

## BACKWARD BELLS AND BARREL BELLS: SOME NOTES ON THE EARLY HISTORY OF LOUD INSTRUMENTS

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In the summer of 1404, Charles the Noble (officially Charles III, King of Navarre and Count of Evreux) was flush with cash. He was in Paris to formally renounce his claim to Evreux and other possessions in Normandy, in return for which the French crown was giving him the title of Duke of Nemours, a guaranteed annual income of 12,000 *livres*, and a lump sum payment of 100,000 *livres*. He was thus, for the first time, in a financial position to become a patron of the arts in the manner of his friend and kinsman, Jean, Duc de Berry.<sup>1</sup> One of his first purchases seems to have been a book of hours which was on the market as it neared completion. We know it belonged to Charles because he had his coat of arms painted on 25 different pages. We assume he bought it on this particular one of the four trips he made to Paris during his lifetime because he had the money, and because the decoration matches other Parisian volumes from this same period.

The book is small in size (200 x 140 mm.)—about the height and width of a modern paperback novel—but it contains over 600 vellum pages, each illuminated with copious marginal decorations of leaves and grotesque figures, and several main illustrations each filling about one-third of a page. Most of these main illustrations were produced by an apparently Bolognese artist known as the Master of the Brussels Initials. A Netherlandish artist, known as the Egerton Master, worked on some of the other main depictions. These two were assisted by numerous other artists, including one Zecho da Firenze (who signed one of the illustrations), two French illuminators, and a Netherlandish illuminator.<sup>2</sup>

It is a stunning visual feast, filled with color and humor. In fact, the whimsical marginal figures call to mind the style of those in the miniature Book of Hours copied for Jeanne d'Evreux, Charles's grandmother, and now in the Cloisters collection. Charles's *Hours*, in perfect condition within an early sixteenth-century Spanish binding, now resides at the Cleveland Museum of Art, having been purchased from the Rothschild family in 1964.<sup>3</sup> The reason the manuscript concerns us here is that its marginal illustrations contain probably more musical depictions than any other surviving Book of Hours: over 180 (not including depictions in the main illustrations nor the literally hundreds of figures with pellet bells dangling).

It is hard not to feel, in paging through the manuscript, that this is a veritable catalog of instruments used in Paris at the beginning of the fifteenth century, and it is tempting, even, to interpret the relative frequency of depiction as a measure of the relative popularity of the various instruments.<sup>4</sup> Handbells, harps, shawms, and straight trumpets each appear fifteen times, lutes and curved horns slightly less, then cymbals, nakers, bagpipes, vielles, and a kind of elongated rebec falling into the next group. Beyond that appear a few triangles, psalteries, rebecs, curved trumpets, portative organs, pipes and tabors, frame drums, and

a single gittern, hurdy-gurdy, double pipe, tambourine, and what may be a recorder.

The frequent appearance of shawms and straight trumpets suggests that they were especially common instruments at the turn of the century. This is, in fact, precisely the period when the straight trumpet was being joined or replaced by the S-shaped trumpet, where makers and players discovered that an instrument in the shape of an S allowed a long sounding length but in a more manageable overall length. Edward Tarr cites a manuscript of the *Chronicles of France* of 1377, now in the British Library, as the earliest known depiction of an S-shaped trumpet.<sup>5</sup> He may be referring to MS Cotton Nero E.II, *Grandes Chroniques de France*, which contains an S-shaped trumpet depiction on fol. 229v. However, Millard Meiss, the leading historian of illuminated manuscripts, dates this manuscript ca. 1415, even though the scene represented—a visit from the Holy Roman Emperor, Charles IV—did in fact take place in 1377-78.<sup>6</sup> If that were not confusing enough, the “misericord” carving of an S-shaped trumpet in the choir stalls at Worcester Cathedral, which some authorities date to 1397,<sup>7</sup> and which would seem to be the next earliest candidate, is thought by other authorities to have been carved as early as 1379.<sup>8</sup> Clearly, however, S-shaped instruments begin to appear more frequently in illustrations around the turn of the fifteenth century and, by about 1415, the S-shape was flopped sideways into the well-known folded shape that has lasted basically to the present day. The earliest depiction of a folded trumpet is in the *Très Riches Heures* of Jean, Duc de Berry.<sup>9</sup> What is curious is the persistence of the S-shape for so many decades after the appearance of the folded shape. It would seem that the greater stability and compactness of the folded shape would have recommended it to makers and players as superior, but not sufficiently so, apparently, to entirely replace the S-shape.<sup>10</sup> It is possible that this relates to the use of the S-shaped trumpet as a slide trumpet, but that is beyond the scope of this article.<sup>11</sup>

The year 1404, at any rate, would definitely seem to be too early for the folded shape found in the *Très Riches Heures*; one would think, given so many musical depictions, that the illuminators of the *Hours of Charles the Noble* would have found a way to include such a novel instrument among the hundreds of musical subjects. They did include one fine S-shaped trumpet (Figure 1) near the end of the manuscript—this compared to fifteen straight trumpets or buisines, as mentioned earlier. What is really startling about the trumpets in the *Hours of Charles the Noble*, however, is the fact that there are two additional instruments of a highly unusual type that I would describe as U-shaped trumpets. These are given as Figures 2 and 3.<sup>12</sup>

To my knowledge, there exists only one other depiction of an instrument like this—in an historiated Paduan Bible from the end of the fourteenth century<sup>13</sup>—and the realism of that instrument is questionable in my opinion (see Figure 4). As an illustration of Chapter 10 in the Book of Numbers, it shows the two silver trumpets that God commanded Moses to make. One trumpet is straight, the other—of identical length—is U-shaped as it hooks back into the player’s face to stay within the heavy frame of the illustration. A companion illustration (scene XXII) shows the instrument maker’s shop, where only straight tubing is shown on the work table, suggesting that the bend in the finished trumpet may have been the artist’s way of keeping the subject instrument within the picture, rather than a depiction



**Figure 1**

S-shaped trumpet (detail) from the *Hours of Charles the Noble* (ca.1405). Cleveland Museum of Art, Purchase from the Mr. and Mrs. William H. Marlatt Fund. 64.40, fol. 316r. All photos from this manuscript reproduced with permission.



**Figure 2**

U-shaped trumpet (detail) from the *Hours of Charles the Noble*, fol. 106v.



**Figure 3**

U-shaped trumpet (detail) from the *Hours of Charles the Noble*, fol. 272r.



**Figure 4**

By permission of The British Library. U-shaped trumpet (detail) from an historiated Paduan Bible (late fourteenth century). British Library, Add. MS 15277, fol. 34, image XXIII.

of a real U-shaped trumpet. This impression is strengthened by the fact that overleaf (scene XXIX), the two instruments are shown with the U-shaped one miraculously straightened. The depictions in the *Hours of Charles the Noble*, on the other hand, are sufficiently detailed to show what appear to be joints in the tubing on either side of the bend (Figure 2). Also, although they are similar, the two Cleveland instruments are enough dissimilar to suggest that they represent different models of the same basic type; in other words, that there were at least two U-shaped trumpets in Paris in 1404 used as a basis for the illuminators' work. For example, the instrument on fol. 272 has a boss near the bell, whereas the other one does not. It is interesting, too, that both players seem to raise one hand as if to assure us that these were not slide instruments.

The existence of the U-shaped trumpet in this manuscript is intriguing for a number of reasons. First of all, as a convincing confirmation of the equivocal depiction in the Paduan Bible, it fills in a gap in the history of the trumpet—a missing link between the straight trumpet and the S-shaped and folded varieties.<sup>14</sup> That the preparation of this manuscript has been dated so precisely to 1404 fits in well with what is already known about the history of the trumpet. Secondly, it points to the year 1404 as the time when makers around Paris, at least, contrived to bend a tube without crumpling it, but were only just discovering that if they bent it twice, they could have the bell pointing in the original direction! It is easy to imagine that players and audience alike quickly found that the bell direction of the U-shaped trumpet was not optimal and that further changes were desirable. Because of its obvious drawbacks, the U-shape depicted here is all the more believable, it seems to me, as a very short-lived intermediate form where makers had discovered the convenience of bending the tube, but not yet all of the ramifications for performance. That the U-shape was an experimental stage that was so obviously flawed is probably why it did not achieve more widespread popularity.

The presence of these anomalies raises the question of whether there are, perhaps, other unique instruments in the pages of this valuable manuscript. One of the interesting aspects of the instrument depictions in the *Hours of Charles the Noble* is the care that the illuminators took to use appropriate materials in the painting. Thus, although there is a very wide palette of colors used from pastels to brilliant hues, the pipes of portative organs, for example, use a now-tarnished metallic paint that has been identified as an amalgam of lead, copper, mercury and silver.<sup>15</sup> This is true also of the cymbals and triangles in the manuscript. The trumpets are mostly depicted in gold leaf although one specimen makes use of that same metallic paint. Shawms, on the other hand, are depicted in light brown, as a rule. There is one puzzling shawm that appears to be done in gold leaf, however, although perhaps there was some confusion over whether it was, in fact, a small straight trumpet. At any rate, that question seems negligible compared to the confusion created by the presence of barrel-bell instruments in the manuscript.

Barrel-bell instruments appear in several late-medieval paintings, mostly, though not exclusively, as manuscript illustrations. There is, for example, the drawing of Ahasuerus's Feast from *Speculum humanae salvationis* (ca. 1400) from the Morgan Library in New York (Figure 5), especially gratifying as a shawm depiction since fingerholes and even vent holes

are visible on the shawms.<sup>16</sup> It is possible that the barrel bells appear in depictions (but not in any surviving specimens) because the artists were simply struggling with the fontanelle covering the keywork of the bombard and mistaking it for a barrel-shaped bell section, as has been done in reverse in modern times. For example, the two barrel-bell instruments in the Morgan Library Catalog issued by the Research Center for Musical Iconography are both described as having fontanelles rather than barrel bells.<sup>17</sup>

Herbert Myers has suggested that the barrel-bell instruments, if they truly existed, may have had some connection to the mysterious “contra” shawm mentioned in early accounts but otherwise unknown.<sup>18</sup> Since contra parts at the time shared the same range as the tenor parts, with occasionally a few extra notes on top, it seems logical that a contra shawm of the early fifteenth century would be the same size as a bombard, receiving a contra designation perhaps through the different tone color created by the barrel bell. It is puzzling, therefore, that depictions of barrel-bell instruments are almost exclusively confined to non-fontanelle instruments. Indeed, a handlist of thirty barrel-bell instruments compiled and very kindly sent to me by Patrick Tröster includes not a single bombard with a barrel bell. The only depiction of such an instrument known to me is that in a fresco in the Palazzo della Manta, shown in Figure 6. Barrel-bell instruments for the most part, then, would seem to be shawms without fontanelles.

The *Hours of Charles the Noble* includes six barrel-bell instruments, apparently quite similar in construction to one another, and shown in Figures 7-12.<sup>19</sup> On the face of it, these are not so very different from other barrel-bell depictions from around the same time, except perhaps that the bell sections are slightly more elongated here. What is surprising, in view of the care of the illuminators in their choice of materials for the depictions, is that all but one of these instruments are shown in gold leaf, and the one exception is shown in metallic paint (fol. 228v.)! What are these instruments? Are they a type of shawm, or are they, perhaps, some kind of brass instrument? Fingerholes and a characteristic, close-handed method of holding the instrument are generally the most secure indicators of a shawm rather than a small straight trumpet, but here, the manner of holding the instruments is equivocal as to shawm or trumpet, and the presence or absence of dots that may represent fingerholes is not conclusive.

A curious coincidence about two of the other surviving barrel-bell depictions is that they come from sources connected with the Orient. One, in the Bibliothèque Nationale, is in a manuscript entitled, *La fleur des hystoires de la terre d'Orient*.<sup>20</sup> The other, in the Morgan Library, is from a manuscript of Marco Polo, *Le Livre des merveilles d'Asie*, showing the Court of Kublai Khan (Figure 13).<sup>21</sup> The former is dated ca. 1403 and the latter is ascribed to the end of the fourteenth century.<sup>22</sup> What this suggests is that, in northern France at the turn of the fifteenth century, barrel-bell instruments may have had some recognized association with the Orient. Interestingly, there is an oriental trumpet, known as a *Hao-tung* (Chinese) or *dokaku* (Japanese), that dates from around this period and that uses a straight, slightly conical tube ending in a cylindrical bell section much larger than the bore of the rest of the instrument, as shown in Figure 14.<sup>23</sup> It seems conceivable, therefore, that the barrel-bell instrument (or instruments) depicted in the *Hours of Charles*



**Figure 5**

Barrel-bell shawm in “Ahasuerus’s Feast” (detail) from *Speculum humanae salvationis* (ca.1400). The Pierpont Morgan Library, New York, MS M.766, fol.64. Reproduced with permission.



**Figure 6**

Barrel-bell bombard (contra?) shawm (detail) from the “Hunting scene” fresco by Giacomo Jaquerio (d. 1453), in the sala baronale of the Palazzo della Manta. Photo courtesy Alinari/Art Resource, NY. Reproduced with permission.



**Figure 7**

Barrel-bell instrument (detail) from the *Hours of Charles the Noble*, fol. 52v.



**Figure 8**

Barrel-bell instrument (detail) from the *Hours of Charles the Noble*, fol. 53v.





**Figure 9**

Barrel-bell instrument (detail) from the *Hours of Charles the Noble*, fol. 101v.



**Figure 10**

Barrel-bell instrument (detail) from the *Hours of Charles the Noble*, fol. 118v.



**Figure 11**

Barrel-bell instrument (detail) from the *Hours of Charles the Noble*, fol. 228v.



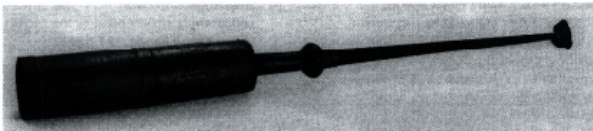
**Figure 12**

Barrel-bell instrument (detail) from the *Hours of Charles the Noble*, fol. 240v.



**Figure 13**

Barrel-bell instrument in “The Court of Kublai Khan” (detail) from *Le Livre des merveilles d’Asie* (ca.1400). The Pierpont Morgan Library, New York, MS M.723, fol.145. Reproduced with permission.



**Figure 14**

*Hao-tung*. Haags Gemeentemuseum. Reproduced with permission.

*the Noble* was not a barrel-bell shawm, but an oriental brass instrument, and that this may be true of the depictions in the Morgan and Bibliothèque Nationale manuscripts as well. The alternative is that the Cleveland instruments represent some kind of shawm, although the elongated bell sections and the use of metallic paints weigh against that possibility.

Thus, there may well have been at least one oriental brass instrument of the *Hao-tung/dokaku* type around Paris at the turn of the fifteenth century to serve as a model for the painters. Since one of the Cleveland barrel-bell instruments seems obviously different from the others in the use of silver metallic paint rather than gold leaf, there may even have been more than one. How would an oriental instrument like this get to Paris?

An oriental presence in medieval France began, not with Marco Polo—although a French version of his account was in Paris by ca. 1310<sup>24</sup>—but with an oriental embassy of the late thirteenth century.<sup>25</sup> French interaction with eastern civilizations at the end of the fourteenth century was dominated by the crusade of 1396, famous in modern times as the fatal campaign of Enguerrand de Coucy as described by Barbara Tuchman in *A Distant Mirror*.<sup>26</sup> In that crusade, the army of the French was completely routed by the Ottoman emperor Bázayíd (or Bajazet), dozens of nobles were killed or ransomed, and thousands of soldiers fell in battle or were brutally executed. The survivors finally straggled back to Paris in 1398. Thus, there was a great deal of rueful fascination in the courts of Europe when the Tartar, Temür (or Tamerlane), began threatening Bajazet himself in 1400.<sup>27</sup> This interest was no doubt further heightened by the presence in France from 1400-02 of Manuel II Palaeologus (1391-1425), Emperor of Byzantium, who was actively seeking support for the protection of Constantinople.<sup>28</sup> In the Spring of 1402, Henry III of Castile sent two envoys eastward to seek news of the confrontation between Tamerlane and Bajazet. On 20 July of that year, Tamerlane met and annihilated the Ottoman army under Bajazet at Ankara (thereby inadvertently delaying the fall of Constantinople by half a century). Immediately after the battle, Tamerlane apparently began thinking of relations with Western Europe. He despatched an embassy to Spain with rich gifts for King Henry,<sup>29</sup> and on August 1, he sent letters to Charles VI of France and Henry IV of England by way of John Greenlaw, English-born Dominican and Archbishop of Sultania.<sup>30</sup> At about the same time, Chateumorand, the French ambassador in Constantinople, left to carry home the news of Tamerlane's victory.<sup>31</sup>

There is no direct proof, but it might be supposed that, one way or the other, the souvenirs making their way to Western Europe at this time included an instrument of the *Hao-tung* type.<sup>32</sup> This seems possible because the two manuscripts associated with the Orient and displaying barrel-bell instruments have a specific association with Tamerlane, and furthermore, a very likely association with each other. The Paris manuscript, *La fleur des hystoires de la terre d'Orient*, continues, *Livre fait d'un Tartar qui se nomme Themirbey que aucuns autres appellent Tamurlan*. Oddly, the "Tamurlan" of *La fleur des hystoires* was Temür Öljeitü, successor to Kublai Khan, who ruled China from 1294-1307.<sup>33</sup> The similarity in the name to the new conqueror was probably what sparked the interest, and may also account for the fuzziness about the "east" of Tamerlane and the "far east." This book, at any rate, was one of three separate copies of the same work that were purchased from

Jacques Raponde (or Rapondi) by Philip the Bold of Burgundy on 24 May 1403.<sup>34</sup> What is interesting about this is that the Morgan copy of *Les merveilles* is bound with a copy of a work with this same title, perhaps one of the other two copies purchased by the Duke. Philip's personal interest may be explained by the fact that his son, the future Duke John the Fearless, had himself led the ill-fated army of Christendom against Bajazet in 1396.

Thus, the heightened awareness of oriental things, begun by the misfortunes of the crusade and sharpened by the comeuppance of the nemesis, Bajazet, at the hands of Tamerlane at the beginning of the fifteenth century, certainly invigorated the market for books on oriental subjects, and may have spurred European artists to include an oriental instrument in their depictions.<sup>35</sup> We may further speculate that if this oriental instrument was drawn from life, the model was newly brought to Western Europe after Tamerlane's victory in 1402, and made available to these northern French artists in the years 1402-04.<sup>36</sup>

One further possibility concerning the identity of this instrument bears mention here. Origins aside, Keith Polk has suggested that the barrel-bell instrument represented in the *Hours of Charles the Noble* may be identified with the *riethoorn*, or "reedhorn," an otherwise inexplicable instrument name that occurs in documents during the years 1400-20.<sup>37</sup> The timing is certainly right and the metal construction combined with ambiguity over reed or brass-type sound production would seem to allow for that interpretation.

It appears, in any event, that not all of the barrel-bell instruments that survive in depictions from around the turn of the fifteenth century are shawms; further study of these instruments is needed, but those discussed here are most likely brass instruments at least in material of manufacture, if not so clearly in method of sound production. We owe this discovery, as well as the preservation of a missing link in the evolution of the trumpet, to the careful observation and workmanship of the illuminators of the *Hours of Charles the Noble*.

## NOTES

<sup>1</sup> According to Millard Meiss, the *Belles Heures* of the Duc de Berry, completed not long after the *Hours of Charles the Noble* in 1408-09, was appraised at 875 *livres tournois* after the Duke's death in 1416, the *Grandes Heures* was appraised at 4000 *livres*, and the *Très Riches Heures*, unbound and incomplete, was appraised at 500 *livres*. See *French Painting in the Time of Jean de Berry: The Limbourgs and Their Contemporaries* (New York, 1974), pp. 80, 322, 143. The standard work on the life and reign of Charles III is José Ramon Castro Alava, *Carlos III el Noble, rey de Navarra* (Pamplona, 1967).

<sup>2</sup> See William D. Wixom, "The Hours of Charles the Noble," and Emanuel Winternitz, "Musicians and Musical Instruments," in *The Bulletin of the Cleveland Museum of Art* 52.3 (March, 1965); Patrick de Winter, "Art, Devotion and Satire: the Book of Hours of Charles III, the Noble, King of Navarre, at the Cleveland Museum of Art," in *The Gamut* 2 (1981): 42-59.

<sup>3</sup> Purchased through the Mr. and Mrs. William H. Marlatt Fund, 64.40.

<sup>4</sup> On the other hand, there may have been a "photogenic" element in what artists chose to depict, and the small cylindrical recorder of the period, for example, was obviously not as interesting visually as many other instruments, even though it may have been used much more than the frequency of depiction suggests.

<sup>5</sup> Edward Tarr, *The Trumpet* (London, 1988), p. 54.

<sup>6</sup> See Meiss, *French Painting in the Time of Jean de Berry: The Boucicaut Master* (New York, 1968), pp. 55, 92-93, pl. 429. In all, there are six other potential sources for this *Grandes Chroniques* reference from the British Library, although I have been unable to identify any further S-shaped trumpet depictions in any of them: the leaves of a *Chroniques* manuscript once owned by the Duc de Berry, later by the Marquess of Bute, in Scotland, and now by the Société des Autographes des Manuscrits Français in Paris, but partially preserved in the British Library as MS Cotton Vitellius E.II (ca.1360-80); MS Add. 21143 (ca.1390-1410); MS Royal 20.C.VII (ca.1400-05); MS Add. 15269 (ca.1400-10); MS Sloane 2433 (ca.1410-20); MS Royal 20.E.I-20 E.VI (1487). On the dating of these manuscripts, see Anne D. Hedeman, *The Royal Image: Illustrations of the Grandes Chroniques de France, 1274-1422* (Berkeley, 1991), pp. 187-89 and the entries for the individual manuscripts.

<sup>7</sup> Reproduced in Canon Francis W. Galpin, *Old English Instruments of Music*, 4th edition rev. Thurston Dart (New York, 1965), p. 149, pl. 49. The 1397 date appears in Galpin's text; the date given on the plate is 1394. The authority on these carvings at Worcester Cathedral is Elijah Aldis, *Carvings and Sculptures of Worcester Cathedral* (London, 1873), which was probably Galpin's source for the 1397 date.

<sup>8</sup> See G.L. Remnant and M.D. Anderson, *A Catalogue of Misericords in Great Britain* (Oxford: Clarendon, 1969), pp. xxx, 169-72. The 1379 date had already appeared in J. Penderel-Brothurst, *Worcester, Malvern & Birmingham (Cathedrals, Abbeys & Famous Churches)*, ed. Gordon Home (London, 1925), pp. 52-53. Some further uncertainty about these carvings arises because the misericords were removed, set aside, and reinstalled in the sixteenth century, and then again in the nineteenth century. Also, although the choir stalls were begun soon after the choir of Worcester Cathedral was completed, there is no way to know precisely when this particular misericord was carved.

<sup>9</sup> Chantilly, Musée Condé, fol. 5v, representation for the month of May. Facsimile edition (New York, 1969).

<sup>10</sup> See, for example, the Lombard Garden Party dating from ca.1470, reproduced in Robert Wangermee, *Flemish Music* (New York, 1968), pl. 84, p. 233.

<sup>11</sup> On the slide trumpet in the fifteenth century, see Peter Downey, "The Renaissance Slide Trumpet: Fact or Fiction," *Early Music* 12 (1984): 26-33; Herbert W. Myers, "Slide Trumpet Madness: Fact or Fiction," *Early Music* 17 (1989): 383-89; Keith Polk, "The Trombone, the Slide Trumpet and the Ensemble Tradition of the Early Renaissance," *Early Music* 17 (1989): 389-97; Ross W. Duffin, "The *trompette des menestrels* in the 15th-Century *alta capella*," *Early Music* 17 (1989): 397-402.

<sup>12</sup> The one on fol. 106v was reproduced in Ross W. Duffin, *RIDIM/RCMI Inventory of Musical Iconography No. 8: The Cleveland Museum of Art* (New York, 1991): no. 85, p. 21.

<sup>13</sup> London, BL Add. 15277, fol. 34. See Sabine Zak, *Musik als "Ehr und Zier" im mittelalterlichen Reich* (Neuss: Pfaffgen, 1979): 156-57, Abb. 11. It is reproduced in both color and black and white in *Bibbia istoriata padovana della fine del Trecento (Saggi e studi di storia dell'arte, 5)* (Venice, 1962): tav. 141/XXIII. I am grateful to Edward Tarr for this reference.

<sup>14</sup> See the catalog of trumpet shapes in Janez Höfler, "Der <Trompette de menestrels> und sein Instrument," in *Tijdschrift van Vereeniging voor Nederlandsche Muzickgeschiedenis* 29 (1979): 106-07. Edward Tarr, in the *New Grove Dictionary* article, "Trumpet" (Vol. 19, p. 215), says, "Around 1400, instrument makers learnt to bend the trumpeter's tubing: first to an S-shape, soon afterwards with this S-shape folded back on itself to form a loop."

<sup>15</sup> The primary medieval authority on metals was Bartolomeus Anglicus, who wrote *De Proprietatibus rerum* ca.1220-40. His work was translated into French ca.1372 by Jean Corbichon; an early

fifteenth-century copy of *Le Livre des propriétés des choses* survives at the Pierpont Morgan Library as MS M.537. Bartolomeus was translated into English in 1582, by S. Batman, and from that translation, concerning amalgams with copper, we read: "If Brasse [i.e., copper] be medded with other mettall it chaungeth both coulour and vertue,...and some is white as silver, & draweth some deale to browne colour, & seemeth gold...." See *Batman upon Batholome* (London, 1582; repr. Hildesheim, 1976): 259.

<sup>16</sup> The Pierpont Morgan Library, MS M.766, fol. 64.

<sup>17</sup> See Terence Ford and Andrew Green, *RIDIM/RCMI Inventory of Musical Iconography No. 3: The Pierpont Morgan Library: Medieval and Renaissance Manuscripts* (New York, 1988), nos. 195, 361.

<sup>18</sup> Herbert W. Myers, "The Musical Resources of the Fifteenth-Century Shawm Band," (D.M.A. Term Project, Stanford University, 1980), p. 8.

<sup>19</sup> The one on fol. 118v was reproduced as Figure 2 in Wixom, "Charles the Noble," p. 51, and discussed in Winternitz, "Musicians," p. 87.

<sup>20</sup> Paris, Bibliothèque Nationale, MS fr. 12201, fol. 10v, reproduced in Edmund A. Bowles, *Musical Performance in the Late Middle Ages* (Geneva, 1983), pl. 36.

<sup>21</sup> The Pierpont Morgan Library, MS M.723, fol. 145.

<sup>22</sup> The late fourteenth-century dating is that of the Morgan Library itself. Millard Meiss gives a date of ca.1412 for the manuscript. See *Limbourgs*, 253, 369.

<sup>23</sup> See J. A. Van Aalst, *Chinese Music* (Shanghai, 1884; repr. New York, 1964): 58, and Arthur C. Moule, "A List of the Musical and Other Sound-producing Instruments of the Chinese," in *Journal of the North China Branch of the Royal Asiatic Society* 39 (1908, repr. The Netherlands, 1989): 98-99. Moule notes that specimens are made of copper or brass and are ordinarily about 36 inches in length (the one in Plate 13 is 90.5 cm., or 35.6 inches; Moule reports that Francis Galpin's was 34.4 inches long). In surviving originals, the section of tubing above the boss telescopes down inside the bell section, a feature which, although apparently for convenience in this case, could conceivably have given rise to the slide trumpet in Europe, since that instrument first makes its appearance around this time. Unfortunately, none of these authorities provides any information on the precise dating of the *Hao-tung*. It was not unknown to Europe before the nineteenth century, however, since it appears in Filippo Bonanni's *Gabinetto Armonico* of 1723 (first published, 1716), labeled *Tromba Cinese*. See *Filippo Bonanni: Showcase of Musical Instruments* (New York, 1964), pl. 15. I am grateful to Adam Gilbert for this reference.

<sup>24</sup> One manuscript of Polo's story, intended for Charles de Valois, brother of Philippe le Bel and founder of the royal house of Valois, bears a note, "Monseigneur Thybault Chevalier Seigneur de Cepoy... il en eust la coppie a messere Marc Pol bourgeois et habitant en la cite de Venise.... Et fut fait l'an de l'incarnation nostre seigneur Jhesu Crist mil trois cent et sept au mois d'aoust." See Frances Wood, *Did Marco Polo go to China* (London, 1995), p. 44.

<sup>25</sup> The most recent treatment of the 1287 visit by this Peking-born Nestorian Christian is Morris Rossabi, *Voyager from Xanadu: Rabban Sauma and the first journey from China to the West* (New York, 1992). See also Wood, *Marco Polo*, pp. 109-10. Rabban Sauma apparently delivered unidentified gifts to Philippe le Bel in Paris and discussed the possible recapture of Jerusalem.

<sup>26</sup> Tuchman, *A Distant Mirror: The Calamitous 14th Century* (New York, 1978), Chapters 26-27, especially pp. 538-77. The court chronicler, Froissart, is clearly appalled but deals with the episode repeatedly from the gathering of the forces to the return of the ransomed nobles. See *The Chronicles of Froissart*, tr. John Bouchier, Lord Berners (London, 1904): chapters 203-21, pp. 435-55. The most extensive treatment is in Joseph Delaville Le Roulx, *La France en Orient au xive siecle: expéditions du maréchal Boucicaud* (Paris, 1886), vol. 1, book 3, pp. 209-334.

<sup>27</sup> See *Clavijo Embassy to Tamerlane 1403-1406*, trans. Guy Le Strange (New York and London, 1928), pp. 4-5, 24-25.

<sup>28</sup> Ironically, it is thought that some turn-of-the-century depictions of the visit of the Emperor Charles IV to the Court of France—the 1378 scene of the *Chroniques* trumpet cited above—in fact represent the 1400-02 visit of Manuel. See John W. Barker, *Manuel II Palaeologus (1391-1425); a Study in Late Byzantine Statesmanship* (New Brunswick, NJ, 1969): 537-39.

<sup>29</sup> Not much is known about the gifts, but they seem to have included jewels and two Christian maidens, one of whom was reportedly the granddaughter of the King of Hungary. The kings of Hungary in the fourteenth century were of the Houses of Anjou and Luxembourg, so this would have aroused added interest in France. See *Clavijo*, p. 340, n. 3.

<sup>30</sup> See Delaville Le Roulx, *La France en Orient*, vol. 1, p. 391. Charles's response to Tamerlane's letter is dated June 15, 1403 while that of Henry IV is undated. For Henry's letter, see Sir Henry Ellis, *Original Letters Illustrative of English History*, 3rd series, vol. 1, pp. 54-58. John Greenlaw was also known as Archbishop of the East.

<sup>31</sup> See Barker, *Manuel II Palaeologus*, p. 219. Chateaumorand was apparently in Paris by September, 1402. He must have come heavily laden: an inventory of the religious relics brought by Chateaumorand and acquired by Jean de Berry is given in Delaville Le Roulx, *La France en Orient*, vol. 2, pp. 76-77.

<sup>32</sup> If so, there may be interesting implications for the history of instrument making in Europe, since there are Ming Dynasty coins made with refined zinc dating from 1403-24, and finished Chinese brassware made with refined zinc certainly began entering Europe in the late middle ages. See Leslie Aitchison, *A History of Metals* (New York, 1960), pp. 325-26. On brass manufacturing for instruments, see Robert Barclay, *The Art of the Trumpetmaker* (Oxford, 1992), pp. 33-59. Also, since barrel-bell shawms began appearing in European depictions around this time, it is possible that they were made in response to this oriental model, even though the model was a brass instrument. On the musical interchange between the Orient and Western Asia, see Henry George Farmer, "Reciprocal influences in music 'twixt the Far and Middle East," in *Studies in Oriental Musical Instruments* (Glasgow, 1939), pp. 3-17.

<sup>33</sup> The text of *La fleurs des hystoires* is printed in *L'Extrême orient au moyen-âge*, ed. Louis de Baecker (Paris, 1877), pp. 89-255. It is clear that the author, Hayton, uses "Tartar" the way we would use "Mongol": "Le grant empereour des Tartars, celui qui ores tient la seigneurie est nommez Tamor Kaan, et est le VIe empereour, et au royaume de Cathay tient le siège de son empire." See p. 215. Also, the form of the name "Themirbey" is similar to the Latin dative address used by Henry IV for Tamerlane: "Themurbeo." See Ellis, *Original Letters*, p. 56.

<sup>34</sup> One copy was given by Philip to Louis d'Orléans and another to Jean de Berry. There is some disagreement as to whether Paris BN fr. 12201 is the copy retained by Philip or the one given to his brother, Jean. See Patrick de Winter, *La Bibliothèque de Philippe le Hardi, Duc de Bourgogne (1364-1404)* (Paris, 1985), pp. 208-10; and Meiss, *Limbourgs*, p. 345.

<sup>35</sup> French medieval interest in oriental things and its relation to art is discussed in Meiss, *Boucicaud Master*, pp. 42-46, 61. The most extensive historical treatment of the subject is in Delaville Le Roulx, *La France en Orient*.

<sup>36</sup> One other possibility is that the instrument was brought to France by Manuel II in 1400, but we have no information whatsoever on the presumably copious gifts brought by the Emperor at that time. See Gustave Schlumberger, *Byzance et Croisades* (Paris, 1927), p. 99.

<sup>37</sup> Correspondence with the author, October, 1997. On mentions of the *riethoorn*, or *rietpijpe*, see Reinhard Strohm, *Music in Late Medieval Bruges* (Oxford, 1985), pp. 77, 80. It is interesting that Francis Galpin, who owned a selection of Chinese trumpets, noted concerning the related *Hao*, that



“the form of the mouth-piece shows a close affinity to the Double Reed Principle” (quoted in Moule, “Sound-producing Instruments,” p. 102). Certainly, the small bore at the upper end of the *Hao-tung*, combined with the very shallow mouthpiece closely resembling a shawm pirouette, could probably be accommodated fairly easily to a reed.