Manuscript fragment from the National Museum Library in Prague, shelfmark 1 D a 3/52, and the earliest attempts in the Middle Ages to notate organ music

1. Music for keyboard instruments and the first notation of such music in the Middle Ages

The earliest source of organ music, known as the Robertsbridge Codex, is currently dated *c.* 1360.[1] The principles of notation used in this manuscript – the combination of upper voices written on a staff and lower voices written using letters – do not vary much from later Central European organ compositions. The earliest Italian source of notated organ music does not use letters, is written in score on two staves, and is dated *c.* 1400.[2]

Among Central European sources from the beginning of the fifteenth century, several types of written documents about organ playing can be found. The so-called *fundamenta organisandi* are notated sources that include pre-composed *exempla* of recommended discant progressions corresponding to melodic steps in the tenor.[3] These examples are typically not accompanied by explanatory texts. Explanations are rather to be found in other treatises called *ars organisandi*. The presentation of this information in the form of a treatise indicates that these texts were written in the milieu of university-educated clerics and were intended for organists from the same social class. We do not know the actual age of the texts. The most relevant source of information for us, the *ars organisandi*, is found in fifteenth-century manuscripts in

Munich (2nd quarter of the 15th century; hereafter *Mü*),[4] Regensburg (notation after 1470, text *c.* 1400, probably before *Mü*; hereafter *Re*),[5] and Prague (*c.* 1430, transmitting the most complete and perhaps oldest known version of instruction; this involves two treatises, which partially correspond to or supplement *Mü*[6] and *Re*;[7] hereafter *Pr*).[8] These and certain other texts[9] undoubtedly draw upon

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[1] John CALDWELL, *s. v.* 'Robertsbridge Codex', in: *Musik in Geschichte und Gegenwart. Sachteil*, 8 (Kassel ²1998), cols. 348–350.

[2] The compilation of the most important source for this music – the Codex Faenza – is currently dated to the period between *c.* 1400 and *c.* 1425. Cf. Pedro MEMELSDORFF (ed.), *The Codex Faenza 117. Instrumental Polyphony in Late Medieval Italy*, I (Lucca 2013), p. 162. A fragment from Assisi also dates from the beginning of the fifteenth century; see Agostino ZIINO, 'Un antico "Kyrie" a due voci per strumento a tastiera', *Nuova Rivista Musicale Italiana* 15 (1981), pp. 628–633; cf. Excursus 1 below, p. 63. For an introductory orientation in the oldest notated compositions for keyboard instruments, cf. Willy APEL (ed.), *Keyboard Music of the Fourteenth and Fifteenth Centuries* [= Corpus of Early Keyboard Music, 1] (Middleton, WI, 1963), and Martin STAEHELIN, *Die Orgeltabulatur des Ludolf Bödeker. Eine unbekannte Quelle zur Orgelmusik des mittleren 15. Jahrhunderts* [= Nachrichten der Akademie der Wissenschaften in Göttingen, I. Philologisch-Historische Klasse, Jg. 1996, Nr. 5] (Göttingen 1996), pp. 17–18, footnote 25.

[3] E.g. APEL (ed.), *Keyboard Music* (◄ footnote 2), nos. 11, 21, 24, 25, 28, 29, 41.

[4] München, Bayerische Staatsbibliothek (D-Mbs), Clm 7755; for an edition, see Theodor GÖLLNER, *Formen früher Mehrstimmigkeit in deutschen Handschriften des späten Mittelalters. Mit Veröffentlichung der Orgelspiellehre aus dem Cod. lat. 7755 der Bayer. Staatsbibliothek München* [= Münchner Veröffentlichungen zur Musikgeschichte, 6] (Tutzing 1961), pp. 64–65, 167–179.

[5] Regensburg, Bischöfliche Zentralbibliothek – Proskesche Musikabteilung (D-Rp), ms. 98 th. 4°; for an edition, see Christian MEYER, 'Ein deutscher Orgeltraktat vom Anfang des 15. Jahrhunderts', in: *Musik in Bayern* 29 (1984), pp. 43–60; on the question of dating, see pp. 57–58.

[6] *Opusculum de arte organica*; for an edition, see Elżbieta WITKOWSKA-ZAREMBA, '*Ars organisandi* around 1430 and its Terminology', in: Michael BERNHARD (ed.), *Quellen und Studien zur Musiktheorie des Mittelalters*, 3 [= Bayerische Akademie der Wissenschaften. Veröffentlichungen der Musikhistorischen Kommission, 15] (München 2001), pp. 367–423, here pp. 402–418.

[7] *Octo principalia de arte organisandi*; for an edition, see WITKOWSKA-ZAREMBA, '*Ars organisandi*' (◄ footnote 6), pp. 387–398; in the text that follows, these two treatises are not differentiated.

[8] Prague, Archives of Prague Castle – Library of the Metropolitan Chapter (CZ-Pak), ms. M CIII; for an edition, see WITKOWSKA-ZAREMBA, '*Ars organisandi*' (◄ footnote 6), pp. 367–423, with the collaboration of Christian MEYER; Elżbieta WITKOWSKA-ZAREMBA, 'Sztuka gry na instrumentach klawiszowych około 1430 roku: dwa traktaty organowe z rękopisu M. CIII Biblioteki Kapituły Metropolitalnej w Pradze', *Muzyka* 48 (2003), no. 2, pp. 57–69. On the relationships among all three texts, see Elżbieta WITKOWSKA-ZAREMBA, 'New Elements of 15th-Century *Ars organisandi*: The Prague Organ Treatises and their Relationship to Previously Known Sources', in: Theodor GÖLLNER (ed.), *Neues zur Orgelspiellehre des 15. Jahrhunderts* [= Bayerische Akademie der Wissenschaften. Veröffentlichungen der Musikhistorischen Kommission, 17] (München 2003), pp. 1–15.

[9] The 'Brussels Treatise', for example; for an edition, see MEYER, 'Ein deutscher Orgeltraktat' (◄ footnote 5), p. 56, or the text *Bona documenta*: Karl-Werner GÜMPEL and Klaus-Jürgen SACHS, '*Bona documenta*: Eine Kompilation über Satzlehre und Orgelspiel', in: GÖLLNER (ed.), *Neues zur Orgelspiellehre* (◄ footnote 8), pp. 65–84.

older and partially shared common sources that are now unknown. The beginnings of such instruction are related to the emergence of the modern keyboard played with the fingers of both hands. The oldest known fingerings are described very rudimentarily in the treatise *Pr*.[10] The *Fundamenta* and treatises supplement each other;[11] they set out to give rules[12] for the improvisation of discant to a melody given in advance in the tenor.[13] Besides the rules, there are also notated compositions. The oldest stratum of liturgical compositions (parts of the Mass Ordinary, the Magnificat) and of compositions based on song like tenors are more or less based on the recommendations in the treatises. Somewhat later (after 1440), 'free' compositions appear (preambula,[14] preludia), which are less dependent upon the older instructional rubrics.

During the middle third of the fifteenth century, some *fundamenta organisandi* were inspired by contemporary changes in the style of vocal music, and some of these elements were incorporated into its vocabulary.[15] *Ars organisandi*, as we know it from fifteenth-century manuscripts, continued to preserve symbols that were relatively archaic and was quickly aging.[16] The format of the treatise was probably already losing importance in the milieu of professional organists from the ranks of laymen, but treatises may have maintained their relevance where simple rules for improvising on a melody in the tenor were sufficient.[17] This gives insight into the very beginnings of the written tradition of music for keyboard instruments and to a certain extent even further into the past, because it enabled a way of musical thinking that did not require written notation.[18]

A central term used in the instructions transmitted in these treatises is *tactus*. Its basic components are four-note (or exceptionally three-note) melodic-rhythmic-fingering formulae (*tactus puri*, *tactus generales*) in the discant, which serve in various combinations for filling in the intervals between individual notes of the tenor. The notation of the tenor part uses neither a staff nor symbols indicating the duration of notes. It was more economical to indicate the tenor notes for the length of the bar[19] using letters, while the lengths of bars are given in advance by the chosen number of notes in the discant for one note of the tenor. The basic four-note formulae correspond to the modus[20] *quattuor notarum*, and its subdivision results in a *tactus octo notarum*.[21] Semibreves are usually counted, and their value could be halved into minims. The system does not provide for dotted rhythms or syncopations, and the relationship between larger and smaller note values is predominantly binary. Bars are marked off by bar lines, as

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[10] Cf. WITKOWSKA-ZAREMBA, '*Ars organisandi*' (⊰ footnote 6), pp. 397, 400–401; Christian MEYER, 'Wahrnehmungsperspektiven bei der Verschriftlichung spätmittelalterlicher Orgelkunst', in: Nicole SCHWINDT (ed.), *Musikalischer Alltag im 15. und 16. Jahrhundert* [= Trossinger Jahrbuch für Renaissancemusik, 1] (Kassel 2001), pp. 77–95.

[11] The final part of the treatise *Re* is in the character of a brief *fundamentum*; cf. MEYER, 'Ein deutscher Orgeltraktat' (⊰ footnote 5), pp. 47, 55, 58–59.

[12] Cf. the introductions to both treatises *Pr*: "Pro utilitate artem organisandi scire cupientium necnon extirpandi multarum dubitacionum, que apparent ex informacione multorum non intelligencium, de gracia dei componam unum tractatulum." – "[…] Quibus scitis scitur et ars organica fundamentaliter, quod est contra organistas, qui proprie dicuntur usuales." Similarly *Mü*. Cf. WITKOWSKA-ZAREMBA, '*Ars organisandi*' (⊰ footnote 6), pp. 387, 402.

[13] The treatises also cover the possibility of three-part writing by adding a contratenor part. In view of the two-part writing of the compositions in the Prague fragment, we can overlook this question.

[14] The verb *preambulisare* appears in the treatises *Mü* and *Pr*. The text concerns the placement of altered tones when playing 'super ut', 'super re', 'super mi', 'super fa', 'super sol', 'super la'. This involved improvise preludes or figures played to give the singers the notes for their entrances that a preambulum is to precede. Cf. GÖLLNER, *Formen früher Mehrstimmigkeit* (⊰ footnote 4), p. 175; WITKOWSKA-ZAREMBA, '*Ars organisandi*' (⊰footnote 6), p. 114; see also Klaus ARINGER, 'Zum Spielvorgang des Beginnens und Schließens in der ältesten Orgelmusik', *Acta Organologica* 27 (2001), pp. 249–258.

[15] Three-part writing, counterpoint, mensural rhythm. Cf. e.g. Conrad Paumann's *fundamentum*; for and edition, see APEL (ed.), *Keyboard Music* (⊰ footnote 2), pp. 32–51.

[16] A late copy of the treatise *Re* is introduced by the sentence: "Reperi in una carta unum modum organizandij [!], qui est antiquus." Cf. MEYER, 'Ein deutscher Orgeltraktat' (⊰ footnote 5), p. 44.

[17] The same holds true for medieval polyphony in Central Europe. Their lifespan may also have been defined by the continued existence of medieval organs ('Blockwerk'), which were not well suited for the performance of polyphonic music.

[18] Cf. MEYER, 'Wahrnehmungsperspektiven' (⊰ footnote 10), pp. 77–95.

[19] The term *tactus* as used in these organ treatises is not too remote from the modern idea of a 'takt' (bar), in contrast to the meaning it assumed during the period of mensural theory (the movement of the hand giving the length of the basic metrical unit). While *mensura* expressed the division of larger note values into three or two smaller ones at several levels (*maximodus, modus, tempus, prolatio*), *tactus* in the organ treatises is inseparable from the movement of fingers on the keyboard, which also determines the structure of musical events in time by the number of notes in a bar that is given in advance. In the text that follows, the term *tactus* primarily refers to predefined formulae or figures (see the catalogue of *Tactus* below, pp. 38–40), while the general term bar indicates the unit of time enclosed by a bar line. Cf. Theodor GÖLLNER, 'Die Tactuslehre in den deutschen Orgelquellen des 15. Jahrhunderts', in: Theodor GÖLLNER, Klaus Wolfgang NIEMÖLLER and Heinz von LOESCH, *Deutsche Musiktheorie des 15. bis 17. Jahrhunderts*, 1: *Von Paumann bis Calvisius* [= Geschichte der Musiktheorie, 8/1] (Darmstadt 2003), pp. 1–66; Claus BOCKMAIER, 'Tactus und Mensura: Überlegungen zu einer Primärtechnik der Tastenmusik, ausgehend von Adam Ileborgh', *Acta Organologica* 27 (2001), pp. 259–278.

[20] The terms *tactus, modus, prolatio*, and *mensura* are interchangeable in this method.

[21] This terminology is derived from Italian notation of the fourteenth century. Cf. Willy APEL, *Geschichte der Orgel- und Klaviermusik bis 1700* (Kassel ²2004), p. 34. There are still more possibilities (*tactus trium notarum, tactus sex notarum*, …), but it is not necessary to address them with respect to the Prague fragment.

they are today. The mutual coordination of the tenor and discant is not governed by the traditional rules of counterpoint with its preference for contrary motion. Instead one tends to find parallel motion in octaves (or sometimes fifths) arranged into standardised formulae with passing tones and the recommendation of reaching a target note (at the octave or fifth above the following tenor note) by stepwise motion from below.[22] It has been pointed out repeatedly that this technique is based on what is called *Klangschrittlehre*.[23] At the same time, the parallel voice leading highlighted by the sound of the medieval organ with its mixtures is just as close to the utilitarian Central European polyphony we know from sources of the thirteenth through the sixteenth centuries, which preserve features of archaic organum thinking until late in the Middle Ages.[24] The formulae are usually made so that they can be transposed by a fifth or a fourth according to the organisation of the tonal material into natural soft, and hard hexachords, with the possibility of 'mutations' between them based on diatonic scale degrees belonging to multiple hexachords.[25]

In order to comprehend the notation of the newly discovered Prague fragment, the *ars organisandi* is crucial, because it describes certain phenomena that do not appear in other practical sources or in the so-called *fundamenta* in such a concentrated form. The contexts are, however, reciprocal. In view of the fact that the treatises have been preserved in late copies and are not free of errors, the

Prague fragment allows clarification of certain damaged or unclear places in the treatises' texts.

2. Description of the Prague fragment

Preliminary information about the notated manuscript fragment held in the collection of the National Museum Library in Prague, shelfmark 1 D a 3/52, was published in 2016.[26] At that time, the fragment was assumed to transmit notation of instrumental (organ) music written in black mensural notation.

The fragment consists of a single sheet of paper without a watermark. There can be no doubt about its provenance from the lands of the Bohemian Crown in the late medieval period, but it has not yet been possible to localize its origin more precisely. It was used as binder's waste, but it is not known when it was removed from the book or what the book's title was. The dimensions of the sheet vary between a height of 25.8 to 26.4 cm and a width of 18.3 to 19 cm. The irregularity was caused by the trimming of one shorter and one longer side during the preparation of binder's waste, but in this case the losses of text do not amount to much;[27] greater losses were caused by mechanical damage, deterioration of the paper, and the smearing of ink. Before restoration in 2017, remnants of glue and stains were visible on the paper, which had been folded near the bottom third of its length. Once the accretions were removed, certain details became more visible, while some elements (hair-thin pen strokes, staff lines) are visible only by means of a photograph made with a UV lamp.

The sheet of paper bears notation on both sides, but it was used only secondarily for musical notation. It had first been used for accounting records. On one side of the sheet oriented widthwise, the financial affairs, mostly debts, of a certain Thomas ("Dominus Thomas" / "Tomas de Ch….icz", perhaps "Chothowicz", "Chotz…ycz") are written on the left-hand side in two paragraphs. The surname appears twice, but it is never intact enough to permit an unambiguous reading. Moreover, there are many places with a similar name, above all in Bohemia, but also in neighbouring countries.[28]

[22] Theodor Göllner has long been working on the question of *tactus* since publication of the edition of *Mü*; see GÖLLNER, *Formen früher Mehrstimmigkeit* (◄ footnote 4), pp. 62–66. Since the discovery and publication of an edition of the treatise *Pr*, cf. WITKOWSKA-ZAREMBA, '*Ars organisandi*' (◄ footnote 6), more studies of this question have appeared: cf. Theodor GÖLLNER, '*Diminutio* und *tactus*', in: BERNHARD (ed.), *Quellen und Studien*, 3 (◄ footnote 6), pp. 359–366; Theodor GÖLLNER, *Nochmals zur Tactuslehre: Entstehung, Faktur, Folgen*, in: GÖLLNER (ed.), *Neues zur Orgelspiellehre* (◄ footnote 8), pp. 55–64; GÖLLNER, 'Die Tactuslehre' (◄ footnote 19), pp. 1–68; MEYER, 'Wahrnehmungsperspektiven' (◄ footnote 10), pp. 83–86. A separate chapter and a catalogue of formulae devoted to the application of *tactus* in the Prague fragment appear below, pp. 25–28 and 38–40.

[23] Cf. GÖLLNER, 'Die Tactuslehre' (◄ footnote 19), pp. 37–43. The main source for this teaching is the so-called 'Vatican Treatise'. The technique described in the treatise corresponds to two-part organum (in the manner of Leonin) from the Notre-Dame period.

[24] Cf. GÖLLNER, *Formen früher Mehrstimmigkeit* (◄ footnote 4), passim; Jaromír ČERNÝ, 'Středověký vícehlas v českých zemích', *Miscellanea musicologica* 27–28 (1975), pp. 9–116, passim; Jaromír ČERNÝ, 'Das retrospektive Organum oder Neo-organum?', *Hudební věda* 38 (2001), pp. 3–31.

[25] Transpositions provide the main contents of the 'Brussels Treatise'; cf. MEYER, 'Ein deutscher Orgeltraktat' (◄ footnote 5), p. 56; see also WITKOWSKA-ZAREMBA, '*Ars organisandi*' (◄ footnote 6), p. 418. For example, the same formula intended for the tenor step *ut–re* can be performed with the tenor steps *c–d, f–d, c–g, f–g*.

[26] Vlastimil BROM et al., *Rukopisné zlomky Knihovny Národního muzea. Signatury 1 D, 1 E a 1 G* (Praha 2016), p. 64.

[27] The trimming of the top edge comes just short of touching the notation. As a consequence of the trimming, on the sides of the top half of the paper, the ends of the staves are missing on one side and the beginnings on the other.

[28] Chocenice near Kouřim (1318 *Chotyenicz*, 1405 *Chotynicz*, 1408 *Choczemicz*); Chocenice near Plzeň (Kocenice, Kotzenitz); Chocnějovice near Mnichovo Hradiště (1322 *Cocznyoyowicz*, 1352 *Koczznieuicz*, 1382 *Chocznieuicz*); Chocovice near Cheb (Kötschwitz, 1382 *Koczvicz*, 1392 *Koeczwicz*, 1461 *Koetschwitz*); Chodovice near Hořice (1369 *Chodouicz*); Chodovlice near Lovosice, Chodžovice near Roudnice (1353 *Chotssovicz*, 1371 *Choczouicz*, 1425 *Choczziewicz*); Chotěbudice near Podbořany (Kettowitz); Chotějovice near Bílina (Kottowitz, 1264 *Chotemicz*, 1549 *Chotiowicze*, *Chotowicz*); Chotějovice/Choťovice near Chlumec nad Cidlinou (1392 *Chotyewicz*); Chotějovice near Horšovský Týn (1379 *Chotieiowicz*); Chotěmice near Soběslav (1318 *Chotyenicz*);

The first paragraph is crossed out, probably having been cancelled after the debts were paid. In the second paragraph, fortunately, the dating of the remaining information to the year 1356 is intact:

"It[e]m D[omi]n[u]s Thomas de Ch[…]ycz […] […] sub an[n]o d[omi]ni aᵒ . cccᵒ . Lviᵗᵒ feria viᵗᵃ […]"
[= anno millesimo trecentesimo quinquagesimo sexto, feria sexta …]

The year 1356 is the *terminus post quem* for the initial use of the sheet of paper, and the way the notation is written shows[29] that it must have been done after the recording of the debts. We do not, of course, know how much time passed between the date given (it is not the last record of debts – another five damaged lines follow) and the subsequent use of the paper. Even if the piece of paper had lain unused for several years, in the context of Bohemian and Central European sources of medieval polyphony and the notation of music for keyboard instruments, it represents quite an extraordinary discovery, and in conjunction with other sources, I believe that it casts a different light on the beginnings of organ playing in the Bohemian lands from what has been heretofore assumed.

The new user of the paper – the notator – turned it upright so that the lines recording past debts are 'suspended' from the top edge of the paper, while the notation uses the empty space perpendicular to and beneath the figures on that side of the paper. The other side of the paper is also covered with notation. At its inception, this was probably a single sheet that was not a part of any volume. On each page, a single composition is written in a relatively complete state from beginning to end, without continuing to the next page.

The fragment contains two liturgical compositions. On the *verso* side is the introit *Salve, sancta Parens*, and on the *recto* side is *Kyrie, magne Deus potencie*.[30]

Salve, sancta Parens is an introit for various Marian masses. Rubrics from missals and graduals of the fourteenth through sixteenth centuries typically list the fol-

lowing liturgical occasions: besides the "Officium de Domina" for general use, there are "in vigilia Assumptionis", "Mariae Nivis", "Officium de Domina sabbatis diebus", and "Officium de Beata Virgine incipiendo post tempus pascale usque ad adventum Domini". What was most frequently involved was a votive mass, identifiable by the appearance of the term *matura*. The organ arrangement includes the complete antiphon and the beginning of the psalm verse *Sentiant omnes*, the notation of which ends abruptly in the fourth bar in the middle of a phrase. The scribe did not continue, although there is still ample room on the sheet of paper.

Kyrie, magne Deus potencie was relatively widely used: according to liturgical rubrics ("summum", "festivale"), it was intended for major feast days. It is unclear whether the two compositions were intended for the same mass; only the rubric in the Kouřim Gradual of 1470[31] specifies Marian feasts ("Annunciacionis, Assumpcionis, Nativitatis Sancte Marie") as well.[32] The beginning of the organ arrangement is written into the spaces between the accounting records on the *recto* side of the paper, and it continues below the records on the blank bottom part of the page. The chaotically notated beginning is damaged by trimming and by deterioration of the paper. The arrangement includes the sections *Kyrie I* and *Christe eleison*. The plainchant melody of the last section, *Kyrie II*, is identical to the *Kyrie I*, and thus if the organ was to have supplemented the last section as well, it would not have been necessary to write it out. The endings of both notated parts are identical, and this facilitates the interpretation of less legible parts. The musical passage is preceded by an erroneous inscription of the first bar[33] and a damaged rubric that reads "item […] finalis",[34] probably indicating the repetition of the opening section at the end. A less likely explanation is that the rubric provides information about the character of the cadential formulae used, which are labelled in some comparative sources as *pausa* or *finale*.

Unrelated to the organ composition, on the bottom margin of the page are practise markings in pen with notes in a much larger format than the notation of the organ composition. The size corresponds to that of an official songbook from which several performers would sing. This involves three descending minims in black mensural notation and a few plainchant ligatures of various shapes. They are written in the rhombic notation typical of the Bohemian lands, which confirms, as it seems, the Bohemian provenance of the fragment. At the upper right edge aligned vertically with the axis of the original debt records is a four-line staff without a clef containing trial notations of three discant formulae.

Chotěnice near Chrudim (1485 *Chotienicz*); Chotěnice near Kadaň (Kudenitz, 1401 *Chotienicz*); Chotěvice near Hostinné (Kottwitz, 1389 *Cothowicz*, 1399 *Kothuicz*); Chothowitz in Silesia, now Czechowice/Dziedzice; Chotovice near Česká Lípa (Kottowitz, 1455 *Kotwicze*); Chotovice near Litomyšl (1350 *Kothowicz*, 1406 *Chotowicz*); Göttweig, Lower Austria (*abbatia Gottwicensis*). Cf. Antonín PROFOUS, *Místní jména v Čechách*, 1–5 (Praha 1947–1960), passim. I wish to thank Paweł Gancarczyk for pointing out the incidence of this name in Silesia.

[29] See the description of the contents of the fragment below.

[30] The following abbreviations appear in the description that follows and in the critical apparatus: T. + numeral refers to a particular *tactus* – a standardised formula in the discant (see the catalogue of these formulae below, pp. 38–40); references to specific bars in both compositions are given by the symbols S + bar number (= *Salve, sancta Parens*) or K + bar number (= *Kyrie, magne Deus potencie*), and a particular note is referenced by the order of the note in the bar after a slash (e.g. S 52/4 = *Salve, sancta Parens*, bar 52, 4ᵗʰ note).

[31] Prague, National Library of the Czech Republic (CZ-Pu), ms. XIV A 1, fol. 3ʳ.

[32] Cf. Hana VLHOVÁ-WÖRNER, *Tropi ordinarii missae: Kyrie eleison. Gloria in excelsis Deo* [= Repertorium troporum Bohemiae medii aevi, 2] (Praha 2006), p. 128.

[33] 'K 0'.

[34] Jiří K. Kroupa suggests the reading "item [velut] finalis".