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Early Music Printing and Ecclesiastic Patronage

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Printing was first established in Mainz, the seat of the archbishop who was the most important of the seven Electors of the Holy Roman Empire and head of the largest ecclesiastical province of that Empire, containing 17,000 clerics who made a perfect market for liturgical books.¹ The Council of Basel had ended in 1449 with the imperative to distribute newly reformed liturgical texts across Europe, and music was an integral part of those reformed texts. Although it appeared that the entire international church was behind the adoption of the conciliar reformed *Liber Ordinarius*, the [Council-Benedictines](#) of the Province of Mainz that met in 1451 voted against what was essentially a Roman liturgy, supporting instead a text offered by the archbishop of Mainz.² Despite the pope's threat to use military force if necessary, the [council-Provincial Chapter](#) ended by sending bishops and abbots back to their homes to create unique reformed diocesan and monastic texts in a giant exercise in textual editing.³ The publication of hundreds of editions of liturgical books – tens of thousands of copies – would have to wait.⁴

Music was in the middle of the struggle over textual orthodoxy. Every priest was required to have a missal, an enormous market for printers, and music was a necessary, if small, part of the genre, the fairly simple plainchant sung by the priest. On the other hand, choirbooks, agendas, services for the dead (*vigiliae, obsequiale*) contain melismatic chant on nearly every page, requiring complex neumes of music type designers. The crucial significance of choir music in the liturgical reform movement is demonstrated by the fact that music was first printed in choirbooks.⁵ We know how the struggle for uniformity in liturgical texts ended. The international distribution of new books sought by council

reformers and promised by the invention of printing would be the Roman liturgy authorized by the Council of Trent in the next century, but only after northerners had been allowed to see into print their regional texts and chant celebrating local saints and practices.

Bishops and abbots played a major role in bringing their reformed liturgy to print, investing large sums of money in the creation of impressive text and music types and in the printers able to compose such type. Solid evidence of relationships between ecclesiastical patrons and printers exists for liturgical printing in Würzburg and later Eichstätt with Georg and Michael Reyser, Bamberg with Johann Sensenschmidt, Steffan Arndes in Schleswig and Lübeck, and Augsburg with Erhard Ratdolt. Those printers alone published one-third of all fifteenth-century German liturgical books printed with notes and staves (46 of 140) and well over half of the liturgical books with space for music (52 of 88) (Figure 2.1).

<INSERT FIGURE 2.1 HERE OR ABOVE>

Würzburg: Georg Reyser and Prince-Bishop Rudolf von Scherenberg

The first example of ecclesiastical sponsorship of liturgical printing is a contract for a territorial monopoly of the new technology of printing. The privilege awarded to the first printers in Würzburg by Prince-Bishop Rudolf von Scherenberg, the governing prince of his territory, just east of Mainz, is clearly described in a letter in the first book off the press, the *Breviarium Herbipolense* [after 20 September, 1479]:

The liturgical books of our Würzburg choir should be circumspectly examined, corrected, and improved with the utmost care by selected men whom we considered suitable for

this task – which we have indeed found to have been carried out with utmost attentiveness – so, in order that the prelates and other priests and office holders of our city and diocese might in all future times benefit and prosper from this due correction and integral renewal of the books, we have therefore decided that nothing could be more proper and even opportune than that in accordance with the correction and improvement of the liturgical books their impression should be carried out and adapted by some outstanding masters in the art of printing. For which purpose we have come to an agreement with the following far-sighted men who are devoted to us in Christ and whom we sincerely esteem: Stephan Dold, Georg Reiser and Johannes Beckenhub, alias Mentzer – these being most experienced masters in this art – and we have brought them to our city of Würzburg on the basis of contracts and equal terms. To them alone and to no one else have we given the opportunity to print accurately and in the best possible way these liturgical books (as indicated above, including those for the choir). We have taken them and their families, their goods and chattels, under our dutiful and paternal protection and defense. Therefore, so that fuller faith might reveal itself to all thanks to such a printing of the books, we have ordered and allowed the master printers to decorate the canonical books which are to be printed in the manner mentioned above with the insignia of our Pontificate and Chapter.⁶

Bishop Rudolf invited Strasbourg residents Georg Reyser, Stephan Dold, and Mainz cleric Johannes Beckenhub to establish a printing shop in Würzburg, the central city within his duchy. Though Reyser had a thriving printing business in Strasbourg with his relative Michael and had acquired citizenship there in 1471, he left the town of 40,000 to

move to Würzburg, a town of a few thousand, to accept a monopoly on printing with the primary goal of the production of reformed liturgical texts. There is no evidence that Reyser purchased property in Würzburg, and the terms of the contract – protection of goods and chattels – suggest that his home and printing shop were in the bishop's residence.⁷ The first book to be issued in Würzburg was a folio breviary for the diocese, and Dold, Reyser and Beckenhub are listed in the colophon. ~~Bibliographers date the edition 'is dated'~~ after 20 September 1479', the date of the contract, but it is likely that it came off the press the following year.

Reyser printed thirteen editions of service books for Würzburg with two sizes of gothic plainchant type: nine missals, an agenda, a *Vigiliae mortuorum*, a gradual, and an antiphonal (see **Table 2.1 in the Appendix**). In addition he printed in 1482 the first missal for the diocese of Mainz. His Very Large Antiphonal type was created for the Würzburg choirbooks of the 1490s, spaciouly laid out on nine staves per page (see **Illustration 2.1 in the colour section**). The strong verticality and regularity of the neumes are proof that the bishop had made a good investment in the Strasbourg printers. Note the tightly abutting staff segments that make up the staves and the regularity of the double lines at the margins. ~~A photograph of An extant set of a sixteen~~ fifteenth-century steel punches for double-impression plainchant type staff lines gives a notion of their extraordinarily large size. ~~The of such a punch for a 4-line staff segment is 7 inches in height, and type created from it.~~⁸ The engraver had to carve lines that extended to the very ends of the steel face of the punch so that printed segments would abut, unlike most type characters such as ~~the~~ clef signs that were carved in the centre of a punch, to be surrounded by space on a piece of type.

Georg Reyser was the *Hofbuchdrucker* and as such probably wore the livery of the bishop on fine occasions, as did Gutenberg in Mainz. About one-half of his printed editions were devoted to government printing, broadsides or short pamphlets about laws and official news. His press and types would have been the property of the bishop and his work would have been done only upon the order of the bishop. Rudolph subsidized and controlled the press, and paid for the creation of two sets of music punches as well as alphabetic types of extremely fine design. Only after Rudolph's death [in 1495](#) was Georg awarded the right of citizenship by his successor, after which [in addition to his liturgical editions](#) he printed a few songs and other works in German before his death in 1504.⁹

Eichstätt: Michael Reyser and Prince-Bishop Wilhelm von Reichenau

Our next example is Michael Reyser, the relative of Georg who is described as the owner of the house in Strasbourg in which their printing shop was located. By 1479 Georg Reyser had moved to Würzburg to serve Rudolph. In that same year he was awarded citizenship in the duchy of Eichstätt, southeast of Würzburg. The bishop of Eichstätt commissioned Georg to print in Würzburg two breviaries for Eichstätt in 1483 and 1484.¹⁰ But the bishop's plans for Georg seem to have changed, and Michael would move to Eichstätt instead of Georg.

Michael is not mentioned in Georg's contract with the Würzburg bishop, but we know that he was an important part of the printing operation there because of a letter written by Bishop Rudolph in 1480 (April 25) to the magistrate and city council of Strasbourg.¹¹ The letter requested that Michael Reyser, one of the journeymen (*Gesellen*) of the master printer Georg, be released from prison in Strasbourg because the important work of printing missals for Würzburg could not be

completed without him. The following is an extract from the letter, with an approximate English translation:

<p>Dasselbe werck [die Ordnung des gebets und der messebucher unnserss Stieffts] wir dann ettlichen personen die in Ewer Stat gesessenn sind, zu volbringen gegonnet und dorauff bestalt die dann auch das also angefangen unnd ettlich zceythere mit Trucken gearbeyt und doch das noch bißanhere nicht zu ende haben bracht.</p>	<p>We have permitted and subsequently ordered to complete the same work [The order of prayer and missals for our foundation] certain persons resident in your city, who some time ago began to work on the printing but have not yet finished it.</p>
<p>Nu lanngt uns durch die meistere der gemelten Truckerey in unnsere Stat Wirtzburg an wie Michel Reyser der irer gesellen einer und zur Truckerey vast nutzbar sey, etlich Handels halbenn von euch zu verhefftigung bracht, Darnach uff einen bestalt zum Rechten auß der gefengknuss gelassen unnd aber itzt wider doreyn gelegt wordin ist, villedicht uf die meynung gegen ime mit der tate zu gebarn, das doch die Recht nicht erheischenn, Dadurch wir zu volbringung unnsers furgenomenn wercks [die Ordnung des gebets und der messebucher unnserss Stieffts] mangel haben.</p>	<p>Now it has been brought to our attention by the masters of the same print shop in our city of Würzburg how Michel Reyser, one of its journeymen, who is very useful to the print shop, was taken into custody at your command because of some business, was then released following a reversal of judgment, but has now been incarcerated again, perhaps because some believe that proceedings should be taken against him in a matter which the laws nevertheless do not demand. To complete the works we have undertaken [The the order of prayer and missals for our foundation] we have need [of him].</p>
<p>Wann nu uns und unnserm Stiefft</p>	<p>Since we and our foundation are</p>

<p>zu enffung des dinst gotes doran nit geringe Sundern gross und mercklichen ist gelegen wue wir durch die abwesennlichkeyt des gemelten Michels ver hinderung haben Biten wir euch gar mit besondern vleiss gutlich ir wollet das furnemen das got dem Almechtigenn seiner Liebenn mütter Maria und unnsern Lieben Heyligen patronenn obgemelt zu Lobe unnd Ere beschiet Auch unnsers Stieffts notdurfft und guttat so dorauß enstenn werden, ansehenn und den benanten Michel unns zu gefallen auß dem gefengknuss komen lassen, ine auch gegen der widerpartheye wue es die notdurfft erfordert zu Recht stellen und slewnigkeyt des Rechten verhelffen; wurde er nu gegen seiner widerpartheye umb obgemelte verhandlung im Rechten ichts verlußtig, das müßt er verbussen.</p>	<p>under no small responsibility, or rather under a very great and conspicuous one, of ensuring the reception of the divine service, which is impeded by the absence of the said Michel, we therefore entreat you kindly, with particular earnestness, that you consider this decision - to the praise and honour to God the Almighty, His dear mother Mary, and our above-mentioned holy patrons, and also in consideration of our foundation's plight and the benefits that would arise from this - and do us the favour of releasing the aforementioned Michel from prison, reverse the decision regarding the opposing party as necessity demands and see that justice is done swiftly. If in the above-mentioned case he loses anything legally to the party opposing him, he must make that good.¹²</p>
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While we shall never know what caused Michael's imprisonment, or even why he had returned to Strasbourg, it is clear that liturgical printing in Würzburg had been halted by his absence and the bishop himself was moved to request his release. What was Michael's unique talent required for such books? Georg Reyser had already demonstrated competence in printing breviaries in Strasbourg¹³ and then in Würzburg, so he would have been expert in two-colour printing in different sizes of type, but breviaries do not usually include music. What is new in 1481 is the beginning of printing of liturgical books that

do include music, the first of thirteen that would be issued in Würzburg. Is it possible that Michael Reyser was the music printer of the books assigned to Georg Reyser, that it was his expertise in setting music type that was required to complete the Würzburg liturgical books? Was he also the creator of the music types, cutting the designs in metal, a true music specialist? We now know from the letter written by the Würzburg bishop to get Michael out of prison that he had been working for Georg in Würzburg before April 1480, the date of the letter, and presumably during the entire period of Georg's residence in Würzburg. Apparently the bishop's plea was successful in releasing Michael to return to Würzburg to complete a trio of books with music, missals for Würzburg and Mainz, and an agenda for Würzburg. We also know that further liturgical books for Eichstätt were printed not by Georg but by Michael himself, in Eichstätt, so apparently Michael was able to secure a lucrative contract for himself in the process of being extricated from prison.

Michael's career as a printer of his own editions is known solely from those done in the service of Bishop Wilhelm of Eichstätt (1425–1496) between 1483 and 1494. His sixteen editions include the statutes of the diocese and three missals for the diocese (1486, 1489, 12 July 1494)¹⁴ plus government broadsides and pamphlets.¹⁵ Finally a music book, the *Obsequiale* of Eichstätt (1488),¹⁶ was printed with music on 90 of 200 pages from a new music type (see **Illustration 2.2 in the colour section**).

A comparison of Michael's music printing to that of Georg in his missals reveals many similarities of type designs and type composition. Both men print staves with uneven metal rules. They both print one red line at each side, placing clef and custos within those lines. The common note, the virga, is the same size and shape for both, as is the lozenge.

While Georg's Large Missal type uses the custos for the F clef, Michael has a new distinctive F clef and many more designs. But the new Very Large Antiphonal Type used by Georg for his choirbooks with its staff lines from cast metal segments is far advanced, the product of a more refined typesetter.

Bamberg: Johann Sensenschmidt and Prince-Bishop Philipp von Henneberg

The printing career of our next example of ecclesiastical patronage ~~is~~ was not limited to the service of a single bishop. Like the Reysers and Erhard Ratdolt in Augsburg, Johann Sensenschmidt (1422/32-1491) started his career working independently, printing fifty-five editions in Nuremberg, including three editions of the Bible, two in Latin (1475, 1476) and one in German (between 1476 and 1478).¹⁷ Perhaps because of an intense competition in the printing industry in Nuremberg, in 1479 he moved his printing establishment to Bamberg, east of Würzburg, in order to fulfill contracts to print liturgical books.

That move was at the request of Abbot Ulrich III Haug of the Benedictine Monastery of Michaelsberg which belonged to the Bursfeld Congregation. Sensenschmidt established his print shop in the priory belonging to the monastery to print the first *Missale Benedictinum* (31 July 1481), which contains no music. He continued to print in Bamberg, issuing three liturgical books without music for Bamberg Bishop Philipp von Henneberg (1475-1487);¹⁸ breviaries for Freising (1482-83) and Metz (1485); a *Manuale* for Toul (about 1481?); and an *Obsequiale* for Freising with his partner Petzensteiner (1484 IV 3).¹⁹ Did Sensenschmidt's print shop remain in the priory?

Sensenschmidt was a bookseller as well as printer. One piece of evidence of his participation in the distribution of his liturgical books

comes from the copy of his 1490 *Missale Bambergense* which he sold to Nuremberg merchant Sebald Schreyer, who had it magnificently illuminated by a Nuremberg illuminator. Schreyer commissioned twenty-one vellum Bamberg missals from Sensenschmidt for use at St. Sebald's in Nuremberg.²⁰

Not until 1485 did Sensenschmidt print with metal music type, not in Bamberg but in Regensburg, where he accepted a contract with Regensburg Bishop Heinrich von Absberg to print the first Regensburg missal, completed on 5 March 1485 (see Table 2). The bishop's foreword tells us that the edition was printed at the cost of the city of Regensburg ('expensis ad civitatem ratisponensem') with 'complete characters' ('hunc librum missalem imprimi. ac post impressionem caracteresque completos'). Does the reference to 'characters' allude to the new music type, thus commissioned by the city? It must have been at great cost that Regensburg brought Sensenschmidt's printing establishment to their city. Sensenschmidt's strong dark plainchant type fits well the cast staff segments ([Illustration 2.3](#)). There are few music type designs (note the re-use of the punctum for the custos), but the demands of the syllabic chant to be sung by the priest did not demand a large notational set.

<INSERT Illustration 2.3 HERE >

From 1484 until his death, almost all of Sensenschmidt's liturgical editions were done in collaboration with Heinrich Petzensteiner. An exception is the first edition that includes printed music. In that 1485 missal for Regensburg the bishop credits Johann Beckenhub (1440 to about 1491) as the printer along with Sensenschmidt: 'hunc librum per viros industrios Johannem Sensenschmidt et Johannem Bekenhaub dictum maguntinum opifices iussimus et fecimus impressione

decorari'.²¹ Beckenhub was a native of Mainz who lived there at the time of the first printing in the 1450s. He was a cleric and an author, and is listed in the colophon of one printed book in Strasbourg with Georg Husner (Durand, *Speculum iudiciale*, 1473; GW 9148), though for that book his contribution seems to have been as publisher and corrector. He accompanied Georg Reyser to Würzburg in 1479 as part of Reyser's contract with the bishop where he is listed as a master printer in the bishop's letter for the Würzburg breviary (see above). Beckenhub's only known connection to music printing is the Regensburg missal, but since it is the first music book printed by Sensenschmidt it seems significant that Beckenhub was brought in as a partner for the venture.

Let us review the chronology of music printing. Nothing is known about the publication of the first printed music in a gradual of about 1473, assigned to South Germany (Constance?).²² The second printed music in Germany appeared in a *Missale Basiliense* dated 'not after 1481' and printed by Bernhard Richel, who died between Feb. 2 and June 8, 1482.²³ Beckenhub accompanied Reyser to Würzburg in 1479, where the third printed music appeared 'after November 8, 1481.' Thus when Sensenschmidt and Beckenhub's printed music was issued 'after March 5, 1485' with the fourth music type, music printing was still in its infancy and very few typographers in Germany (one?) could have known how to create a font of music type and print with it. The presence of Beckenhub in Mainz at the time when printing began, and then again in both Würzburg and Regensburg when music fonts would have been cut and cast, is a remarkable coincidence. Beckenhub went on to win the right of citizenship as a bookman in Regensburg in 1487. From 1489 to 1491 he was a partner of Anton Koberger in Nuremberg.²⁴ The fact that Beckenhub is listed as an equal partner in the bishop's preface signifies that he played an important role in

Sensenschmidt's first printed music book. That role was not as financial backer since the preface clearly states that the book was printed at the expense of the city of Regensburg ('expensis ad civitatem ratisponensem'). The preface states that the missal was printed once the characters had been finished ('hunc librum missalem imprimi. ac post impressionem characteresque completos'), emphasising the new presence of complete type characters.²⁵ While there is no indication that Beckenhub was himself a typographer, as a cleric trained in plainchant he could certainly have advised on the music type designs that were cut for the book.

All but three of the next eleven fifteenth-century printed music books of Sensenschmidt and his successors included Heinrich Petzensteiner as partner or major printer (see [Table 2.2](#)). Petzensteiner had issued one book on his own, the first printed German arithmetic book,²⁶ before joining Sensenschmidt and his successors from 1484 to 1494, after which he is unknown. The two missals for Olomouc (~~Olmütz~~) and the missal for Augsburg are the only music books not attributed to Petzensteiner as a partner.²⁷ Financial backing for missals for Olomouc and Prague was arranged through Peter Drach the Elder (1430–1489), as detailed in his account books.²⁸

In 1482 Bishop Sixtus von Tannberg of Freising in Bavaria commissioned Sensenschmidt to produce liturgical texts for his diocese, and the printer issued in Bamberg that year a breviary, followed by an obsequiale in 1484. The bishop apparently was not completely satisfied because in the first missal for Freising he stated in the foreword that such an edition was only possible if the bishop and the print shop were in the same place. Thus Sensenschmidt had to move again, south to Freising in Bavaria, where the *Missale Frisingense* was finished on 31 August 1487.²⁹ Sensenschmidt was back in

Bamberg to print two missals in 1488 for the bishop of Olomouc. Next the bishop of Augsburg requisitioned his services in Dillingen, the site of the episcopal residence, to print the first missal for Augsburg in 1489³⁰ at a time when Erhard Ratdolt did not yet have music type. Though Sensenschmidt is often called a peripatetic printer or *Wanderdrucker*, it was the demands of his ecclesiastic patrons that forced him to move.

Apparently Sensenschmidt's music type belonged to him rather than to a bishop. After his death in 1491 his son and his brother-in-law, Johann Pfeyl, would use it to print fifteen music books in fifteen years for dioceses from Augsburg to Olomouc and Prague in Bohemia.

Augsburg: Erhard Ratdolt and Augsburg Bishops Johann II von Werdenberg and Friedrich von Hohenzollern

After an impressive printing career in Venice, Erhard Ratdolt (1447–1519) was brought back to Augsburg, the city of his birth, at the summons of Augsburg Bishop Johann II von Werdenberg (about 1430, reigned 1469–1486) to print liturgical books for the diocese of Augsburg, south of Würzburg (see [Table 2.3](#)). A letter from the bishop in Ratdolt's first liturgical edition in Augsburg (1487) describes their relationship and, since Johann died in 1486 (February 26), the year Ratdolt came to Augsburg, the contract extends to his successor, Friedrich von Hohenzollern (1449, reigned 1486–1505). One of the last books Ratdolt had printed in Venice was the first breviary for Augsburg, and it must have proven to the bishop that the printer was needed on the other side of the Alps. Unlike the liturgical printers brought to Würzburg and Eichstätt through ecclesiastical summons, Ratdolt continued to issue reprints of his Venetian editions and further first editions of important works, maintaining his professional identity and independence from the bishop's patronage while at the same time

focusing on the production of commissioned liturgical works for Augsburg and eight other South German dioceses (Aquileia, Bressanone, Chur, Constance, Freising, Halberstadt, Passau, Salzburg). Perhaps part of the bishop's lure to bring Ratdolt north was the promise of a monopoly on texts for several South German dioceses.

Only after five years in Augsburg did Ratdolt use a metal music type. His three editions of the *Obsequiale Augustense* printed in 1487 use metal rules for staves plus woodcut gothic notation, a difficult combination since metal rules produce printed lines that are often wavy and irregular (see [Illustration 2.4 in the colour section](#)).³¹ Dissatisfaction with Ratdolt's woodcut music may have occasioned the commission in 1489 of the first missal for Augsburg from Sensenschmidt in Bamberg.

<INSERT Illustration 2.5 HERE>

Ratdolt's music type finally appeared in the 1491 missal for Augsburg,³² a superbly designed gothic plainchant, with many complex neumes and tightly abutting lozenges ([Illustration 2.5](#)). The delay of five years in acquiring a music type suggests that Ratdolt had some difficulty in securing the services of a music type specialist. He does not seem to have been himself a typesetter for either alphabetic or music types, since he introduced no new text types in Augsburg and printed with his Venetian rotunda types until 1522, by which time they were out of step with the types of other Augsburg printers.

Ratdolt first printed only eight staves on a folio page and no rules on the sides. He used the same music type for the larger imperial folio choirbooks, setting nine staves per page, with rules at the side, for a spacious and Italianate look due to the rotunda text types. The clef

designs are rounded alphabetic characters that blend with the rotunda of the text underlay. That blend of clefs to text raises the possibility that the music type may have come from Venice, or at least was cut by someone trained there.

Lübeck: Steffan Arndes and Laurens Leve

The career of Steffan Arndes as a music typographer and printer illustrates an intermediary step between ecclesiastical patronage and entrepreneurial activity, relying from about 1485 to 1494 on a private financial backer with strong ecclesiastical and governmental ties. His move about 1485 from Italy to the town of Schleswig, Denmark, to print the first missal for Denmark was presumably tied to the call of Helrich von der Wisch, bishop of Schleswig from 1474 to 1488, though no letter from him was printed in the missal. That book was financed by Laurens Leve and, with more help from Leve, Arndes moved to Lübeck, the capital of the Hanseatic League, to establish what would become the largest printing shop in northern Germany by the turn of the century. There he printed a Schleswig breviary (1489) and two books with printed music: a gradual for Sweden (1493), a missale for Viborg, Denmark,³³ and a missal for northern Franciscans (1504)³⁴ (see [Table 2.4](#)).³⁵

Born about 1450 in Hamburg and active from 1470 to 1519, Arndes began his printing career in 1470 in Perugia, Italy, where documents describe him as a typesetter and typecaster.³⁶ He worked in Foligno from 1470 to 1472 for Johan Neumeister, one of Gutenberg's printers, and then moved to Perugia (1473–1481) where he worked for Germans Johan Vydenhast and Johannes Reseps. In Italy Arndes moved in high circles, both culturally at the University of Perugia, and financially. He was fortunate to have in residence a distinguished relative from his home town of Hamburg, Dietrich Arndes (1442/43–1506), who was

attending the University (BA in 1461 from the University of Erfurt, doctorate in secular law in 1480 from the University of Perugia).³⁷ Dietrich would be the bishop of Lübeck from 1492 to 1506 when Arndes had his print shop there.

Also in Perugia in the middle of the 1470s lived the son of the man who would be Arndes's financial backer when he returned to Germany. Student Leve Leve, son of wealthy Laurens Leve, would become a chaplain at Lübeck's cathedral upon his return to Germany. ~~Upon~~ When his father's ~~death~~ died in 1495, Leve Leve was designated as the agent to terminate upon his death his father's formal contract with Arndes that had supported his print shop.³⁸ One wonders if the early years in Italy of young Arndes had ~~not~~ been carefully choreographed for his later career in liturgical and vernacular printing in the north.

When Arndes returned north about 1485 to print the first missal for the diocese of Slesvig, he received financial backing from Laurens Leve, who was then a marshal (*Staller*) of the Danish king's council in Slesvig.³⁹ When the missal was complete, Arndes moved to Lübeck, where Leve provided the capital for the construction and maintenance of a printing shop.⁴⁰

<INSERT Illustration 2.6 HERE OR BELOW>

In 1493 Arndes published his musical masterpiece, a gradual for the diocese of Västerås in Sweden (Illustration 2.6).⁴¹ Arndes' impressive plainchant type is a roman design rather than the gothic design more common in northern Germany, though he cut a large formal Canon text type for his liturgical books with the narrow, angular characters common to the Upper Rhine Valley. Note the long-stemmed virga, kerned to fit with the spacing material below it and sometimes slightly

bent. The only other fifteenth-century music type with such long-stemmed notes was used by Christoph Valdarfer in Milan in 1482, but there the stems appear to be separate metal pieces.⁴² The lozenge created by Arndes is kerned so that it can be set very tightly with others for the descending climacus. Almost all of the neumes can be set abutting each other to create complex neumes (podatus next to diagonal of porrectus; podatus next to clivis). The square notes are cut with hairline touches at the corners in imitation of manuscript practice. The flat is an unusual design unique to this font. Arndes used his roman plainchant type one more time, in a missal of 1504 for northern Franciscans of the Province of Dacia (Denmark, Norway, Sweden, Slesvig, Finland, Estonia).⁴³

Entrepreneurial Music Printers

In contrast to the careers of the printers discussed thus far, most early music printers of the 1490s were completely independent entrepreneurs. They were in business for themselves in urban centers where they could raise the capital to purchase property for a printing shop and its materials, assemble a set of types of alphabetic and music design, and decide on a publishing program that would sell. The era of control of music printing by wealthy bishops who saw into production the first titles for their dioceses was replaced by a new generation of trained printers who had to seek a niche in a market economy for music publications that included the church and monastery but reached beyond to the general musically literate population.

Conrad Kachelofen, Leipzig

Conrad Kachelofen (about 1450–about 1529) gained citizenship in Leipzig in 1476 as a merchant of paper, groceries and wine.⁴⁴ With a population of 25,000, a thriving university, and three annual fairs, Leipzig was a major center for the printing industry, with markets in

central and southern Germany.⁴⁵ Kachelofen managed to open a print shop in 1483 and would become the city's most important printer of the fifteenth century. Between 1484 and 1501 he published at least ten editions of the liturgical psalter, a genre that, since it was based on the fixed text of the psalms, did not need the approval of ecclesiastical authorities and thus was open to entrepreneurial publishers (see [Table 2.5](#)). His first psalters merely left blank space for the entry of the text and notation of plainchant music that accompanied the psalms in the services of the Hours – [incipits-intonations](#) of antiphons, verses, and hymns – but Kachelofen did print at least the staves for music in a folio psalter of 1497.⁴⁶ In 1495, he finally had a gothic plainchant type for unauthorized missals for Meissen and Prague,⁴⁷ the last printed with his son-in-law, Melchior Lotter.

The first Prague missal had been printed without music in 1479 in Pilsen in Bohemia. Ten years later reprints began, first by Sensenschmidt and Petzensteiner, then by Georg Stuchs in Nuremberg, and five months later by Kachelofen, with his first printed music on [44](#) pages. The title-page claims in entrepreneurial fashion that it was an emended addition, with many votive masses favoured by the cathedral chapter of Prague, with the calendar of the Prague diocese very usefully displayed, with new readings and commemorations and feasts.⁴⁸ Apparently none of the reprints were authorized by the bishop.

Johann Prüss, Strasbourg

Johann Prüss printed in Strasbourg, one of the largest cities in Germany with a population of 40,000, where he competed with many printing craftsmen for trade. Born about 1447, Prüss emerged in the 1480s as a printer, publisher, and bookseller, gaining the right of citizenship in 1490, and printing there until his death on November 16, 1510. During

his career he owned some 20 alphabetic types, a music type, and numerous wood and metal initials.

With the encouragement of cathedral preacher Jean Geiler von Kaisersberg (1445–1510), a prominent Strasbourg humanist and preacher, Prüss entered upon a program of liturgical printing without any bishop's approval.⁴⁹ Such independent editions between 1492 and 1510 include two agendas, two graduals, ten liturgical psalters,⁵⁰ two editions of the *Missale speciale*, and three diocesan missals – all entrepreneurial undertakings that had to pay for themselves by selling in a market that reached far beyond Strasbourg (see [Table 2.6](#)). When the archbishop of Cracow issued his own official edition of the Cracow missal in 1493, he complained about unapproved editions by 'avaricious and malicious persons.' By then two Strasbourg editions were already out, the one by Prüss about 1490, the other by Martin Schott in 1491.⁵¹

Prüss printed episcopal and monastic commissions as well: 3 agendas, for Strasbourg, Mainz (with music from woodcuts), and Wrocław (with music from metal); a gradual for Strasbourg (with music from metal), a *Vigiliae* for Mainz (with music from metal); a *Vesperale* for Metz (with music from metal), 7 missals, for Constance, Mainz (2) (with printed staves), Wrocław (space for music), Gniezo and Cracow, Cistercians, and Praemonstratensians; 8 breviaries for Mainz (2), Speyer, Halberstadt, Windesheim, the Teutonic Order (2), the Praemonstratensians; 1 psalter, for the Premonstratensians (with staves for music).

Noteworthy among Prüss' non-liturgical editions are four issues of a scholarly treatise on plainchant by Hugo Spechtshart (*Flores Musicae Omnis Cantus Gregoriani*; 1488, 1490, 1492, undated).⁵² He apparently

chose the title well because it was a bestseller that required two reprints within six years. At this time Prüss possessed no metal music type and the ninety-two pages of plainchant neumes in Spechtshart's treatise were printed from woodcuts.⁵³

Seven of Prüss's twenty-four liturgical publications contain music printed from metal type (Table 2.6): an agenda of about 1499, the *Vigiliae mortuorum Moguntinum*, dated "after 1500", a folio psalter of about 1503, three graduals, a *Vesperale* for Metz, and two agendas for Wrocław.⁵⁴ He printed thirteen liturgical editions with metal staves for music.⁵⁵ In addition he printed a *Modus legendi et accentuandi epistolas* with examples from metal music type. The 50-year-old printer finally cut music type and learned to set it, including the demanding melismatic chant of the gradual. Prüss knew music well since he was entrusted with the publication of four editions of the Spechtshart treatise on plainchant. His music type used a small, pointed notehead on a limited number of neumes that align well on the red staff lines.⁵⁶ The wavy rules at the sides, sloppy inking, and somewhat irregular designs deter from a polished appearance.

Conclusion

The model of ecclesiastical subsidy and control of early music printers contrasts sharply with the urban businessmen of the 1490s and later. Monopolistic control has both positive and negative effects, as can be seen in the business world of today. By contracting with some of the best printers of the time, wealthy bishops managed to maintain control of their professional lives, from the creation of types to the development of printing programs to the very housing of their shops and homes. By completely subsidising the establishment of print shops, at times within ecclesiastical walls, and the process of type creation, a bishop gave his craftsmen a place, time and money to design excellent

metal punches for the complex neumes of plainchant, and to lay out music staves on large, folio paper, often Imperial folio size, as well as vellum. Bishops assumed the financial risk of publication, the role of distribution, price fixing and collection of payment from their controlled market of diocesan clergy. The printers became the sole proprietors of printing in their dioceses, with a monopoly on titles and with no competition.

What did the early bishop's *Hofbuchdrucker* give up by accepting episcopal patronage? He was limited to printing liturgy and such government printing as was authorized by the bishop. The print shop and type belonged to the bishop. The printers recruited by bishops had to leave dynamic centres of printing – Strasbourg, Nuremberg, Venice – large trade centres with multiple book markets and developing technical ideas, as well as a labour supply of ambitious journeymen. Since Ratdolt was forced to print his first book with music from woodcuts, and he continued to use his Venetian text types throughout his career, it seems likely that he sorely missed the professional type craftsmen of Venice and took some time to find the right professional to create his music type for Augsburg printing.⁵⁷ In Würzburg, Bamberg, and Eichstätt, music printers were completely dependent on the labour force they brought with them and their technical knowledge, though it is quite likely that they recruited and trained assistants in their new ecclesiastic surroundings. The bishop of Würzburg complained that liturgical printing was shut down when Michael Reyser was in prison. The man was irreplaceable, perhaps the only one around who could cut music punches and compose music type. While bishops' printers uniformly had proven themselves in previous careers of impressive, far-reaching programs, they often gave up the right to break new ground ~~in order to~~by accepting new manuscripts. By moving

to small diocesan seats, they lost access to the distribution and trade networks of large cities.

What impact did the ecclesiastic contracts have on music printing? Since in Germany the first printed music from metal type was limited to liturgical books, the subsidization of music type creation created a mature technology that would later be used by mensural type designers. By restricting the output of major excellent craftsmen to authorized plainchant, ~~lesser figures remained to the~~ creation of type ~~and to~~ print other kinds of music for the burgeoning culturally literate populace of merchant towns was left to lesser figures. By establishing monopolies on liturgical titles, bishops removed lucrative titles from the hands of entrepreneurs. While that was effective in Würzburg, Eichstätt, and Bamberg, we have seen that once a diocesan first edition was printed, unauthorized reprints were not infrequent.

Did the control of major music craftsmen delay the move into mensural music printing? A glance at the specimens of plainchant type of such craftsmen should make it clear that they were quite able to cut the designs of mensural music into metal. By the 1490s song sheets and music theory books were being issued in commercial and university towns, but their music was printed from woodcuts rather than expensive music type. Proving that a market for non-liturgical music existed, one monophonic metrical German song went through three broadside editions between 1499 and 1506, certainly over a thousand copies.⁵⁸ The single polyphonic mensural music printed in Germany in the fifteenth century, a chorus for a humanistic dramatic piece, was printed from woodcuts in the small university town of Freiburg in Breisgau.⁵⁹

But even our entrepreneurs – Kachelofen and Prüss – in the commercial centers of Leipzig and Strasbourg limited their music printing from metal type to liturgical music, with a guaranteed market. Creating a font of music type took months of laborious design and cutting of metal punches, followed by more time training a compositor to set that type, a man recruited as a knowledgeable reader of music notation as well as able to compose type. The finished products of the entrepreneurs could not compare with the subsidized accomplishments of a bishop's *Hofbuchdrucker*. Printers like Kachelhofen and Prüss had to compete with several printers in town. No wonder Kachelhofen kept his shop in the Rathaus to sell paper, groceries and wine, and Prüss kept printing psalters with only metal staves for music. Is it any wonder that non-liturgical music printing from metal was initiated by Petrucci in Venice, a city of 100,000, with well-developed printing and typefounding industries, music specialists, and a far-reaching distribution network?⁶⁰ The scenario of prince-bishops who sought to continue the original Mainz pattern of containment, secrecy and control of printing within their governed territories would soon give way to modern well-financed music printing specialists in major commercial centers. But credit must be given to those bishops who financed with the highest standards the technology of printing – including music – to accomplish their goal of providing reformed texts to dioceses.

APPENDIX

[insert Tables 2.1-2.6]

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¹ Holy Roman Empire. Ecclesiastical Organization, c. 1500. Map by Dr. Andreas Kunz. http://germanhistorydocs.ghi-dc.org/map.cfm?map_id=2814. The Province of Mainz is coloured in yellow.

² Duggan, 'Politics and Text.' See also Duggan, 'Fifteenth-Century Music Printing.'

³ Budapest was said to have had its *Liber ordinarius* ready for printing in 1455. Polish canons were working on editing the text of the liturgy at Gniezno in 1433 and 1469. *Acta Capitulum nec non Iudiciorum Ecclesiasticum*, ed. Bolesław Ulanowski, Monumenta Medii Aevi Historica Res Gestas Poloniae Illustrantia 13 (Cracow: Polska Akademia Umiejętności, 1894). As quoted in Nowakowska, *Church, State and Dynasty*, 75. In 1483 Bishop Jan Rzeszowski entrusted the Cracow breviary to the printing press, but no copy survives. See Ulewicz, *Wśród impresorów krakowskich*, 18–20.

⁴ Nowakowska, 'From Strassburg to Trent,' lists 107 liturgical books commissioned by bishops before 1501. My own research identifies 252 liturgical books printed in German-speaking lands before 1501 and 132 with music or space for it. I described 156 such books printed in Italy before 1501 (see Duggan, *Italian Music Incunabula*, esp. 17, Table 4.) For liturgical books printed in France, Spain, and England, see Weale, *Bibliographia Liturgica* and Bohatta, *Liturgische Bibliographie*.

⁵ *Graduale* [Southern Germany, about 1473], vdm 1107; *Graduale Romanum* (Parma: Damiano and Bernardo Moilli, 10 April 1477), ISTC ig00329800.

⁶ Breviarium Herbipolense ISTC ip01162400. The privilege is given in Latin, English and image in *Primary Sources on Copyright (1455–1900)*, eds. L. Bently & M. Kretschmer, www.copyrighthistory.org, Identifier: d_1479.

⁷ Sigmund Freiherr von Pölnitz suggests that the printing shop was in the **Hochstift** within the walls of the residence, high above the city. See Chapter 5, 'Rudolf von Scherenberg. Vollendung der Reform,' *Die bischöfliche Reformarbeit*, 124. Rudolph also commissioned an impressive copper engraving of himself, his arms and those of the Cathedral chapter that opened the five missals, two breviaries and an agenda, spreading the image of his authority and power in thousands of copies. Reproduced in Hubay, *Incunabula Würzburg*, Plate 11.

⁸ [ST 60, Museum Plantin-Moretus, Antwerp. See the author's 'Notendruck. Bis 1500,' MGG Sachteil VII \(1997\), col. 433-42, Fig. 1.](#)

⁹ The songs include *Mannslob. Ein Mannslob in der Briefweis [Lied]*, about 1500 (ISTC im00210500) and *Soffey. Historie des Grafen von Soffey (Savoy)*, about 1495 (ISTC is00612150).

¹⁰ *Breviarium Eystettense*, ISTC ib01161000 and ISTC ib01161300.

¹¹ The author thanks Prof. Elaine Tennant and Grantley McDonald for their advice on the translation. For a discussion of the letter, see Ohly, 'Der Brief des Würzburger Fürstbischofs.'

¹² City Archives of Strasbourg, IV 16/97. On the reverse is the address to the 'Burgermeistern und Rate Straßpurger', and the letter ends 'Würzburg, Tuesday after Jubilate Sunday [the third Sunday after Easter (25 April)] 1480.'

¹³ *Directorium Argentinense*, commissioned in 1477 by Rupert, Duke of Bavaria, Bishop of Strasbourg, and Johannes de Helffenstein, Dean of the Chapter, ISTC id00261800, printed [1478]; *Breviarium Argentinense*, commissioned by Rupert, Duke of Bavaria, Bishop of Strasbourg, ISTC ib01146650, published 12 January 1478; *Breviarium Argentinense*, commissioned by Rupert, Duke of Bavaria, Bishop of Strasbourg, ISTC ib01146600, printed 12 January 1478.

¹⁴ 1486: ISTC im00659300, 1489: ISTC im00659500, 1494: ISTC im00659600.

¹⁵ Michael Reyser had some difficulty printing a correct text of the Eichstätt missal. Schilf, 'Ein Druckfehlerverzeichnis.'

¹⁶ vdm 1108.

¹⁷ Randall Herz, 'Sensenschmid(t), Johann(es),' *Deutsche Biographie*, www.deutsche-biographie.de, March 31, 2015.

¹⁸ *Agenda Bambergensis*, 1481; two breviaries, with Heinrich Petzensteiner, dated 21 February 1484 and 10 September 1484.

¹⁹ Herz says that the *Obsequiale* for Freising included printed red staff lines, but a review of the Munich BSB copy online (links on ISTC and GW) proves that no space for music was left in the edition. Sensenschmidt also printed broadside governmental work for Bamberg Bishop Heinrich and his successor, Heinrich Gross von Trockau (1487-1501). Sensenschmidt's early printing program in Bamberg of Horace, Cicero and Cato as well as some German pamphlets would seem to be his own entrepreneurial undertaking.

²⁰ Herz, 'Ein neu aufgefundenen Geschäftsvertrag.'

²¹ *Missale Ratisponense*, ~~vdm 1054~~, fol. π8^v, [vdm 1054](#).

²² vdm 1107.

²³ vdm 1108.

²⁴ Ferdinand Geldner, 'Beckenhub (Beckenhaub, Bekenhub),' *Deutsche Biographie*, www.deutsche-biographie.de, Dec. 15, 2015. Beckenhub identified Koberger as the printer of their 1491 (GW M32527) *Libri Sententiarum* of Peter Lombard ('Quo libri impressor Nurnberge Anthonius ipse Koberger tendat post sua fata precor') in a laudatory poem at the beginning of the volume. A letter by Nicolaus Tinctor to Beckenhub follows that poem, praising Beckenhub's scholarly work.

²⁵ See note 21.

²⁶ Bamberg, 1483 IV 15; GW M37209.

²⁷ *Missale Olomucense* (~~04/03/1488 III 4~~), vdm 1058, *Missale Olomucense* (~~31/03/1488 III 31~~), vdm 1059.

²⁸ After the death of Bishop Protasius of Olomouc in 1482, the cathedral chapter could not agree on a successor. John Filipec, Bishop of Várad, served as administrator of Olomouc from 1484 to 1489 but appears to have played no role in the publication of the Olomouc missals. ~~A~~ [The](#) fragment of about a quarter of Drach's account books ~~was~~ found in 1957. ~~It~~ contains entries for five liturgical books with music (four with staves, two with notes and staves). Geldner, 'Das Rechnungsbuch.' Peter Drach the Elder opened a printing shop in Speyer about 1475, a business continued by his son Peter Drach the Younger (about 1456-1504). They worked as printers, publishers, and jobbers with a network of over fifty agencies and outlets throughout Germany.

²⁹ vdm 1057.

³⁰ vdm 1060.

³¹ *Obsequiale* (a): vdm 1071, *Obsequiale* (b) vdm 1072, *Obsequiale* (c) vdm 1073.

³² vdm 1074.

³³ vdm 1091.

³⁴ vdm 1017.

³⁵ With the support of Laurens Leve, Arndes was able to pursue an ambitious independent publishing program that included Bibles and prayerbooks in Low German and a spectacular *Hortus sanitatis* in Low German (*Gaerde der suntheit*) with 542 woodcuts, reminiscent of his elaborate Italian publications. Evidence of his financial stability is his marriage in March of 1493 to the widow Anneke Hog in a union that would produce a son Hans who would inherit the business upon his death. Bruns and Lohmeier, *Die Lübecker Buchdrucker*, 36–37, 69–73.

³⁶ Arndes' early work in Perugia as a typefounder and typesetter is documented by court records of 1476–77 involving salary disputes. Levin, *Stephan Arndes*, 10–11. A man named Crafto (Kraft?), identified by Konrad Haebler as the first named specialist in typefounding, stated in 1477 that a German named Steffen Arndes assisted him in making punches and justifying matrices ('ad limandum et aptandum punctellos matrices ad limandum dictas matrices' [for filing down and adjusting punches for matrices and justifying said matrices]). Rossi, *L'arte tipografica*, 24. Crafto also taught Arndes how to 'make a suitable mold for casting letters for printing books' ('unum instrumentum aptum ad jactandum litteras ad imprimendum libros'). Arndes had formed a partnership with Crafto in the early 1470s and is said to have written a manual on typecasting. Faloci Pulignani, 'L'arte tipografica.' His expertise in types is apparent in the roman and gothic rotunda types he used to print books in Perugia from 1481, but he created new gothic rotunda and gothic textura types when he moved back to the north.

³⁷ Dietrich Arndes then spent a remarkable few years with the Roman Curia where he was a notary and *familius* of Pope Sixtus IV and also a friend of Cardinal Francesco Todeschini-Piccolomini, later Pope Pius III. In 1482 Dietrich returned to Germany with a benefice at Speier conferred by the pope. Gatz, *Die Bischöfe*, 246.

³⁸ The contract states that 'the print shop of the printed works' ('der druckerye offte prentewerckes eyne tidt her selschup tosamende gehatt'), had been in existence for some years ('etlicke jar'). Bruns and Lohmeier, *Die Lübecker Buchdrucker*, 36.

³⁹ Christensen, *A Study of the Mass*, 31. Leve had been ennobled with a coat of arms by Pope Pius II in 1462.

⁴⁰ A house was purchased in 1488 on the corner of Königstrasse and Fleischhauerstrasse, and in 1492 the enterprise was enlarged with the purchase of an adjoining house. Bruns and Lohmeier, *Die Lübecker Buchdrucker*, 36; Geldner, *Die deutschen Inkunabeldrucker*, I: 212.

⁴¹ ISTC ig00333000; 'Printer of the Graduale Suecicum.' The gradual brought into print Swedish music practice with its repertoire of saints and the chants associated with them. With the adoption of Lutheranism as the Swedish state church in the 1530s, copies of the gradual were soon destroyed or recycled as book covers. Those vellum fragments used as book covers were reassembled in a facsimile edition of the gradual, [as Graduale Arosiense, ed. Toni Schmid.](#)

⁴² For a type specimen of Valdarfer's roman plainchant type printed in the *Missale Romanum* of 1 September 1482, see Duggan, *Italian Music Incunabula*, 154–55 and Fig. 56.

⁴³ A fragment has survived as former archival book covers, housed today at the Uppsala University Library and the Royal Library in Copenhagen; Tveltane, 'Gamle bøker og bokbind,' 60–61. [Roelvink, Franciscans in Sweden, 161–62.](#) The Franciscan missal was published by order of the well-known leader of the Observant movement, Anders Glob, who was in his fourth term of office as vicar provincial in Denmark, 1501–1504. [Roelvink, Franciscans in Sweden, 161–62.](#)

⁴⁴The entry in city archives refers to him as 'Contze Holtzhusen alis Kachelofen von Wartberg.' Knopf and Titel, *Der Leipziger Gutenbergweg*, 8.

⁴⁵ Knopf and Titel, *Der Leipziger Gutenbergweg*, 8.

⁴⁶ Folio psalter (1497), vdm 1094.

⁴⁷ *Missale Misnense* (1495): vdm 1092, *Missale Pragense* (1498): vdm 1095, *Missale Misnense* (1500): vdm 948.

⁴⁸ The woodcut artist even adds in words that the arms are those of the Prague diocese.

⁴⁹ Levresse, 'La datation.'

⁵⁰ The liturgical psalters include 8 quartos, 6 with staves for music; 1 sixteenmo; 1 folio with printed notes and staves from metal type.

⁵¹ Prince Frederick Jagiellon, Cardinal and Archbishop of Cracow and Gniezno, foreword to *Missale Cracoviense* ([not before 1493]), fol. r2^r: In order that no avaricious or malicious person should dare to reprint this book, the most illustrious Prince Fryderyk ..., together with his venerable canons of Cracow, hereby solemnly decrees that nobody may reproduce the Cracow missal for this diocese to the detriment of the aforementioned Johannes Haller, under pain of certain punishments. Latin: '... At ne eundem aliquis librum livoris avidus aut invidus. in eius detrimentum imprimere de novo audeat Illustrissimus princeps Fridericus ... una cum suorum venerabilium canonicorum cracoviensium. cetu firm[i]ter sanxit: que non alter suorum diocesium quispiam de novo in prefati Johannis Haller detrimentum hoc missale cracoviensis rubrice imprimere audebit: sub certa indicta pena: in data desuper copia descripta.'

⁵² 1488: vmd 1105, 1490: vdm 1106, 1492: vdm 865. Digital facsimiles of the copies of the 1488 and 1492 editions from the Bavarian State Library, Munich, can be found through links at GW and ISTC. See also Gümpel, *Hugo Spechtshart von Reutlingen*.

⁵³ Three books of provincial statutes assigned to Prüss do not name a bishop but must have been printed at the diocese's command: *Statuta provincialia Moguntinensia* ([1484–1487?], ISTC is00749000; *Statuta Curiensia* (Chur), [about 1493–94?]; ISTC is00733800; BSB-Ink S-545 assigns the *Statuta Gnesnensia* (Gnesen) to Prüss, about 1489–91; GW and ISTC assign the edition to Peter Drach in Speyer, before 1500; ISTC is00739200; GW M43463.

⁵⁴ The folio psalter is titled *Psalterium Constantiense* in GW M36294 and dated about 1503/1504(?). The unauthorized agenda of about 1499 (GW 457; ISTC ia00157620) has a variant incipit stating that it was for Chur, Switzerland.

⁵⁵ Prüss continued in the sixteenth century to print liturgical genres without music: *Missale Moguntinum* (Strasbourg: Johann Prüss, between 1502 and 21 Dec. 1504), web facsimile of Trier StB, moves directly from Temporale, f. CVII, to Sanctorale (no Canon); with blank space for chant above text ("Exultet iam" on three leaves following ff. CCXXVIII ISTC im00675300. *Agenda sive Exequiale sacramentorum* (Strasbourg, 1505), VD16 A 616, BSB-Ink R-198. WWW facsimile of Munich, BSB, 4 Inc. s.a. 56 h.

⁵⁶ Prüss used a special character (clivis) in the margin of his psalters to inform the chanter when to break the psalm tone.

⁵⁷ In 1516 the Venetian music typesetter Jacobo Ungaro claimed to have worked there for forty years [and thus would have been available to Ratdolt](#). Duggan, *Italian Music Incunabula*, 38–41.

⁵⁸ The sequence *Verbum bonum*, translated by Sebastian Brant as *Das wort ave lond uns singen* (Pforzheim: Thomas Anshelm, about 1500), ISTC iv00127600; [Pforzheim: Thomas Anshelm, about 1502–05], ISTC iv00127590; [Pforzheim: Thomas Anshelm, about 1506–09], VD 16 E-4286 (vdm 116, 120 and 122).

⁵⁹ Friedrich Riedrer, after 5 November 1495; GW M18620.

⁶⁰ For a discussion of Petrucci's music typefounder, Giacomo Ungaro, who had been cutting types in Venice for decades, see Duggan, *Italian Music Incunabula*, 30–41.