Handschriften 813 und 814 der Chester Beatty Library und der Handschrift M 569* (Papyrologica Castroctaviana, 11), Rome: Papyrologica Castroctaviana.

van Regemorter, Berthe (1949), 'La reliure des manuscrits du S. Cuthbert et de S. Boniface', *Scriptorium*, 3/1: 45–51.

van Regemorter, Berthe (1962), 'Ethiopian Bookbindings', *The Library*, 5th series, 17/1: 85–88, <DOI: 10.1093/library/s5-XVII.1.85>.

van Regemorter, Berthe (1967), 'La reliure byzantine', *Revue belge d'archéologie et d'histoire de l'art*, 36: 99–162.

Regourd, Anne (2019), 'Reliures mobiles d'Éthiopie (Harar)', *Support/Tracé*, 19: 67–76.

Regourd, Anne, Alessandro Gori, Jeremy R. Brown and Steve Delamarter (2014), 'Introduction to the Codicology: Papers, Ruling, and Bindings', in *A Handlist of the Manuscripts in the Institute of Ethiopian Studies, II: The Arabic Materials of the Ethiopian Islamic Tradition* (Ethiopic Manuscripts, Texts, and Studies, 20), Eugene, OR: Pickwick Publications, xlvii–xcii.

Robinson, James M. (1975), 'The Construction of the Nag Hammadi Codices', in Martin Krause (ed.), *Essays on the Nag Hammadi Texts. In Honour of Pahor Labib*, Leiden: E. J. Brill, 170–179.

Rose-Beers, Kristine (2023), 'The Threads That Bind: Evidence of the Early Codex Structures in Chester Beatty's Papyri', in Garrick Vernon Allen, Kelsie Gayle Rodenbiker, Anthony Philip Royle, Jill Unkel and Usama Ali Mohamed Gad (eds), *The Chester Beatty Biblical Papyri at Ninety: Literature, Papyrology, Ethics* (Manuscripta Biblica, 10), Berlin: De Gruyter.

Rustafjaell, Robert de (1909), *The Light of Egypt from Recently Discovered Predynastic and Early Christian Records*, London: Kegan Paul, Trench, Trübner & Co.

Sharp, John L. (1999), 'The Earliest Bindings with Wooden Board Covers: The Coptic Contribution to Binding Construction', in *International Conference on Conservation and Restoration of Archival and Library Materials (Erice, 22nd – 29th April 1996)*, 2nd edn, Palermo: Palumbo, 455–478.

Six, Veronika, Steve Delamarter, Getatchew Haile, Melaku Terefe, Jeremy R. Brown and Eric C. Young (2011), *Catalogue of the Ethiopic Manuscript Imaging Project. Volume 2: Codices 106–200 and Magic Scrolls 135–284* (Ethiopic Manuscripts, Texts, and Studies, 3), Eugene, OR: Pickwick Publications.

Spitzmueller, Pamela (1982), 'A Trial Terminology for Describing Sewing Through the Fold', *The Paper Conservator*, 7/1: 44–46.

Störk, Lothar and C. Detlef G. Müller (2003), 'Coptic Church', in Siegbert Uhlig (ed.), *Encyclopaedia Aethiopica*, vol. 1, Wiesbaden: Harrassowitz Verlag, 797b–801b.

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

Tomaszewski, Jacek and Michael Gervers (2015), 'Technological Aspects of the Monastic Manuscript Collection at May Wäyni, Ethiopia', in Maja Kominko (ed.), *From Dust to Digital. Ten Years of the Endangered Archives Programme*, Cambridge: Open Book Publishers.

Trujillo, Francisco H. (2021), 'A History of the Monograph', in Francisco H. Trujillo (ed.), *Coptic Bookbindings in the Pierpont Morgan Library*, Ann Arbor, MI: Legacy Press, i–xxi.

Turner, Eric G. (1977), *The Typology of the Early Codex* (Haney Foundation Series), Philadelphia: University of Pennsylvania Press.

Winslow, Sean Michael (2015), *Ethiopian Manuscript Culture: Practices and Contexts*, PhD thesis, University of Toronto.

Winstanley, Mark (2007), 'Tsbook - (Tigrinya for Good). An Ethiopian Odyssey – And the Repair of the Illuminated Pages of the 6th-century Gospel of Abba Garim', *Skin Deep*, 23: 2–10.

Zarzeczny, Rafał (2015), 'Su due manoscritti etiopici della Biblioteca Casanatense a Roma', in Rafał Zarzeczny (ed.), *Aethiopia fortitudo ejus: Studi in onore di monsignor Osvaldo Raineri in occasione del suo 80° compleanno* (Orientalia Christiana Analecta, 298), Rome: Pontificio Istituto Orientale, 501–537.