

The music theory booklet Balliol 173A, fols. 74r–81v: scribal organisation of an early medieval theory miscellany

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ABSTRACT. *Using evidence of the quality of vellum, fascicle structure, scribal hands and illustrations, this article argues that the first fascicle of the music portion of Oxford, Balliol College, 173A (fols. 74–81) is a self-standing booklet, perhaps created to teach a scribe the basics of music theory and how to arrange text while leaving space for illustrations or examples. A new fascicle structure of the gathering is proposed that accounts for a previously unrecognised missing folio. An analysis of the contents of the gathering demonstrates that the theory booklet is a compilatio, with portions of the Musica disciplina (or its sources) acting as a frame to start and end the booklet, with other works (Pseudo-Jerome, Isidore of Seville and Cassiodorus) inserted in between. The final folios are completed with a number of small tractatuli, including the brief dialogue Diapason quid est? The contents of both the booklet and the entire music codex are closely paralleled in one of the smaller manuscripts collected into Oxford, St John’s College 188 and also Cambridge, Trinity College R.15.22. While it will be ever easier to study digital images of manuscripts and to create critical editions of well-defined texts, this article argues for the continuing importance of codicological study of manuscripts in situ to coordinate the placements of texts within the structure of codices.*

Oxford, Balliol College, 173A is a codex created sometime in the fifteenth century that combines two earlier codices: a collection of works of Aristotle copied in the late thirteenth century (fols. 1–73) and a collection of early music theory copied in the twelfth or thirteenth century (fols. 74–119; [Table 1](#)).¹ The first music fascicle (fols. 74–81) stands apart from the rest of the music portion in several ways: it has different handwriting from the rest of the codex; the gathering ends with a blank verso folio which could have served as the back cover of a small booklet; and the gathering features elaborate illustrations found nowhere else in the collection. Taken together, the evidence suggests that this gathering represents a self-standing booklet that circulated

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¹ Christian Meyer, Michel Huglo and Nancy C. Phillips, *The Theory of Music. Manuscripts from the Carolingian Era up to c. 1500 in Great Britain and in the United States of America: Descriptive Catalogue*, RISM B/III/4 (Munich, 1992), 99–102.

Table 1. Contents of Balliol 173A

Quire	Fols.	Contents
I ¹²	1–12	Aristotle, <i>Posterior Analectics</i> (to 40r)
II ¹²	13–24	
III ¹²	25–36	
IV ¹²	37–49	Avicena, <i>Super libro celi et mundo</i> (40v–49r)
V ¹²	50–61	Fragment of Aristotle, <i>Ethics</i> (50r–73v)
VI ^{8 (-1)}	62–73	
VII ^{10 (-2)}	74–81	Music Theory Booklet (see Table 3)
VIII ⁸	82–89	Guido, <i>Micrologus</i> (glossed) (to 91v)
IX ⁸	90–97	Guido, <i>Regulae rhythmicae</i> (91v–94v)
		Guido, <i>Prologus in antiphonarium</i> (94v–96r)
		Guido, <i>Epistola ad Michaellem</i> (96r–100r)
X ⁸	98–105	Pseudo-Odo, <i>Dialogus de musica</i> (100r–106r)
XI ⁸	106–113	Berno, <i>Prologus in tonarium</i> (106r–119v)
XII ⁸	114–119	

independently before first being bound together with the other music items, and then later with the works of Aristotle.

Following a consideration of music theory fragments, *compendia* and booklets, this article proposes that fols. 74–81 of Balliol 173A is the work of a copyist learning the rudiments of music theory terminology. Such a booklet would have been useful for the copyist and/or other scribes both as an exemplar of their copying and as a reference for learning musical terms. This represents an audience for music writing often overlooked in the history of music theory – the scribes themselves. The users of this booklet may not have been interested in learning theory as a philosophical or learned subject, nor interested in performing or composing music. Rather, they needed to understand the music terminology they were learning to copy.

The contents of both the booklet on fols. 74–81 and the entire music portion are closely paralleled in one of the smaller manuscripts collected into Oxford, St John's 188 and also related to Cambridge, Trinity College R.15.22, which are summarised in a brief appendix at the end of the article. The three manuscripts demonstrate not only a body of similar texts, but also similar editing and arrangements of the texts.

Fragments, *Tractatuli*, *Compendia* and booklets

Fragments and *Tractatuli*

Many music theory codices contain short fragments of longer works – portions of treatises that exist in larger, complete forms in other sources. Other items commonly copied in these miscellaneous groups are short works, often referred to as *tractatuli*, that are complete in themselves and appear in the same length in other sources (i.e., they

are not portions of larger works). Some of the topics of these short works are counterpoint, organology, monochord divisions and definitions of terms.² Diagrams and explanations of the Greater Perfect System are common self-standing items that appear in these collections well into the fifteenth century, even though by the eleventh century the range of notated music had exceeded that used by the Greeks.

The presence of a collection of fragments and *tractatuli* in a large codex usually marks a place in the copying process where a few folios are free after the major treatises have been completed – often, but not always, at the conclusion of a fascicle. An example of such a collection in the middle of a codex is Cambridge, Trinity College, O.9.29. Seven quires of eight bifolios were used to copy John of Tewkesbury's *Quatuor principalia musice*, ending on fol. 53r – the middle of the seventh quire. Although the codex continues to fol. 95 with works of Guido of Arezzo and Pseudo-Odo, those exemplars were either not ready to copy on to fol. 53v or the codex was assembled after the copying of the *Quatuor principalia* because the scribe used the remaining leaves in the quire (fols. 53v–56v) to copy several short works including the notes of the Greater Perfect System and a short counterpoint treatise. Guido's *Micrologus* begins at the start of a new quire (fol. 57r) and his works form the bulk of the codex to its conclusion without the addition of another *tractatulus* or fragment.

Compendia

Compendium is often used as a general term for any random collection of works that vary in size from a large codex to a small booklet.³ Short *compendia* are often collections meant to fit a brief amount of blank space available in the copying process at the end of a quire. In a few cases, however, these *compendia* are transmitted between sources in the same in the same manner as a treatise by a single author. The *Lexicon musicum Latinum medii aevi* (*LmL*) of the Bayerische Akademie der Wissenschaften lists only eight items under the sigla 'COMPIL', for *compilatio*. These include items grouped as compilations in 1864 by Adrian de la Fage in *Essais de diphthéographie musicale*.⁴ Christian Meyer titled one *compendium* as 'Anonymous MK' for its appearance in manuscripts now housed in Munich and Kassel.⁵

² Christian Meyer and Shin Nishimagi have edited individual fragments and *tractatuli*, creating critical editions of several short works in *Tractatuli: Excerpta et Fragmenta de Musica S. XI et XII*, Atelier de Recherche sur les Textes Médiévaux (Turnhout, 2011).

³ On medieval terminology for collections of works, see Marika Teeuwen, 'Compilare, compilatio, compilator', in *The Vocabulary of Intellectual Life in the Middle Ages*, Études sur le vocabulaire intellectuel du Moyen Âge 10 (Turnhout, 2003), 237–9.

⁴ 'Compilatio cod. Parisini lat. 10509' (*Thesaurus Musicarum Latinarum* or TML sigla: ANOTRA; *LmL*: Compil. Paris. II) and 'Compilatio cod. Parisini lat. 7211' (TML: ANOFRA2; *LmL*: Compil. Paris. I) in Adrian de la Fage, *Essais de diphthéographie musicale* (Paris, 1864; reprint Amsterdam, 1964), 72–3 and 191–3.

⁵ Christian Meyer, 'Aus der Werkstatt des Kompilators', in *Quellen und Studien zur Musiktheorie des Mittelalters*, vol. 2, ed. Michael Bernhard, Bayerische Akademie der Wissenschaften, Veröffentlichungen der Musikhistorischen Kommission 13 (Munich, 1997), 10–12. Another collection (not included in the *LmL*) appears in Paris, BnF lat. 7369, fols. 67r–75r and Florence, Biblioteca

Booklets

While most medieval writing and music has been preserved in large, bound codices, it does not necessarily mean that all medieval writing was created to be preserved in this format. The term 'booklet' indicates a small collection of leaves (sometimes only one quire) that was not originally bound into a collection with a sturdy cover, but circulated and used as a quick reference work. While not all booklets are *compendia*, a variety of short theory fragments collected into a booklet would be useful in teaching music, particularly for introductory students, and few music theory booklets have been studied as self-standing teaching materials.⁶ Linda Page Cummins describes one such collection in Venice, Biblioteca del Museo Correr, MS 366, Part 4, fols. 425–56, a late fifteenth-century collection of theory she describes as 'the interests of a musician who was also a teacher and who chose material that he considered practical, organised in a way he intended to be useful.'⁷ The teacher's booklet was later bound into a composite volume of four manuscripts, totalling over 450 pages. Another example of a teaching booklet included in a larger collection was edited by Heinz Ristory as the anonymous *Compendium breve de proportionibus*, a short work on fifteenth-century mensural theory from Brussels, KBR, MS II 785, fols. 9v–11r, which Ristory states was created 'for the further education of students'.⁸

Many examples exist of writings about music, or musical works, which were created as small booklets and were either preserved in this format to modern times or can be clearly seen as having had circulated in an unbound form before later being collected into a bound book. Booklets for music notation have been studied by Charles Hamm on Du Fay (who used the phrase 'fascicle manuscript'),⁹ Andrew Tomasello on Ivrea, Biblioteca Capitolare, MS CXV (115),¹⁰ Mark Everist on Paris, BnF lat.

Medicea Laurenziana, Plut. 29.48, fols. 52r–56r includes treatment of Greek theory, proportions, monochord divisions, modes, scales, intervals and notation. C. Matthew Balensuela, *Ars cantus mensurabilis mensurata per modos iuris: A New Critical Text and Translation*, Greek and Latin Music Theory 10 (Lincoln, 1994), Appendix B, 269–72.

⁶ Thomas J. Mathiesen, 'Ars critica and Fata libellorum: The Significance of Codicology to Text Critical Theory', in *Music Theory and Its Sources: Antiquity and the Middle Ages*, ed. André Barbera (Notre Dame, 1991), 19–37.

⁷ Linda Page Cummins, 'Correr 336, Part 4: A New Compendium of Late Medieval Music Theory', *Philomusica on-line*, 5/1 (2006), <http://riviste.paviauniversitypress.it/index.php/phi/article/view/05-01-SG03/56> (accessed 11 January 2024); and Christian Meyer, *The Theory of Music. Manuscripts from the Carolingian Era up to c. 1500: Addenda, Corrigenda*, RISM B III 6 (Munich, 2003), 627–30.

⁸ *Compendium breve de proportionibus*, ed. Heinz Ristory, *Corpus Scriptorum de musica* 38 (Neuhausen, 1977), 16. See also Jan W. Herlinger, 'A Fifteenth-Century Italian Compilation of Music Theory', *Acta musicologica*, 53/1 (1981), 90–105.

⁹ Charles Hamm, 'Manuscript Structure in the Dufay Era', *Acta musicologica*, 34/4 (1962), 166–84. For a contrary view, see Margaret Bent, 'Some Criteria for Establishing Relationships between Sources of Late-Medieval Polyphony', in *Music in Medieval and Early Modern Europe*, ed. Ian Fenlon (Cambridge, 1981), 295–318.

¹⁰ Andrew Tomasello, 'Scribal Design in the Compilation of Ivrea Ms 115', *Musica disciplina*, 42 (1988), 73–100. See also Andrew Tomasello 'Science, Philosophy, Musicology, Tadpoles, and Frogs', *Revista de Musicología*, 4 (1993), 2421–36.

11266,¹¹ and James Grier (and others) on the transmission of Aquitanian *versaria* through *libelli* or little books.¹²

Outside of musicology, one of the leading scholars on booklets is Pamela Robinson, who studied early English manuscripts. In her seminal article, ‘The “Booklet”: A Self-Contained Unit in Composite Manuscripts’, she identified ten features used to identify a booklet. Of these features, Balliol 173A, fols. 74–81 stands apart from the rest of the codex in its different handwriting and illustrations, its different number of leaves to the quire, and how the final page is left blank (to serve as a back cover).¹³ Expanding on Robinson’s work, Ralph Hanna III, offered three more features to identify booklets. Balliol 173A, fols. 74–81 exhibit all of these: different quality of vellum, different sources and different subject matter from the rest of the codex.¹⁴

The structure of the Balliol 173A booklet

The brief background on fragments, *tractatuli*, *compendia* and booklets provides a context for considering fols. 74–81 in Balliol 173A and why it might have been an independent booklet before being bound into a larger codex. Neither Roger Mynors’s library catalogue of 1963 nor the Conservation Report done for a restoration of the MS in 2007 comment on the possible provenance of the codex.¹⁵ The RISM description, proposed an English origin based on the notation used in the tonary (fol. 112v) and the note ‘ex dono William Gray’ in the volume and proposed that the section after the booklet (fols. 82–119) was copied from London, BL add. 4915, a source not used in fols. 74–81 (reinforcing Hanna’s twelfth trait for identifying booklets). The present study follows RISM in assuming an English provenance from the twelfth to thirteenth centuries for the music gatherings of the codex. The construction of the booklet will be reviewed first (quality of vellum, fascicle structure, scribal hands and illustrations) followed by an analysis of the texts in the booklet and their arrangement.

Quality of vellum

The vellum used in this quire is of consistently poor quality with several flaws throughout the grouping such as holes (fol. 74) and missing corners (fol. 79). These holes were in place when the copying began (the words wrap around these imperfections),

¹¹ Mark Everist, ‘Music and Theory in Late Thirteenth-Century Paris – The Manuscript Paris, Bibliothèque Nationale, *fonds lat.* 11266’, *Royal Musical Association Research Chronicle*, 17 (1981), 52–64.

¹² James Grier, ‘The Stemma of the Aquitanian *Versaria*’, *Journal of the American Musicological Society*, 41/2 (1988), 250–88.

¹³ Pamela Robinson, ‘The “Booklet”: A Self-Contained Unit in Composite Manuscripts’, *Codicologica*, 3 (1980), 46–69.

¹⁴ Ralph Hanna, III, ‘Booklets in Medieval Manuscripts: Further Considerations’, *Studies in Bibliography*, 39 (1986), 108.

¹⁵ R.A.B. Mynors, *Catalogue of the Manuscripts of Balliol College Oxford* (Oxford, 1963), 176–7; and Oxford Conservation Consortium, ‘MS 173A *Aristotelica* and *Tractatus Musici*’ (2007), unpaginated. Images of Balliol 173A are used by permission and are also available at www.flickr.com/photos/baliolarchivist/albums/72157667650493204 (accessed 11 January 2024).

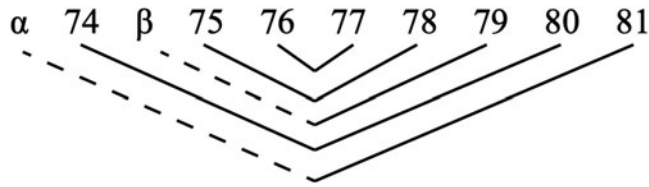


Figure 1. Proposed construction of booklet now Balliol 173A fols. 74–81.

indicating that the scribe was working with less-than-ideal materials. Holes appear in later quires of the music section as well (at fols. 83, 87 and 88). But, the number of holes in the velum decreases from the high number in the first music gathering to the end of the codex – the bifolios of this gathering are of the poorest quality in the codex, which would represent Hanna’s eleventh characteristic of booklets: variation in the quality of vellum.

Fascicle structure

The quire containing fols. 74–81 has caused some confusion in previous descriptions of the codex including Roger Mynors¹⁶ and the Conservation Report written for a restoration of MS 173A in 2007.¹⁷ Both manuscript descriptions noted the missing folio after fol. 74, which breaks in the middle of a sentence making the missing leaf obvious (labelled ‘fol. β’ in Figure 1). The binding stitching clearly appears between fols. 76 and 77, indicating that this bifolio was originally the centre of the gathering. Given the value of vellum, blank folios in a manuscript are noteworthy and often indicate some type of interruption in the copying process, such as a break in time between copying sections or the use of different sources.¹⁸ Rather than sewing in a single leaf (fol. 81) and leaving the verso blank, it is reasonable to propose that there was originally an entire bifolio consisting of the current fol. 81 and a now wanting folio (labelled ‘fol. α’ in Figure 1) serving as a front cover. It may have served as the pastedown for the original music theory collection and was lost when that codex was disassembled to be bound with the Aristotle works in the late fifteenth century.

The gatherings after fol. 81 comprise four quires of eight bifolios and a concluding gathering of six (as described in Table 1). These gatherings contain treatises of Guido and Pseudo-Odo along with a concluding tonary; they are copied without any blank folios or added short texts. The proposed fol. α and the description of the booklet quire as a grouping of ten bifolios would confirm Robinson’s seventh trait of booklets (number of leaves to the quire differ from other parts of codex), and the blank on fol. 81v

¹⁶ Mynors, *Catalogue of the Manuscripts*, 176–7. There is also an unfortunate typo in Mynors with two quires labelled ‘vi’ – the last quire of the Aristotle section and also the first quire of the music section.

¹⁷ ‘VII⁸ -1 (74–81) – second leaf was torn out and missing (before the numbering).’ Oxford Conservation Consortium, ‘MS 173A Aristotelica and Tractatus Musici’.

¹⁸ On blank folios in Greek sources, Mathiesen writes: ‘if there are blank folios between treatises, and especially between groups that recur, these groups were probably copied from separate sources’ (*Ars critica and Fata libellorum*, 37.)

coincides with her ninth trait (last page left blank). The blank, fol. 81v, does not appear to be noticeably soiled or rubbed beyond the use seen in the other folios (Robinson's sixth trait), which would indicate that it did not circulate as an independent booklet very long before being combined with the other quires in the codex.

Scribal hands

In the music portion of the codex, the leaves are uniform in size (175mm × 95 mm as given in RISM) using a single writing block (37 lines per page) with the exception of the concluding tonary, which uses the same page size, but in a three-column format. RISM identifies three copyists for the music portion of Balliol 173A: Hand A for fols. 74–81, Hand B for the rest of the theory treatises (fols. 82–106) and Hand C for the tonary (106–119). Hand A is notable for the rounder shaping of the letters and the wider spacing between letters and words than in the rest of the music codex. In particular, the shape of the 'a' in Hand A often features a slight serif to the left whereas in Hand B the 'a' more often ascends without a flourish. Conversely, the ligature of 're' in Hand A is smooth but Hand B adds a small flourish between the letters.¹⁹

Another hand, not cited in the RISM description, appears for only twelve lines beginning at the bottom of fol. 75r and continuing only for the first third of fol. 75v, which might be referred to as the 'Master Hand' (Figure 2). With darker ink and more elaborate flourishes than Hands A, B, or C this scribe also copied the text for the Greater Perfect System (if not the artwork) and appears only in this gathering. Of particular note is the elaborate ligature to lengthen the word 'doctoris' in order to align the right-hand margin while leaving space for an illustration to be added later. While it is impossible to know exactly why a better scribe suddenly appears at this point in the manuscript, perhaps it is because this section of the MS requires the text scribe to leave spaces for images that a later artist will fill in. If Hand A was a student scribe who was not matching the source text line-for-line (because of the holes in the vellum, the comparative spaciousness of his writing style, or for other reasons), it may not have been immediately clear to him how to break his text to make room for the images – a problem in many treatises with examples and diagrams added later in the production process.²⁰ Perhaps his mentor showed Hand A the solution to this problem and asked him to continue on his own – a learning curve he sometimes failed to master as seen in the crowded spacing on fol. 76v. The Master Hand appears only in the gathering of fols. 74–81, which supports Robinson's second trait used to identify a booklet – different handwriting in the section.

¹⁹ It may be that RISM's Hand C is actually the reappearance of Hand A later in the MS, but such speculation is beyond the scope of this study and does not affect the evidence that a single hand composed the booklet on fols. 74–81.

²⁰ C. Matthew Balensuela, "'Ut hec te figura docet'": The Transformation of Music Theory Illustrations from Manuscripts to Print', in *Bruges-Venice: Music in Two Urban Mosaics/Proceedings of the 17th International Musicological Congress, Louvain, August 2002*, 6th Yearbook of the Alamire Foundation, ed. Bruno Bouckaert and Eugène Schreurs (Neerpelt, 2008), 97–110.

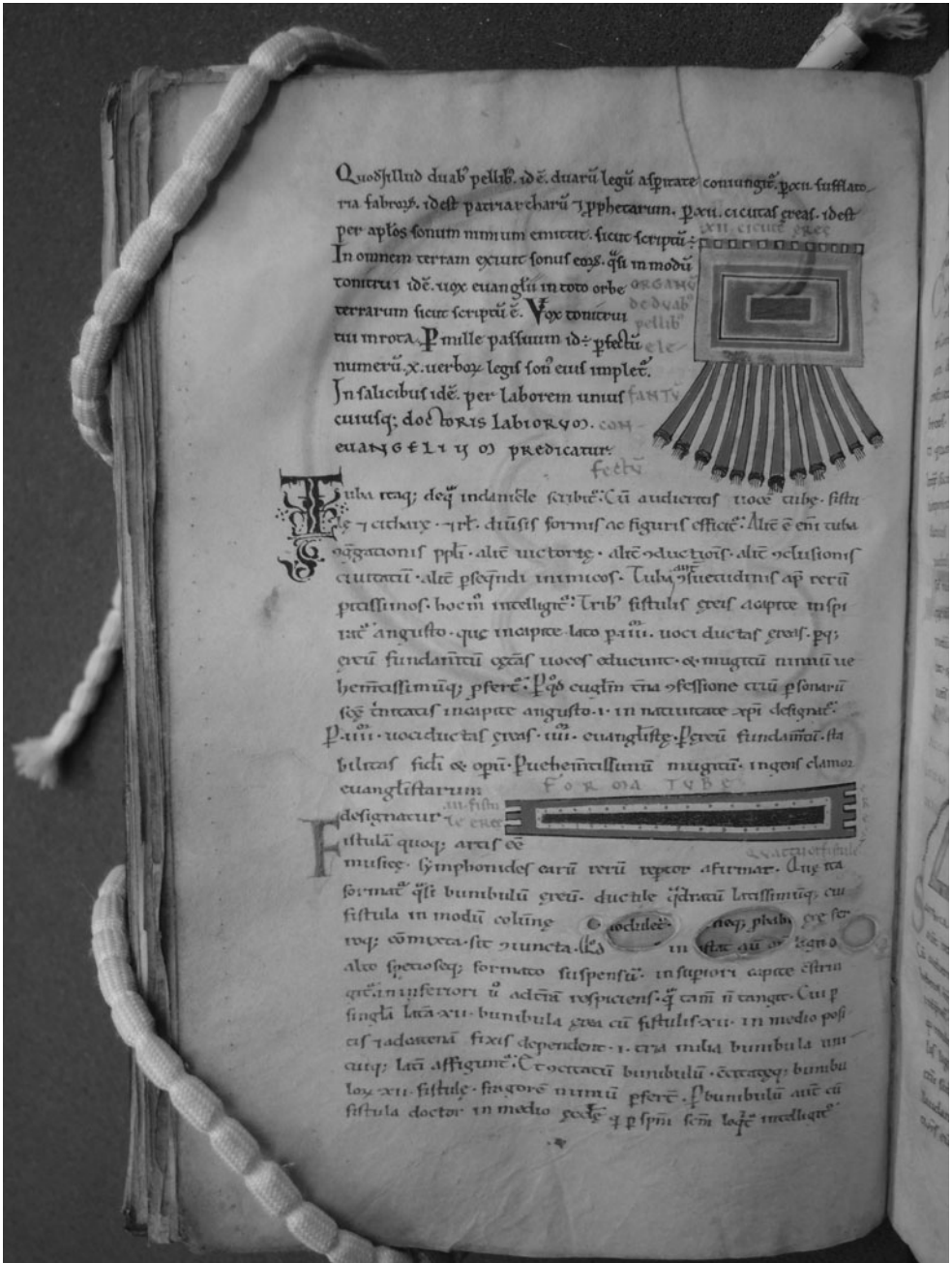


Figure 2. 'Master Hand' and illustrations, Balliol 173A, fol. 75v. Reproduced by kind permission of the Master and Fellows of Balliol College.

Illustrations

A unique characteristic of the gathering from fols. 74–81 is the inclusion of elaborate, colourful diagrams absent from the rest of the music section. This includes the representation of the Greater Perfect System on fol. 75r and the illustrations in the section on musical instruments from the Pseudo-Jerome epistle (also seen in [Figure 2](#)). While there are illustrations in later sections of the music codex, none are as elaborate or as colourful; the others use only black and red inks and do not include the blues and greens of the illustrations in the booklet. This agrees with Robinson's third trait. None of the illustrations following fol. 81 are as careful or skilfully done, which may indicate that the illustrator (as well as the scribe for this gathering) was learning the craft under a more accomplished master.

The content of the Balliol 173A booklet

If the preceding arguments are correct, then Hand A was given five bifolios (ten leaves) of less-than-ideal velum to copy a collection of music theory works. As a hypothesis, I propose Hand A was not the compiler who oversaw the layout of the gathering, but was following directions as part of a learning process (perhaps from the Master Hand). The work was created to be only a booklet of these bifolios so that fol. α was probably blank both recto and verso to serve as the front cover. Hand A then began on the current fol. 74r with four major writers to be included: materials collected by Aurelian of Réôme into the *Musica disciplina*, and works or selections of Pseudo-Jerome, Isidore of Seville and Cassiodorus. The texts in this section ([Table 2a](#)) include some of the earliest writers in Latin music theory discussing speculative topics. The sources are significantly different from the items in the rest of the music codex, which include Guido's *Micrologus*, *Regulae rhythmicae*, *Prologus in antiphonarium*, and *Epistola ad Michaelem* as well as the Pseudo-Odo *Dialogus de musica* and Berno's *Prologus in tonarium*, which are generally later and deal with practical aspects of music. These differences reflect Hanna's thirteenth traits of booklets.

Following these writers, the scribe and compiler still had most of fols. 80v–81r to be filled with brief items such as a discussion of the tetrachords in the Greater Perfect System and a dialogue on intervals, leaving fol. 81v blank as a back cover. Of the small items, which form the concluding *compendium* ([Table 2b](#)), those that can be named are later than Cassiodorus and Isidore. This indicates a useful trait of *compendia* – they allow for the insertion of newer, more recent teaching than the major writers in the body of the collection.

Aurelian (Part I)

The Balliol theory booklet begins with an excerpt from Aurelian's *Musica disciplina*.²¹ Aurelian's treatise exists in a number of versions which differ in content – specifically,

²¹ For ease of reference, the following discussion will refer to these excerpts as having come from Aurelian's complete treatise, although it is most likely that they come from the sources Aurelian expanded upon to create the *Musica disciplina*.

Table 2. Sources for booklet

a) Major sources for booklet (chronological)	
Cassiodorus, <i>Institutiones</i>	c.562
Isidore of Seville, <i>Etymologiarum</i>	c.560–636
Aurelian, <i>Musica disciplina</i>	mid-9th century
Pseudo-Jerome, <i>Epistola ad Dardanum</i>	late 9th century
b) Sources for concluding compendium in booklet (chronological)	
Hucbald, <i>De harmonica institutione</i>	early 10th century
Frutolfus of Michelsberg, <i>Breviarium et Tonarius</i>	mid-11th century

and he appears to have synthesised material from a general work on music with a detailed description of the emerging eight-mode system (often referred to as *De octo tonis*). In her critical edition of the work, Anna Morelli posits that the text of Aurelian in both Balliol MS and St John's 188 (a source which will be discussed in the Appendix) both derive from an unknown source which omitted *De octo tonis*.²²

In organising the Balliol booklet, the compiler divided the abbreviated source material into two parts that serve as a frame for the booklet (labelled Aurelian Parts I and II in Table 3). The first set of excerpts in the Balliol booklet begins with what is now Chapter I and the beginning of Chapter II of Aurelian's complete work; they include a general introduction to music (stories of music's power from antiquity and the Bible) and are themselves drawn from earlier sources (including Cassiodorus and Isidore).²³ The excerpt from Chapter II ends at line 9, just before Aurelian notes that the diapason is found in the Antiphon *Inclina Domine aurem tuam* in the complete version of the *Musica disciplina*. Following the omission of the rest of Chapter II, Chapters III to V are also absent from the Balliol booklet.

We might assume that Hand A continued his excerpts from Aurelian Chapter VI and/or Chapter VII on the now wanting 'fol. β ' both recto and verso. If so, the booklet may have contained a description of musical intervals and mathematical proportions (Chapter VI) and/or the Boethian distinction between a musician and a singer (Chapter VII).²⁴

²² Anna Morelli, *Il 'Musica Disciplina' di Aureliano di Réôme: Fondamenti teorico-disciplinari dell'ars musica nel IX secolo* (Udine, 2007), 17. See also Lawrence A. Gushee, 'The *Musica disciplina* of Aurelian of Réôme: A Critical Text and Commentary', 2 vols., Ph.D. diss., Yale University (1963); published edition as *Musica disciplina*, Corpus Scriptorum de Musica, 21 ([Dallas], 1975); AURMD and AURMDAP; Joseph Perry Ponte, III, 'Aureliani Reomensis, *Musica disciplina*: A Revised Text, Translation, and Commentary', 3 vols., Ph.D. diss., Brandeis University (1961); published edition as *The Discipline of Music [Musica disciplina]*, Colorado College Music Press Translations 3 (Colorado Springs, 1968), TML: AURMUSD.

²³ Charles M. Atkinson, *The Critical Nexus: Tone-System, Mode, and Notation in Early Medieval Music* (Oxford, 2009), 94.

²⁴ But if the compiler omitted Chapter III, where the three kinds of music are explained (music of the spheres, human music, and music of instruments), the distinction between the singer and the musician/philosopher may have also been omitted and only the partial continuation of Chapter VI appeared on the now wanting fol. β .

Table 3. Borrowings in Balliol 173A booklet

α	[missing]
74r–v	AURELIAN'S <i>MUSICA DISCIPLINA</i> (PART I) I: Praise of the Discipline of Music
74v	II: Concerning its Name and its Discoverers, and how the basic Proportions were discovered (Lines 1–9; to 28 omitted)
74v	VI: Music has an Intimate Relationship with Numbers (<i>from Boethius</i>) (lines 1–10 breaks in mid-sentence); to 43 omitted
	VII: What the Difference is between a Musician and a Singer
β	[missing]
75r	Greater Perfect System
75r–76v	PSEUDO-JEROME, <i>EPISTOLA AD DARDANUM</i> (Instruments)
76v–79r	ISIDORE, <i>ETYMOLOGIARUM</i> BOOK II, CHAPTERS 15–23 (<i>SENTENTIAE DE MUSICA</i>) XV. The Definition of Music XVI. The Inventors of Music XVII. The Power of Music XVIII. The Three Parts of Music (Harmonic, Rhythmic, Metric) IXX. The Three Divisions of Music XX. The First Division of Music: Harmonic XXI. The Second Division: Organic (Instruments) XXII. The Third Division of Music: Rhythmic XXIII. Musical Numbers
79r–v	CASSIODORUS <i>DE ARTIBUS AC DISCIPLINIS LIBERALIUM LITTERARUM</i> , CHAPTER V I. [Gaudentius and Other Founders] ^a II. [The Discipline of Music] III. [Musical References in Scripture] IV. [Parts of Music (Duple, Triple, Quadruple)] V. [The Three Parts of Music (Harmonic, Rhythmic, Metric)]
79v	AURELIAN'S <i>MUSICA DISCIPLINA</i> (PART II) VIII: Concerning the Eight Modes (Lines 1–21; to 46 omitted [zodiac])
79v–80r	XX: Melodies Composed by means of this Discipline that are Sung in The Church According to the Ordinance of the Previous Fathers (Lines 1–24; Lines 25 ['Explicitus liber de musica disciplina'] to 63 omitted)
80v	14 lines on tetrachords of the GPS (Source not determined) 3 lines on mode: Hucbald, <i>De harmonica institutione</i> (GS I:115) Four lines on the 'NOEANE': Frutolfus, <i>Breviarium</i> (Chapter XIV:III)
80v–81r	<i>Diapason quid est?</i>
81r	A list of the eight modes (Dorian...).

Pseudo-Jerome and Isidore

Whatever appeared on the posited fol. β , the first set of excerpts from Aurelian stops by fol. 75r for an extensive diagram of the Greater Perfect System. The importance of the Greater Perfect System as a musical construct for the compiler of the booklet is reinforced by the inclusion of a brief discussion of tetrachords in the concluding compendium (fol. 80r).

The booklet next presents two short music treatises. The *Epistola ad Dardanum* provides a speculative discussion of instruments from scripture and was traditionally assumed to be by St Jerome (d. 420), but currently is seen as an anonymous work of the ninth century.²⁵ The transmission of the work in its numerous sources is notable

²⁵ Reinhold Hammerstein, 'Instrumenta Hieronymi', *Archiv für Musikwissenschaft*, 16 (1959), 117–34, TML: HIERINST.

for its elaborate illustrations of allegorical instruments such as the organum, tuba, cithara, sambuca and timpanum. The relevance of the text and illustrations to actual instruments of the early Middle Ages, however, is negligible.²⁶

This is followed by the section on music from Isidore of Seville's *Etymologiarum*,²⁷ a source for some of the earlier passages from Aurelian's *Musica disciplina*. Isidore drew his ideas from Cassiodorus (who follows in the MS) and from Augustine of Hippo and presents general discussions of music as a liberal art.²⁸

Cassiodorus and Aurelian Part II

The compiler then included an extract from Cassiodorus and returned to the *Musica disciplina* to conclude the major treatises of the booklet. Cassiodorus's *Institutiones* was designed to train young monks in the basics of all the liberal arts, and his work presents more musical details than Isidore's, such as specifics on intervals and modes.²⁹ But the compiler included only the first half of the work and omitted the passages of Cassiodorus that are most basic to the understanding of musical structure. The section on intervals may have been covered on the now missing passages of Aurelian on fol. β or omitted due to the general avoidance of specific details of music structure in the Balliol booklet. Cassiodorus's listing of fifteen modes³⁰ was probably omitted as it conflicts with the excerpt from Aurelian Chapter XIII which gives eight modes.³¹ Isidore, however, cites fifteen tones as well, but merely gives the highest and lowest (Hyperlidian and Hypodorian, fol. 77v) rather than detailing each mode by name. This would have created a contradiction for a careful reader between the older fifteen-mode system and the newer eight-mode system, but not as noticeable as giving a complete list of fifteen modes in one section and then a list of eight modes in other sections. Given that half of Cassiodorus's work is omitted and that much of what is present merely repeats material in either Isidore and Aurelian, the decision to include Cassiodorus at all may be due to

²⁶ Calvin M. Bower, 'An 11th-century Italian "Gloss" on Cassiodorus: New Evidence Concerning Medieval Instruments', in *Festschrift für Horst Leuchtman zum 65. Geburtstag*, ed. Stephan Hörner and Bernhard Schmid (Tutzing, 1993), 69–94, at 69.

²⁷ Stephen A. Barney, W.J. Lewis, J.A. Beach, Oliver Bergoh with Murial Hall, *The Etymologies of Isidore of Seville* (Cambridge, 2006), 95–8; Wallace Martin Lindsay, ed., *Isidori Hispalensis episcopi Etymologiarum sive origium libri XX*, 2 vols. (Oxford, 1911), TML: ISIDEMU; William Oliver Strunk, and Leo Treitler, gen. eds., *Source Readings in Music History from Classical Antiquity through the Romantic Era*, rev. ed. (New York, 1998), 149–55; and Helen Dill Goode and Gertrude C. Drake, trans., *Cassiodorus: Institutiones, Book II, Chapter V and Isidore of Seville: Etymologies, Book III, Chapters 15–23*, Colorado College Music Press Translations 12 (Colorado Springs, 1980), 11–20.

²⁸ Don M. Randel and Nils Nadeau, 'Isidore of Seville', *Grove Music Online*, <https://doi.org/10.1093/gmo/9781561592630.article.13934> (accessed 20 September 2016).

²⁹ Cassiodorus, *Institutions of Divine and Secular Learning and On the Soul*, trans. James W. Halporn, *Translated Texts for Historians* 42 (Liverpool, 2004), 216–22; R.A.B. Mynors, ed., *Cassiodori Senatoris Institutiones* (Oxford, 1937; trans. 1946; TML: CASINST); Strunk and Treitler, gen. eds., *Source Readings in Music History*, 143–8; and Goode and Drake, trans., *Cassiodorus*, 1–10.

³⁰ Cassiodorus gives the modes as: Hypodorius–Dorius–Hyperdorius; Hypoastius–Iastius–Hyperastius; Hypophrygius–Phrygius–Hyperphrygius; Hypoaeolius–Aeolius–Hyperaeolius; Hypolydius–Lydius–Hyperlydius.

³¹ Authentic and Plagal forms of Protus, Deuterus, Tritus and Tretradius.

the desire by the compiler to include the important traditional writers on music as a liberal art and not because of any new, additional information the source adds to the collection.

The compiler returns to the materials of the *Musica disciplina* to give a short excerpt from what is now Chapter VIII on the eight modes.³² The compiler of the Balliol MS omits the more abstract and speculative ideas on the modes and their relationships to signs of the zodiac (VIII: 22–46). Morelli suggests that the next section of Aurelian's complete work, Chapters X–XIX (often referred to as *De octo tonis*), was most likely missing from the source used to copy Balliol 173A. The section gives detailed discussions of each mode and numerous examples from the chant repertoire, and also discusses how to adjust the psalm tone recitation termination to smoothly transition to the initial pitches of different antiphons in each mode.

The compiler concludes his excerpts from Aurelian (and the section of the major treatises) with what is now the beginning of Chapter XX (lines 1–24) – a general discussion of the types of chants in the Mass and office, but without citing the musical structure of specific chants. By dividing the materials from the *Musica disciplina* in half and putting the other major sources between the two sections, the compiler was able to conclude the section of the major sources with a brief explicit from Aurelian's work that can also serve to summarise all the authorities included in the booklet.

Concluding compilation

Once the major treatises were finished, the compiler and copyist had fols. 80v–81r as blank leaves to fill with a compendium of small items.³³ Of these the most notable is the brief dialogue *Diapason quid est?* First edited by Karl-Werner Gumpel from a Spanish source; the work exists in about a dozen manuscripts from the eleventh to the fifteenth centuries.³⁴ The dialogue is often included in codices which transmit theoretical works by Boethius and Guido that already have extensive discussions of intervals. The short *tractatulus* does not add anything to the discussion of intervals in these larger works, but it can serve as a handy reference item for those unfamiliar with musical terminology. The diapason, for example, is described in the usual terms of the similarity of low and high sounds. No proportions are given, but instead the definition concludes with a practical metaphor – the days of the week: 'just as the first day and the eighth are similar, so too with the octave' ('sicut in diebus primus et octavus similiter ita in diapason'), a metaphor also used by Guido of Arezzo.³⁵

³² Michel Huglo, *Les Tonaires. Inventaire, Analyse, Comparaison* (Paris, 1971), 29–45.

³³ RISM cites parallels for the compendium in Cambridge, Trinity College. R.15.22, fols. 138v–139r, though not in the same order.

³⁴ Karl-Werner Gumpel, 'Musica cum Rhetorica di Handschrift Ripoll 42', *Archiv für Musikwissenschaft*, 34/4 (1977), 260–86, TML: ANOSPI, and his 'Spicilegium Rivipullense', *Archiv für Musikwissenschaft*, 35/1 (1978), 57–61; new edition in Meyer and Nishimagi, *Tractatuli*, 33–7.

³⁵ Meyer and Nishimagi, *Tractatuli*, 33.

Ordinatio and compilatio

Viewing the contents of Balliol 173A fols. 74r–81v as a whole, the reordering and editing of the sources reflect the concepts of *ordinatio* (ordering of materials in a book) and *compilatio* (the editing of materials from various sources) described by the English palaeographer and Chaucer scholar Malcolm Beckwith Parkes:

The compiler adds no matter of his own by way of exposition (unlike the commentator) but compared with the scribe he is free to rearrange (*mutando*). What he imposed was a new *ordinatio* on materials he extracted from others. ... The *compilatio* derives its usefulness from the *ordo* in which the *auctoritates* were arranged.³⁶

In this reading of the booklet, the compiler edited the material Aurelian later used as the basis of the *Musica disciplina* into a frame into which other materials would be joined to create a new ordering (*ordinatio*) for a booklet that would amplify and coordinate with it.

Having covered the basics of music as a liberal art from his major sources as he edited them, the compiler then added materials to create a fuller understanding. He addressed the issue of the Greater Perfect System with both an extensive diagram (fol. 75r) and a brief prose description (fol. 80r). Simple, easy to understand definitions of intervals were added by the dialogue *Diapason quid est?* and the names of the eight-mode system using Dorian and Hypodorian (rather than Protus authenticus and plagus) were added as the last item on fol. 80r.

Nevertheless, there are a small number of topics repeated in the booklet, which, given the amount of editing undertaken, may represent those ideas the compiler felt needed to be stressed or were unavoidable given his sources (Table 4). The scribe copied the myth of Pythagoras and the idea that the word ‘music’ is from the muses three times in the booklet. In addition, the compiler may have included the excerpt from Cassiodorus only to assure complete coverage of the major writers on music as a liberal art, as it added no new information to the collection and, instead, creates a contradiction on the number of modes (fifteen or eight). The concluding *compendium* (fols. 80v–81r) served many practical functions: 1) it provided a place for excerpts for more recent writers to be added to the collection; 2) it provided information omitted from the body of the collection; and 3) it could have served as a quick reference for basic information.

The possible uses and history of the booklet

While the booklet could have served simply as an introduction to music as part of the study of the liberal arts in general, the presence of an overseeing editor (best seen in the beautiful penmanship on fol. 75v), presents the possibility that the work could have served as an exemplar for copyists on how to copy text with blank spaces for

³⁶ Malcolm Beckwith Parkes, ‘The Influence of the Concepts of *Ordinatio* and *Compilatio* on the Development of the Book’, in *Medieval Learning and Literature: Essays Presented to Richard William Hunt*, ed. J.J.G. Alexander and M.T. Gibson (Oxford, 1976), 128.

Table 4. Parallels within the booklet

Topic	Aurelian	Isidore	Cassiodorus	Pseudo-Jerome
Muses	fol. 74v	fol. 76v	fol. 79r	
Pythagoras	fol. 74v	fol. 77r	fol. 79r	
Orpheus	fol. 74r	fol. 78v		
David	fol. 74r	fol. 77r		
Numbers	fol. 74v	fol. 78v		
Instruments		fol. 78r–v		fols. 75r–76v

illustrations and examples. If so, an admittedly speculative narrative for the Balliol 173A booklet may be as follows: a scribe needing to learn the basics of music was given five bifolios of relatively poor quality on which to copy a selection of texts covering musical terms arranged into a *compilatio* by the compiler of the work who knew the source treatises well and could edit the texts in a coherent way. Part of such an assignment was learning how to leave blank spaces for the illustrations or musical examples. After completing the booklet with several major items copied in order (Aurelian-Part I, Pseudo-Jerome, Isidore, Cassiodorus and Aurelian-Part II), the final leaves of the booklet (fol. 80r–81r) were used to add a number of small items that explained basic terms and concepts, providing a handy appendix.

Sometime later, the decision was made to create a music theory codex including the works of Guido and a tonary – works which demanded that the reader know how to read music in notation and have an understanding of chant. While the contents of the booklet do not exactly align with the Guidonian works, the booklet made a useful first section for the new music codex.³⁷ The blank first folio of the booklet (fol. α) was available as a paste down to bind the front of the music codex and the back cover of the booklet (fol. 81v) was left blank. When the music codex and the Aristotelian texts were combined in the fifteenth century to create the current version of Balliol 173A,³⁸ the pastedown fol. α was lost; fol. β was lost at some point its history before the numbering of the entire codex.

Appendix

The music portions of Balliol 173A are related to at least two other medieval English manuscripts: Oxford, St John's College, 188 and Cambridge, Trinity College, R.15.22.³⁹ The parallel texts in these sources (and a few others) were noted in RISM and include the works of Guido (which have numerous sources in the period) but

³⁷ In his study of booklets, Erik Kwakkel refers to such added prefaces as creating an 'extended production unit' in 'Late Medieval Text Collections: A Codicological Typology Based on Single Author Manuscripts', in *Author, Reader, Book: Medieval Authorship in Theory and Practice*, ed. Stephen Partridge and Erik Kwakkel (Toronto, 2012), 56–79, esp. 69–70.

³⁸ This would be an example of what Erik Kwakkel calls a 'Complex Composite Manuscript'. Kwakkel, 'Late Medieval Text Collections', 58–9.

³⁹ In addition to these medieval sources, Sir John Hawkins made a copy of Balliol 173A in the eighteenth-century, currently BL add. 4915. The Hawkins copy omitted the booklet (fols. 74–81) and copied only

also sections of the smaller works, specifically portions of the Aurelian sources and/or the same material used for the concluding compendium, often in similar order.

St John's College 188

St John's 188 is composite codex from the late thirteenth century comprising ten separate manuscripts as described in Ralph Hanna's catalogue of the library.⁴⁰ Like Balliol 173A, the current version of St John's 188 combines scientific works (such Johannes Scaroboso's *Algorisums sive tractatus de arte numerandi* and a treatise on the astrolabe) with music theory works.⁴¹ Hanna's Manuscript 7, which contains only music theory works in a single hand, reorders much of the materials found in Balliol 173A and also has several concordances with Cambridge, Trinity R.15.22 (discussed in the following subsection).

St John's 188, Manuscript 7 contains four quires of four bifolios and a concluding quire, which originally had two bifolios (the last page is now missing; Table 5). It begins with a gloss of Guido's *Micrologus*,⁴² a version of which was also the first item after the Balliol theory compendium. This comprises most of the first two gatherings but left three blank leaves (fols. 76v beginning on line 4 to fol. 77v). Rather than continue with the copying of the Guidonian texts as in Balliol 173A, for some reason the scribe finished these blank leaves with a small work that fit the space – the first group of early chapters of Aurelian found in Balliol 173A, fol. 74r–v.

The scribe began the third gathering with Guido's *Regulae rhythmicae*, followed by the *Prologus in antiphonarium*, and *Epistola ad Michaelem*, which are present in the same order as Balliol 173A (and in many other manuscripts). The Guidonian works occupy fols. 78r–89v in the St John's manuscript, taking up the entire third quire and concluding in the middle of the fourth. This left the scribe almost four complete blank leaves (fol. 89v starting at line 4 to fol. 93v), which were then filled with several small works but continued past these leaves and required the addition of a fifth quire of only two bifolios to complete the codex. The gathering probably ended with a blank folio (both recto and verso), which has since been lost so the gathering ends with fol. 96r. Some (but not all) of these items parallel the brief works at the conclusion of the Balliol booklet, including the *Diapason quid est?* dialogue. The smallest fragments appear in close proximity in both sources: a brief treatment of the noean syllables from Frutolfus's, *Breviarium* (Chapter XIV:III), a review of the tetrachords and pitch names in the Greater Perfect System (from an unknown source), and a brief treatment of mode

fols. 82–119 (in order). This, perhaps, underscores the booklet's nature as a work separate from the rest of the music collection.

⁴⁰ Ralph Hanna, *A Descriptive Catalogue of the Western Medieval Manuscripts of St John's College* (Oxford, 2002), 264; and Meyer et al., *The Theory of Music*, 128–32. An extensive description also was done by Paul Merkley, *Italian Tonaries* (Ottawa, 1988), 102–8, where he describes the handwriting as typical of twelfth-century France (p. 103).

⁴¹ RISM lists five different hands in its description; Hand D copied current fols. 62–96 which is Hanna's Manuscript 7. RISM's description numbers the section as fols. 57–91; these older numbers are crossed out, perhaps by Hanna. This study uses the newer folio numbers.

⁴² Wolfgang Hirschmann, 'Accessus und Glosse: Die *Micrologus*-Version der Handschrift Oxford, St. John's College 188', in *Quellen und Studien zur Musiktheorie des Mittelalters 3*, ed. Michael Bernhard, Veröffentlichungen der Musikhistorischen Kommission 15 (Munich, 2001), 145–74.

Table 5. Contents of St John's 188 compared with Balliol 173A

St Johns 188 'Manuscript 7' (13th–14th cent)	Balliol 173A (12th–13th cent)	
62r–69v	Guido, <i>Micrologus</i>	82r–91v
70r–76v	Guido, <i>Micrologus</i> concludes	82r–91v
76v–77v	Pre-Aurelian (<i>Musica disciplina</i> Chs. I, II and VI)	74r–v
78r–82r	Guido, <i>Regulae rhythmicae</i>	91v–94v
82r–83v	Guido, <i>Prologus in antiphonarium</i>	94v–96r
84r–85v	Guido, <i>Epistola ad Michaellem</i>	96r–100r
86r–89v	Guido, <i>Epistola ad Michaellem</i> concludes	96r–100r
89v	On eight tones 'Omnes authentique quinto loco...'	
89v–90r	Diapason quid est?	80v–81r
90r	(see Berno, <i>Prologus et Tonario</i>) 'Primum querite' (with letter names, line 21)	106r–119v
91v	'None dicitur a grece' (line 11, start, blue initial)	80v (line 32, red initial)
91v	'Quinque tetrachorda... (line 14, no change)	80v (line 15, red initial)
91v	'... Proslambanomenos id est adquisitus' (line 17, no change)	80v (line 18, no change)
91v	'Unusquisque sonus' (last line no change)	80v (line 29, red initial)
92r–93v	Organ treatise 'Fistulam longissimam'	[see Trinity R.15.22 fols. 127r–128r]
93v	On bells 'Quicunque cymbalba'	[see Trinity R.15.22, fol. 131r–v]
94r	'Quicunque cymbalba' concludes	[see Trinity R.15.22, fol. 131r–v]
94r–95v	<i>Scolica enchiridiadis</i> excerpts	[see Trinity R.15.22, fols. 129r–131r]
95v–96r	Modes 'De natura modorum'	
96v	Originally blank (added text – proverbs from <i>Almagest</i>) + Missing folio (back cover)	

from Hucbald, *De harmonica institutione* (as detailed in Table 5). The concluding compendium in St John's 188 includes several items not present in Balliol 173A such as fragments on instruments (organs and bells), which are, however, present in Cambridge, Trinity College, R.15.22 (discussed in the following subsection).

St John's 188 is the only known source that transmits the same fragment of the Aurelian's chapters as they appear in the Balliol 173A booklet, making these two sources closely related, as was observed by Morelli. But rather than breaking the source into a *compilatio* structure, the scribe of St John's 188 used only the early chapters from Aurelian as a short *tractatulus* to fill out the empty folios of a gathering, indicating the following treatises by Guido were not yet ready for the copyist to use. The *Diapason quid est?* dialogue and other brief materials are in similar positions of a concluding compendium in St John's 188, the same role those works have in the Balliol 173A booklet – further evidence for the close relationship between these two sources. The scribe/compiler of St John's 188 did not include any of the other works by the older writers in the Balliol booklet – Pseudo-Jerome, Cassiodorus, or Isidore.

Trinity College R.15.22

Some of the parallels in texts between Balliol 173A and St John's 188 also appear in Cambridge Trinity R.15.22 (as was noted in RISM), but it omits any passages from the early Aurelian chapters. Trinity College R.15.22 is a large codex, copied in the

twelfth–thirteenth century by a single, elegant hand.⁴³ Following an opening of two bifolios as a guard, the Boethius *De institutione musica* takes up two-thirds of the codex. It is written on nine quires of four bifolios (fols. 5–76), one quire of five (fols. numbered 77–88, with three unnumbered leaves), and three quires of four bifolios (fols. 84–107). The Boethius ends on the bottom of fol. 101v near the beginning of the thirteenth quire (fols. 100–107).

The scribe continues with a glossed version of Guido's *Micrologus*, which takes up the remainder of the thirteenth quire, all of the fourteenth (fols. 108–115) and ends early in the fifteenth gathering. There then appears three short works of Guido included in Balliol 173A, St John's 188, and many other sources, starting with the *Regulae rhythmicae*, which is given as the *Brevis sermo in musicam* but without a direct attribution to Guido (fol. 117r). But rather than continuing with the next two Guidonian texts as they frequently appear (the *Prologus in antiphonarium* and the *Epistola ad Michaelem*), the Trinity scribe inserts a pair of small items on the tones and verses on the muses.

Following the verses on the muses, the MS continues with *Prologus in antiphonarium* with a clear attribution to Guido on fol. 121v and begins the *Epistola ad Michaelem* but without a rubric citing the author with the text, *Ad inveniundo ignoto cantu*.⁴⁴ The *Epistola* continues to the start of the sixteenth gathering on fol. 124r, line 21, with the musical examples beginning *Alma rector mores nobis*. At this point, Guido is about to discuss the range of pitches and the division the monochord. The scribe, however, does not continue with Guido's treatise but enters several non-Guidonian items that will complete the sixteenth quire, all of the seventeenth and end at the start of the eighteenth gathering, which is also the final quire. These *tractatuli* are given clear rubrics and/or large drop-capitals of several lines in the margins (Table 6). They all expand upon the range of notes which is the topic that Guido's treatise returns to on fol. 131v, line 23 with a rubric guiding the reader back to Guido with a discussion of the names of seven pitches (relating the seven pitches to the days of the week) followed by a division of the monochord. Many, but not all, of the inserted items have parallels in Balliol 173A and/or St John's 188 (Table 7).

The insertions into the *Epistola ad Michaelem* function as a *compilatio*. To return to the ideas of Malcolm Parkes: the compiler did not add his own new material (unlike the commentator) but rearranged materials and imposed a new *ordinatio* on materials he extracted from others. This parallels the appearance of the Church Fathers within the frame of the Aurelian materials in Balliol 173A. As the *compilatio* in Trinity R.15.22 begins and ends in the middle of quires, however, it does not appear to indicate

⁴³ Meyer et al., *The Theory of Music*, 15–21. In his 1911 catalogue of the library manuscripts, Montague Rhodes James noted the numerous fine ornaments in the volume; *The Western Manuscripts in the Library of Trinity College, Cambridge* (Cambridge, 1901), 2: 36–63. James divided the work into two large sections: the first for Boethius and the second for the Guidonian works. Images of the MS are listed in the Wren Digital Library, <https://mss-cat.trin.cam.ac.uk/manuscripts/uv/view.php?n=R.15.22#c=0&m=0&s=0&cv=0&xywh=-1279%2C-204%2C5282%2C4069> (accessed 11 January 2024).

⁴⁴ Delores Pesce, *Guido D'Arezzo's Regule rithmice, Prologus in antiphonarium, and Epistola ad Michaelem: A Critical Text and Translation with an Introduction, Annotations, Indices, and New Manuscript Inventories* (Ottawa, 1999), 156, line 81.

Table 6. *Tractatuli* in Trinity College, R.15.22 (fols. 124–131v) inserted into Guido’s *Epistola ad Michaelem*

- A listing of the Greater Perfect system (not parallel to Balliol 173A)
- Extract from Berno’s *Prologus in antiphonarium* (= Balliol 173A 108r–111v)
- Brief works on organ pipes (=St John’s 188 fols. 92r–93v)
- Excerpt from *Scolica enchiriadis* (=St John’s 188 fols. 94r–95v)
- Dialogue on intervals (not parallel to Balliol 173A)
- Brief work on bells (=St John’s 188 fols. 92r–93v)

Table 7. Comparison of Balliol 173A with St John’s 188 and Trinity R.15.22

Balliol, 173A contents (in order) (booklet fols. 74–81) (12th–13th cent)	Parallels in St John’s, 188 (13th–14th cent)	Parallels in Trinity, R.15.22 (12th–13th cent)
74r–v	Pre-Aurelian (<i>Musica disciplina</i> Chs I, II, VI)	76v–77v
75r	GPS Diagram	
75r–76v	Pseudo-Jerome	
76v–79r	Isidore	
79r–v	Cassiodore excerpt	
79v–80v	Pre-Aurelian (<i>Musica disciplina</i> VIII, XX)	
80v	‘Quinque tetracorda ... Proslambanomenos id est adquisitus’	91v
80v	[Hucbald] ‘Unusquisque tonus autentus’	91v
80v	‘None dicitur a graeco’	91v
80v–81r	‘Diapason quid est?’	89v–90r
81r	mode names	138r–v
82r–91v	Guido, <i>Micrologus gloss</i>	62r–76v
91v–94v	Guido, <i>Regulae rhythmicae</i>	78r–82r
91v–96r	Guido, <i>Prologus in antiphonarium</i>	102r–117r
96r–100r	Guido, <i>Epistola ad Michaelem</i>	117r–121r
		[two other items 121r–v]
		121v–23
		123r–24r (start)
		[several items] fol. 131v–134v (end)
100r–106r	Pseudo-Odo, <i>Dialogus</i>	
106r–119v	Berno, <i>Prologus et Tonario</i>	(extract) 124v–127v
		parallels Balliol 108r–111v

that the purpose of this *compilatio* was to create a booklet, as was the case in Balliol 173A. Trinity R.15.22 then concludes with several brief works, including the *Diapason quid est?* dialogue and a discussion of the Greater Perfect System beginning ‘Quinque tetracorda’. Taken together, the three codices do not merely transmit many of the same texts, but do so in similar ways within the fascicle structure of each codex, use similar methods of *compilatio*, and share several similar *tractatuli* in their concluding *compendia*.