From Hornet to Cornett: In Search of the "Missing Link"

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Although as a cornettist I spend most of my time immersed in the vocal and instrumental repertoire of the sixteenth and seventeenth centuries, I have always held a special affection for the music of a century or two earlier. But however much I would wish to lay claim to the treasures of the Burgundian School of Dufay and Binchois, or the fabulous repertoire of Machaut or Landini in the *trecento*, I have never been convinced that there is real evidence for the existence of my instrument before the latter part of the fifteenth century. The "cornett" article in the *New Grove Dictionary of Music and Musicians*, however, draws upon a range of iconographical sources that would seem to suggest a much older history for instruments of cornett type ("trumpets with fingerholes," in the parlance of Hornbostel and Sachs).[1] So I decided to investigate further, and I have revisited and re-evaluated some of this iconographical evidence. This is a subject of ongoing research, and I offer my findings here with some diffidence, as but a first step towards a fuller understanding of the origins and early history of the cornett.

The cornett is widely considered to have an animal-horn ancestry, suggested not least by the shape of the familiar curved form of the instrument and its Latin-derived name (a diminutive of *cornu* = horn). The etymology of the curious French name, *cornet-à-bouquin*, may perhaps derive from the medieval French *bouc* (= goat, rather than a literal modern translation of *bouquin* = book), while it has been suggested that the German name *zink* may derive from a medieval word for the tine of a stag's antler.[2] The lip-vibrated fingerhole animal horn has a long and virtually unbroken history spanning at least a millennium. It seems to have been known in many parts of Europe during the Middle Ages, although it has always had a special association with Scandinavia, in parts of which it is still played as a folk instrument. Of the surviving instruments of this type, at the earliest extreme is a stunningly well-preserved ox-horn (Swedish: *hornet*) with four holes in the collection of the Dalarnas Museum in Falun, Sweden, that has been dated to the tenth century (Figure 1);[3] while in more recent times, the sound of the Norwegian *bukkehorn* (a four-holed ram's

Figure 1: 10th-century ox-horn. Falun, Sweden, Dalarnas Museum.

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horn), played by Odd Sylvarnes Lund, was beamed around the world from the opening ceremony of the 1994 Winter Olympic Games in Lillehammer, Norway. When played by such a fine musician as Lund, the fingerhole horn has a compelling and haunting beauty.[4] Nevertheless, its restricted tonal ambitus means it has limited possibilities as an ensemble instrument, and is normally played solo in the Scandinavian folk traditions. So, how and when did the transition from rustic animal horn to the sophisticated virtuoso and ensemble instrument of the Renaissance occur? Can iconography provide some answers?

It is generally understood that the first pictures of what appear to be animal horns with fingerholes enter the iconographical record in the eleventh century.[5] The received wisdom on this subject may be traced to Canon Francis W. Galpin's *Old English Instruments of Music* (London, 1910). This book was undeniably a groundbreaking and seminal work of organology, but nevertheless it was very much a product of its own time: a work of patriotic scholarship (or scholarly patriotism) that was as least in part a response to the nineteenth-century stigma of England as *Das Land ohne Musik.* Galpin was eager to suggest that the eleventh-century illustrations represent in fact the earliest depictions of the cornett, the invention of which could thus be attributed "to our own [English] countrymen, for the earliest illustrations are all of English workmanship."[6]

The earliest illustration of a cornett, Galpin claims, is in a British Library manuscript: Harley 603. We are expected to accept this on trust (as many scholars subsequently have), since Galpin does not provide us with a copy of this illustration; neither does he provide us with a specific location in the manuscript or any further information about the source.

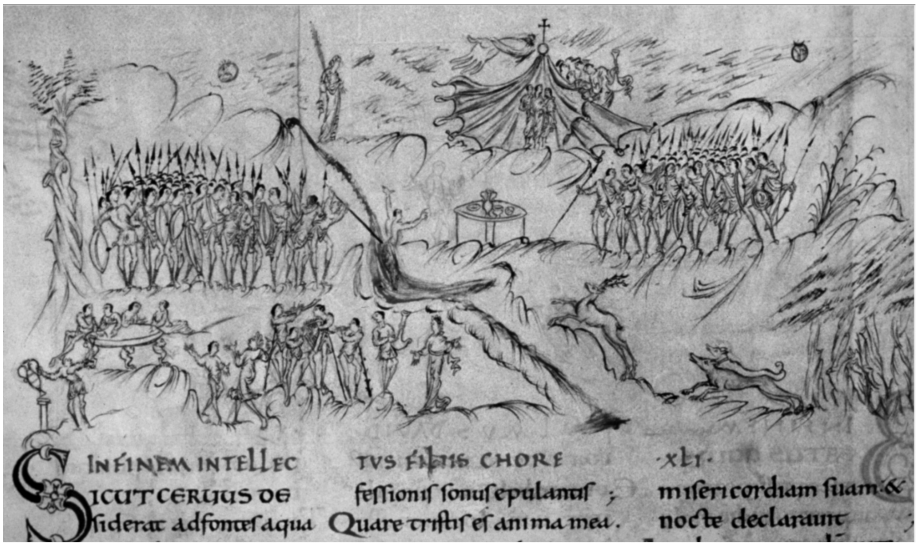

Figure 2a: Illustration of Psalm 41 (42 in the King James Version) from the "Harley Psalter," early 11th century C.E. British Library, Harley Ms 603, fol. 24v. Photograph © The British Library Board.

Figure 2b: Detail of Figure 2a.

So, to fill in a little detail, the "Harley Psalter" (as Harley 603 is more familiarly known), is believed to have been produced in Canterbury during the second and third decades of the eleventh century.[7] It is an extremely important source of Anglo-Saxon art, which is richly illustrated throughout with vivid and multi-colored pen-and-ink drawings. On revisiting this manuscript I discovered numerous (hole-less) horns, some of which were clearly used for signaling, while others seemed more for symbolic purposes (in the hands of angels, etc.). But the "cornett" to which Galpin alludes is found in the illustration on folio 24v, which accompanies Psalm 41 (no. 42 in the King James Version: "As the hart panteth after the water brooks, so panteth my soul after thee, O God") in a somewhat militaristic fashion (Figure 2). At the bottom of the tableau is a trio of musicians. The musician in the center of the trio is playing a harp, to the left of whom is a figure playing a long, curved aerophone (Galpin's "cornett"), which is held with two hands in such a manner as to suggest the presence of fingerholes. To the right is a player of a shorter, straight aerophone, which is again held with both hands, suggesting a fingerhole technique. Further to the right of this trio is another figure holding an object which may perhaps also represent some kind of musical instrument (and in fact this object recurs elsewhere in the manuscript with clearly-drawn strings and held in a position akin to a long-necked instrument of lute type). Other figures are dancing, but it is important to note that while some aspects of the tableau appear secular and realistic, other aspects are clearly symbolic representations (e.g., the "hand of God" motif).

However, Galpin failed to realize that the illustrations in Harley 603 were in fact copied, with remarkable accuracy and attention to detail, from a much earlier manuscript. The "Utrecht Psalter" (Utrecht, Universiteitsbibliotheek, Ms 32; formerly Cotton Collection, Claudius C vii), is believed to have been produced between ca. 820 and 840 in the Benedictine Abbey of Hautvillers, near Epernay in northeastern France.[8] This manuscript was in Canterbury by ca. 1000 C.E., where it was copied by the illuminators of the Harley Psalter. The illustration accompanying Psalm 41 on folio 24v in the Utrecht Psalter is reproduced here as Figure 3. So the earliest illustration of what Galpin imagined to be a cornett is in fact nearly two centuries earlier than he thought, and not of English but French workmanship! Despite the remarkable similarity between the Utrecht and Harley illustrations, there are some small differences in the depiction of the instruments: in the Utrecht version the two aerophones appear more similar to one another in shape and length, and the neck of the "lute" has protuberances that look rather like tuning pegs.[9] With Utrecht, therefore, we are in no doubt that there are four musicians in the scene.

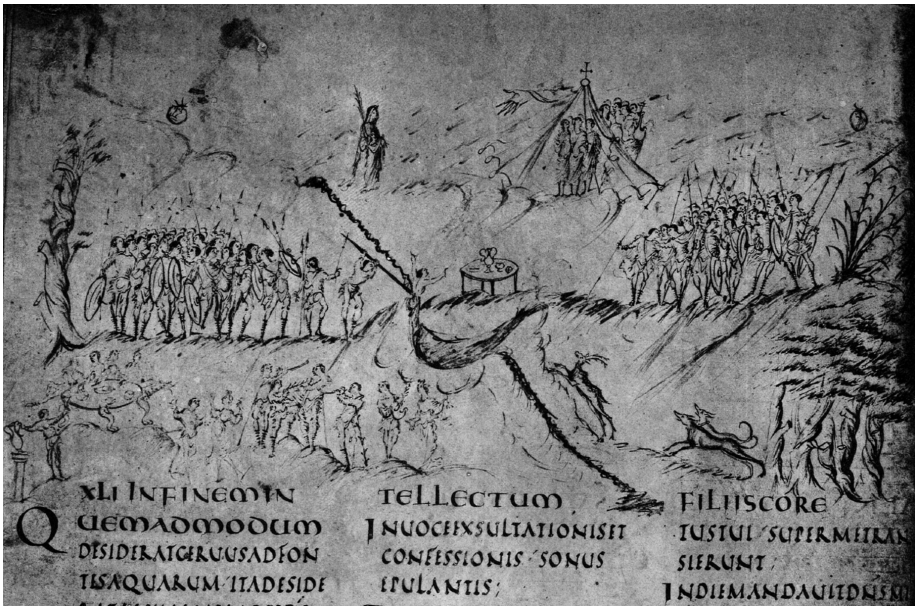

Figure 3a: Illustration from the "Utrecht Psalter," 9th century C.E. Utrecht University Library, Ms 32, fol. 24v. Image reproduced from the facsimile edition (London: Spencer, 1875).

There are two further medieval copies of the Utrecht Psalter worth mentioning here. The "Eadwine Psalter," also known as the "Canterbury Psalter" (Cambridge, Trinity College Library, Ms R.17.1), was produced in Canterbury between 1155 and 1160, with further additions made 1160–70. Like Harley 603, its illustrations are remarkably faithful to the original source.[10] The final copy of Utrecht is the "Anglo-Catalan Psalter" (Paris Bibliothèque nationale, Ms Latin 8846), which was begun in Canterbury in the late twelfth century,

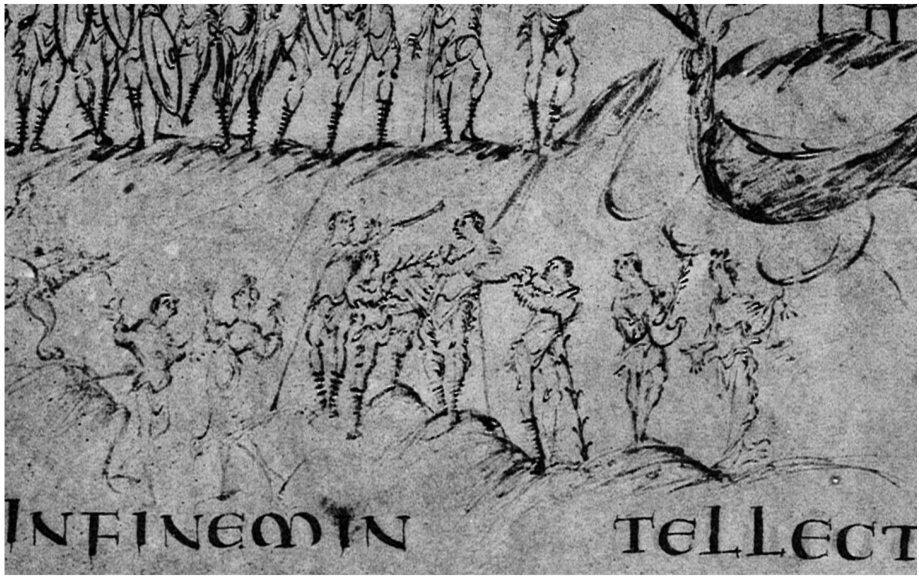

Figure 3b: Detail of Figure 3a.

and completed in Catalonia in the mid-fourteenth century. It is illuminated in full color on a background of gold leaf. As a result, it was necessary to simplify the illustrations, and in some cases the number of figures is reduced. Psalm 41 appears on folio 73v, and belongs to the earlier part of the manuscript that was completed in England. There are just two musicians in place of the original four in this illustration: a single harpist, and a single horn player. The horn is held in two hands, but not in such a way as to suggest the presence of fingerholes.[11]

To take a dispassionate view of Utrecht and its progeny as iconographical sources, it must be said that they simply do not contain enough evidence for us to claim definitively that the wind instruments they depict are cornetts, or even instruments of cornett type. Although the positioning of the players' hands may in some instances be suggestive of fingerhole technique, there is no clear evidence of fingerholes on the instruments themselves, nor is there any evidence whatsoever regarding the method of sound production (i.e., we cannot be sure that they are lip-vibrated).

Another British Library manuscript that Galpin cites as evidence of the English "invention" of the cornett is Cotton Tiberius C vi, "The Tiberius Psalter," which was produced in Winchester sometime between 1064 and the Norman invasion of 1066. However, on reviewing this manuscript I have not been able to find a single illustration of a fingerhole horn. The only picture of a horn being played is on folio 30v (Figure 4). This appears to be a curved, hole-less, animal horn with a decorated bell. Interestingly, a horn with a similarly decorated bell is depicted not as a musical instrument, but as a receptacle of oil for the anointing of David on folio 9v (Figure 5), thus demonstrating that the horn had multiple uses, both practical and symbolic.[12]

Figure 4: *David and His Musicians* (and juggler!). From the "Tiberius Psalter." London, The British Library, Cotton Tiberius C vi, fol. 30v. Photograph © The British Library Board.

Figure 5: *The Anointing of David*. From the "Tiberius Psalter." London, The British Library, Cotton Tiberius C vi, fol. 9v. Photograph © The British Library Board.

Galpin draws our attention to two further eleventh-century Psalter illustrations of aerophones that do have obvious fingerholes: the "Winchcombe Psalter," Cambridge University Library, Ms Ff. I. 23, fol. 4v (Figure 6); and Paris, Bibliothèque nationale, Ms Latin 11550, fol. 7v.[13] Even the latter source, Galpin claimed, was of English workmanship, although this was disputed by scholars in the 1920s, and the consensus now is that this psalter was in fact produced at the abbey of St. Germain-des-Prés in Paris.[14] Both manuscripts contain illuminations that depict King David as a player of the harp or lyre, surrounded by a number of subordinate musicians, in a similar format to that seen in the Tiberius Psalter. Bruce Dickey suggests that this imagery originates in the fourth-century "Commentary on the Psalms" by Eusebius of Caesarea (ca. 260–340).[15] The subject was a popular one, and was frequently repeated during the Middle Ages. Sometimes these subordinates are named, and where this is so, the player of the wind instrument is normally Ethan, as in the Winchcombe Psalter (although, as we have seen, he is not a wind player but a juggler of knives and balls in the Tiberius Psalter). Ethan was one of the principal Levite musicians appointed by King David in 1 Chronicles 15:17; the other musicians are Eman (Heman), Asaph, and Idithun (Jeduthun).[16] It is interesting that in earlier sources, Ethan is playing what appears to be an animal horn without holes; as Bruce Dickey suggests, the addition of fingerholes during the eleventh century perhaps reflects a change in the contemporary instruments with which the medieval illuminators were familiar.[17]

Another important source of the imagery of the sounding of horns is the text of Psalm 97 (Psalm 98 in the King James Version): 5–6: "cantate Domino in cithara in cithara et voce carminis / in tubis et clangore bucinae iubilate coram rege Domino," in which three instruments are identified: the *cithara*, *tuba,* and *clangore bucina*. These terms translate literally as "harp" or "lyre," "trumpet," and "sounding horn." The depiction of David and his musicians in the Tiberius Psalter may perhaps be viewed as a contemporary interpretation of these three instruments, as may the famous image from the eighth-century "Vespasian Psalter" (British Library, Cotton Vespasian A.i, fol. 30v; see Figure 7). Similarities between the wind instruments depicted in the Vespasian Psalter and Norwegian folk instruments still in use today are interesting; the curved aerophones in the bottom left, and in particular the way in which they are being held, bear more than a passing resemblance to the *bukkehorn*; while the straight, striped aerophones in the bottom right look as though they may bear a constructional similarity with the *lur* (a trumpet made from two hollowed out pieces of wood, bound together with birch bark).[18]

During the twelfth century, the straight aerophones of the Psalter illustrations also begin to acquire fingerholes. Moreover, the ends of these instruments often gain a carved animal head at around the same time. For example, a twelfth-century illuminated manuscript of Boethius's *De Musica* in the Österreichische Nationalbibliothek in Vienna actually depicts King David himself simultaneously playing both a harp and a straight fingerhole instrument that terminates in a stylized animal head.[19] The Worms Bible (British Library, Harley 2804, fol. 3v), dating from 1148, shows a musician blowing a curved horn without fingerholes, held in one hand, while holding in the other hand a straight instrument with holes, which again terminates in an animal head (Figure 8). Dickey cites a number of other

Figure 6: Cambridge, University Library, Ms. Ff I. 23, fol. 4v.
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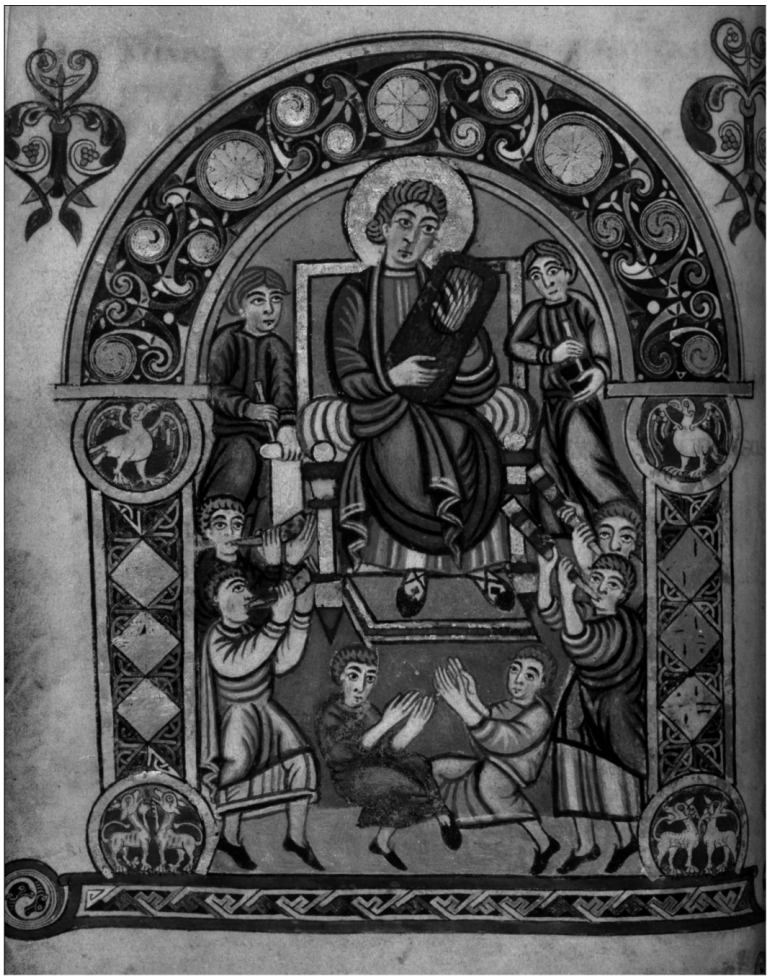

Figure 7: From the "Vespasian Psalter," eighth century C.E. London, The British Library, Cotton Vespasian A.i, fol. 30v. Photograph © The British Library Board.

examples of depictions of straight, presumably lip-vibrated, fingerhole aerophones that terminate in a fanciful animal head, often resembling that of a dog or a wolf.[20]

In addition to the illustration of zoomorphic instruments, the anthropomorphic depiction of animals as musicians was a common device at this time. So, for example, we find a manuscript from 1175 in the Trier Domschatz, depicted in which is a lion playing a curved aerophone with seven holes.[21] The coloring of the instrument suggests the possibility that it might be polygonally faceted, and it is certainly one of the closest resemblances to a curved cornett that I have seen prior to the sixteenth century.[22] There are some problems with interpreting this instrument as a cornett, however. For example, the lion is holding

Figure 8: From the "Worms Bible," twelfth century C.E. London, The British Library, Ms Harley 2804, fol. 3v (detail). Photograph © The British Library Board.

the horn with just one "paw," over or through which three of the fingerholes are drawn, and the "mouthpiece" of the instrument is inside the lion's mouth, so we cannot draw any conclusions about the supposed method of sound production.

Galpin calls our attention to a "cornett" played by a dog or wolf in a twelfth-century carving in Canterbury Cathedral, which presents similar problems of interpretation.[23] This is another curved aerophone, this time with four visible fingerholes; yet the top half of the instrument is so far inside the animal's mouth that it appears to be eating, rather than playing, the instrument! Later pictures of similar, curved, fingerhole aerophones played by foxes may be found in an English Psalter and Book of Hours from ca. 1300, now in the Walters Art Museum in Baltimore.[24]

The question of the method of sound production raised by the anthropomorphic illustrations is of course applicable to all the representations of aerophones discussed so far. We cannot assume that these instruments are lip-vibrated: they might as easily have been fitted with reeds. Indeed, the fingerhole horns surviving in the Scandinavian traditions are occasionally fitted with single reeds, and whereas the lip-vibrated horns normally have three or four holes for one hand only, those horns fitted with reeds are often made with a greater number of fingerholes and are thus played with a two-handed technique.[25] It is also worth observing in this context that the medieval illustrations tend to show horns that would require a two-handed fingerhole technique, whereas the lip-vibrated horns surviving in the archaeological record prior to the earliest extant cornetts (ca. 1500) all have four holes or fewer.[26]

Furthermore, we must remain cautious of regarding any of the illustrations discussed as representations of instruments actually in use at the time: it is entirely possible that they were invented for the purpose of conveying the concept of a "biblical" aerophone, or as representations of generic wind instruments.[27] Hélène La Rue's research in a related area urges caution in this regard. She made an extensive study of the cymbala, an instrument comprising a series of tuned bells struck with hammers, that is often depicted in Psalter illustrations together with the fingerhole horns (e.g., Figure 8). She concluded that, together with "question marks raised by the obvious sources, we are also faced with complete silence about these bells from anywhere else: no inventory entries, no archaeological evidence, no descriptions of practical performances which are indisputably references to the cymbala."[28] So, if the cymbala is but a symbolic contrivance of the medieval iconographer, how can we be sure that the fingerhole horns with which it is so often depicted were not similarly invented for representational purposes?

Many instruments, including horns with fingerholes, appear in the hands of Death in the popular German *Totentanz* prints of the fifteenth century. Two examples are reproduced in Volume 7 of this *Journal* (1995), on page 191: *Death and the Gambler,* printed ca. 1484, shows what appears to be a one-handed fingerhole horn; while *Death and the Cardinal* was printed earlier, ca. 1465, and depicts ostensibly the same instrument, but with a greater number of fingerholes, which would consequently require a two-handed technique. In fact, the latter instrument looks remarkably like a curved cornett. However, we must remain especially cautious here; we are dealing with symbolic representations in which the artist would have been concerned with illustrating an idea, or concept, of an instrument, rather than an exact likeness. This point is especially pertinent when the instrument concerned is in the hands of a skeletal image of Death!

Much of the preoccupation in the organological literature with fingerhole horns as cornett antecedents is understandable: the familiar form of the curved cornett must surely be regarded as a stylized animal horn. Yet this may well be a red herring in the search for the origins of the cornett, as the first true cornetts unambiguously to enter the iconographical record in the early sixteenth century, as well as some of the earliest extant instruments, are not curved but straight (either with a separate or an integral mouthpiece).[29]

Preconceptions regarding the shape of the cornett can also have a major bearing on the interpretation of archival evidence, particularly during the fifteenth century, towards the end of which the first hints of the use of cornetts by professional musicians begin to enter the archival records in Germany and the Low Countries.[30] Instrumental nomenclature was quite fluid at this time, and we must therefore remain cautious in our assessment of the available information.

For example, Ekkehart Nickel reports that in 1430 a *hültzern horn* was purchased for the tower of St. Sebaldkirche in Nuremberg.[31] Moreover, in 1436, "8 trometen 7 gute horner, umb 12 slechte horner" were bought for the tower musicians. Among these was "ein langes slechts Horn und die andern sein alle krumh."[32] The precise meaning of this is difficult to ascertain, although the word *slechte* in this context probably means *schlicht* (i.e., "simple") rather than *schlecht* (i.e., "bad"). The opposition of *slechte* and *krumh* horns, together with the arrival of the wooden horn in 1430, led Nickel to suggest that we are dealing here with the earliest arrival of the cornett in Nuremberg. Indeed, he goes so far as to identify the *slechts* horn with the mute cornett, and the *krumh* with the curved variety.[33] His identification of the cornett on such slender evidence is presumptive: the term "horn" at this time was used for many instruments, not least for the trumpet of the tower musicians, the *Thurner Horn,* which Sebastain Virdung depicts as an S-shaped trumpet in *Musica getutscht* (1511); Virdung also illustrates a *Krum horn* (a curved animal horn with finger holes), a consort of four *Krumhörner* (crumhorns), and a *Gemsen horn* (see Figure 9).

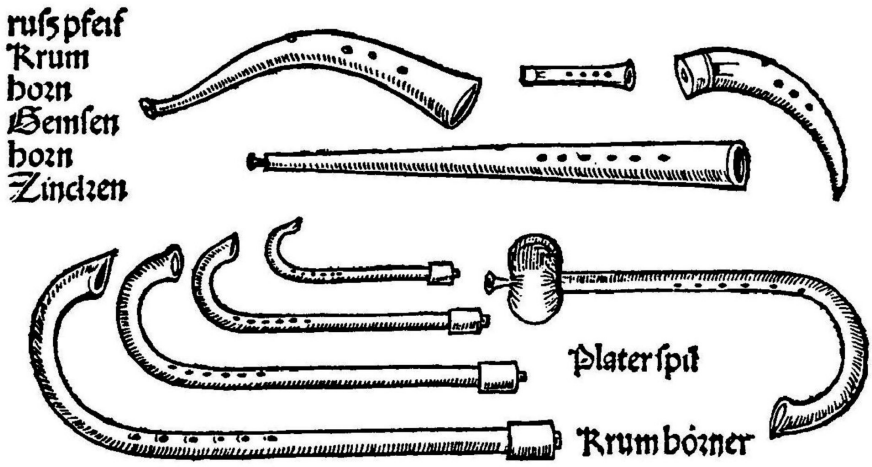

Figure 9: Wind Instruments from Sebastian Virdung, *Musica getutscht* (Basel, 1511), sig. B4. *Russpfeiff* (four-hole recorder? top, middle), *Krum horn* (curved, four-hole animal horn; top left), *Gemsen horn* (gemshorn; top right), *Zincken* (straight cornett/zink; middle), *Platerspil* (bladder pipe; bottom right), *Krumhörner* (crumhorns; bottom left).

For that matter, the civic ensemble in Regensburg possessed a *Krummhorn* in 1418, and musicians from Württemberg played *krume pfeiffn* in Nördlingen in 1428.[34] Keith Polk considers these references to be the first known evidence of the use of crumhorns, although he acknowledges that they may in fact refer to any curved instrument: "they could also have been bladder pipes, or even an early form of zinck."[35] Later, in Nuremberg in 1503, 10 florins were paid for "8 krum pfeiffen und zwo shalmeyen."[36] Again Nickel identifies the curved instruments as cornetts, yet they are as likely to be crumhorns; indeed the crumhorn, as a consort instrument existing in several different sizes, is much more likely to have been ordered in such numbers.

Nickel is not the only writer to herald the premature arrival of the curved cornett. *New Grove* claims that the "classic curved model is seen from the mid-15th century, for instance in a Spanish breviary (GB-Lbl Add. 18851)." Yet the instrument depicted (in the *New Grove* article as Figure 4) is entirely without fingerholes and held with one hand only—it would thus be capable of sounding just one or two different notes.[37]

New Grove also claims that the curved cornett may be seen in one of the Angers Tapestries (1373–82), "with the lowest hole duplicated so that either hand could be placed uppermost."[38] Closer examination of this tapestry reveals several problems with this interpretation, beginning with the "curvature" of the instrument: it appears to be curved only because of a distortion, probably caused by shrinkage, in the tapestry. The doubling of the bottom fingerhole, as *New Grove* correctly points out, is not common on cornetts, but is common on other wind instruments, such as recorders. We might add that this feature is also common on soprano shawms; moreover, the "mouthpiece" of the

Figure 10: Angel musician, Lincoln Cathedral, ca. 1280. Photograph by Richard Still.

instrument looks very much like the pirouette of a shawm. Finally, it must be pointed out that the position of the musician's hands is unrealistic for playing any wind instrument, as the fingers are nowhere near the fingerholes: we must therefore question the extent to which the instrument itself is an accurate depiction.

A final myth perpetuated by *New Grove* is that "the octagonal exterior form [of the curved cornett] is seen in a carving from about 1260 in Lincoln Cathedral, showing an angel apparently playing two instruments at once."[39] Dietrich Hakelberg points out that this wind instrument is formed by a pair of tubes that actually bear a *hexagonal* cross-section, and that a "polygonal faceted cross-section is however not sufficient to identify a wind instrument as cornett-type. In this context it must be emphasized that this pattern appears on numerous ceramic horns without any finger-holes that are known from many archaeological sites throughout Europe. The objects are closely connected with medieval pilgrimage."[40] However, I had the privilege of living very near to Lincoln Cathedral for several years, and I returned there on many occasions to look for this polygonally faceted carving, without success. There is indeed a late thirteenth-century carving of an angel playing two wind instruments at once in the "Angel Choir" (consecrated in 1280), but as far as I can tell these instruments are not polygonally faceted at all: they have a circular cross section, and no fingerholes are visible (Figure 10). There is, though, a further carving of interest in Lincoln Cathedral: a wooden roof boss in the South Cloister, dating from ca. 1300, that shows a pair of short horns without fingerholes being played simultaneously by a grotesque character, similar to the Green Man motif (and certainly not an angel). These horns may well have been polygonally faceted, but their condition is now quite degraded (Figure 11).[41]

Figure 11: Wooden roof boss, Lincoln Cathedral, ca. 1300. Photograph by Richard Still.

It is clear from the above discussion of iconographic and archival sources that there is actually very little tangible evidence to support the notion that the cornett was developed from fingerhole animal horns. There may well be a very strong case to be made that the curved cornett was made in deliberate *emulation* of the form of an animal horn—but that is a different argument. As stated above, the first unambiguous illustrations of the cornett that we can safely consider to be intentionally realistic, rather than symbolic, appear in the early sixteenth century—and they are all straight. I have already alluded to one of the earliest and most important of these sources: Sebastian Virdung's seminal work on musical instruments, *Musica getutscht* (1511), which includes woodcut illustrations labeled as *Zincken* (a straight cornett with detachable mouthpiece) and *Krum horn* (a fingerhole? animal horn; see Figure 9). What is missing from this source—and indeed from all the iconographical sources considered so far—is any clear suggestion of a relationship between these two instruments. What evidence is there of a transitional instrument between these two types? In short, where is the "missing link"?

One hypothesis regarding the transition from fingerhole horn to cornett was postulated by David Munrow, and involves another Scandinavian folk instrument: the Finnish *tuohitorvi*. Munrow describes this instrument as a medieval survival that "represents an interim stage between the fairly primitive cow horn and the sophisticated cornett.[42] He outlines the limitations of the fingerhole animal horn, which has a restricted melodic range (as discussed above), while the overall pitch is dependent on the length of the horn. The *tuohitorvi* is an improvement on the fingerhole horn that, he continues,

> provides us with a typical cornett prototype. It is made in two halves hollowed out lengthwise and then glued together and bound with bark. The shallow cup mouthpiece is carved at the narrow end of the conical bore and a piece of horn is inserted at the other by way of a bell, a reminder of the *tuohitorvi*'s animal horn ancestry. There are five finger-holes and a thumb-hole, and the instrument speaks well over a diatonic range of an octave and a half, the lowest note being approximately the A below middle C.[43]

This hypothesis was investigated by Raymond Parks, who, citing Professor Timo Leisiö, suggested that an instrument of this type was "never part of Finnish native musical tradition."[44] He concluded that "the people of Western Finland adopted from Sweden the musical use of the goat's horn, but further to the east the Karelians did not breed goats, and in the 19th century they began to imitate these horns in wood."[45] So, although Munrow's hypothesis provides a plausible model for a transitional "proto-cornett," there seems to be no historical basis for his suggestion that the *tuohitorvi* is a medieval survival.

However, there is a further iconographical source that I would now like to bring into the frame: Arnolt Schlick's *Spiegel der Orgelmacher und Organisten* (Mainz, 1511).[46] Although primarily concerned with the building and playing of organs, its title page contains an interesting and important woodcut illustration (Figure 12). This is perhaps the earliest depiction of a "cornett" in what we know to have been a realistic ensemble situation at

this time, playing together with singers and an organ.[47] It is also familiar to many of us as one of the illustrations used in the *New Grove* cornett article, where it is reprinted without particular comment. However, it surprises me that no one has yet pointed out the obvious in this picture: the rather unorthodox manner in which the instrument is held! The fingers of the player's left hand are partially covering the finger holes, whereas the fingers of his right hand seem to be partially inserted into the bell of the instrument.

I confess, my initial reaction to this woodcut was one of incredulity. I assumed that the artist had misunderstood his subject matter and had subsequently misrepresented it.

Figure 12a: Arnolt Schlick, *Spiegel der Orgelmacher und Organisten* (Mainz, 1511), title page.

Figure 12b: Detail of Figure 12a

But the execution of the woodcut in other respects is far from incompetent. The artist may be lacking the finesse of a Dürer or Burgkmair, but there is an attention to detail here that bespeaks a certain sincerity, and a desire to portray a scene that is true to life. Witness the grain in the wood of the organ bellows, the finery of the musicians' clothing, and the detail in the singers' song sheet. Looking more closely at the "cornett" itself, it seems ergonomically improbable that the visible holes in the positions depicted could be covered by the fingers of one hand alone. Nevertheless, this could be interpreted as a sincere attempt to indicate simply the presence of fingerholes, which would of course be invisible, or at least very difficult to show clearly, if they were depicted in a more accurate position and therefore covered or obscured by the player's fingers. But it seems indisputable that the artist is deliberately showing the cornettist's right hand covering the end of the instrument, with his fingers partially inserted in the bell. It strikes me that the most obvious explanation for such a depiction is that the artist had observed a musician playing an instrument requiring exactly such a technique in reality.

If this is so, then Schlick's "cornett" could well represent a unique example of a transitional instrument between the one-handed fingerhole horn and the two-handed straight cornett. A proto-cornett of this nature would share many of the playing characteristics of the traditional *bukkehorn*, which has a basic range of a fifth, with the possibility to

overblow. The fingering is done with the right hand, while the left hand is used to mute, or "hand-stop" the bell of the instrument in order to adjust the intonation, and also to lower the pitch at the bottom end of the instrument by anything up to a perfect fourth (see photograph, Figure 13, in which the author demonstrates this technique). The effect of altering the pitch of a horn or other wind instrument by hand-stopping the bell has surely been known for millennia, and perhaps this is what the players of the curved aerophones

Figure 13a: *Bukkehorn* by Magnar Storbækken, 2004.

Figure 13b: Hand-stopping technique for instrument in Figure 13a, demonstrated by the author

are doing in the Vespasian Psalter (Figure 7). The technique of hand-stopping a wind instrument was certainly known in the sixteenth century: Martin Agricola writes in *Musica instrumentalis deudsch* of a "Klein flötlein mit vier löchern" (a small recorder with four holes, his illustration of which is very similar to Virdung's *russpfeiff*), and explains that one hand is used to stop the end of the instrument, thus lowering the pitch and creating extra notes.[48]

Curious to discover whether the Schlick cornett could in fact be a plausible instrument, I made some experiments by modifying a three-piece straight cornett by Henri Gohin. This instrument, modeled on eighteenth-century originals, is in G (lowest six-finger note is *a*) at a^1 = 466 Hz. I adapted the instrument in two ways to arrive at two different prototypes:

Model A. I replaced the bottom (right-hand) joint with a shorter, blank cylinder of wood, thus creating an instrument with thumbhole and three fingerholes with a bottom (unstopped) note of d^1. This can be lowered in pitch comfortably to *b* by gradually closing the end of the instrument with the free hand; $b\flat$ and *a* are also available by partially inserting a finger into the bell, in the manner that seems to be illustrated in Figure 12. The instrument plays well in tune from d^1 to a^1 using conventional cornett fingering. Then there is a gap between a^1 and d^2, but the missing notes can easily be filled by stopping the end of the instrument. The notes d^2 to a^2 are also available using conventional fingering, with reasonable accuracy of intonation (which can, in any case, be adjusted by slightly opening or closing the end of the instrument). Naturally the tonal quality of the stopped notes varies from the open notes, but with practice I think this could be a useful instrument, especially for doubling a vocal line, or playing a cantus firmus.

Model B. This time I made a longer instrument, using all three joints. I plugged the thumbhole and first two fingerholes of the middle (left-hand) joint, and then rotated it so that the third fingerhole became a thumb hole. I had to develop a new fingering system for this instrument (and discovered some interesting alternative fingerings for the conventional cornett along the way!), but eventually discovered that I was able to play from *a* to c^3 with ease. There is a gap between e^1 and $b\flat^1$, but this can again be filled by hand-stopping. The range at the bottom end can also be extended downwards by up to a minor third by the same means.

While both models would require further refinement—and considerable practice to master the hand-stopping technique—before I would feel comfortable using them on the professional concert platform, they work well enough to convince me that a hand-stopped cornett could have been a feasible transitional instrument between the fingerhole horn and the Renaissance cornett.[49]

In conclusion, then, although an "evolutionary" development between fingerhole animal horn and curved cornett is yet to be proved, the illustration in Schlick's *Spiegel der Orgelmacher und Organisten* does provide a tantalizing suggestion of a missing link in this process. Certainly, various forms of straight cornett seem to have played an intermediary role in the late-fifteenth and early-sixteenth century in Germany, whereas the curved cornett seems to emerge a generation or so later in Italy. The construction of a straight

cornett would not have required the development of any new skills beyond those already required for a maker of other contemporary wind instruments such as shawms and recorders. Straight cornetts, turned on a lathe from a single piece of wood, were comparatively simple instruments to make, in contrast to the curved cornett, which was laboriously carved by hand in two halves, then glued and bound in leather or parchment. We should probably regard the development of such simple, easily constructed instruments as an essential part in the experimental process that culminated in the discovery and perfection of the narrow, conical-bore profile of the cornetts known to us from the sixteenth century onwards.

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NOTES

[1] *The New Grove Dictionary of Music and Musicians*, 2nd edn., ed. Stanley Sadie and John Tyrell (London: Macmillan, 2001), s.v. "Cornett," by Anthony Baines, rev. Bruce Dickey.

[2] My thanks to musician and linguist Hazel Brooks for the suggested etymology of *bouquin*. For more on the origins of the German term *zink*, see Petra Leonards, "Einige Gedanken zur Terminologie und Frühgeschichte des Zinken," *Basler Jahrbuch für historische Musikpraxis* 5 (1981): 361–75.

[3] Accession no. 7279, currently deposited in "Folkmusikens Hus" (Museum of Folk Music) in Rättvik, Dalarna, Sweden. The horn was found in a bog in Västerby, Hedemora, Dalarna, Sweden, and was acquired by the museum in 1941. A pollen analysis dated it to the tenth century. Thanks to Jennie Tiderman, master of science, musicologist, and music curator of the Dalarnas Museum, for supplying these details (in an email to the author, 28 February 2011).

[4] Odd Sylvarnes Lund's CD, *Lur og bukkehorn*, Sylvarnes Forlag SFSPCD, 2007, is recommended listening: it contains a wealth of *lur* and *bukkehorn* melodies in a variety of traditional styles.

[5] Bruce Dickey sums up the current understanding of this subject in his article "Cornett," in *The Cambridge Companion to Brass Instruments*, ed. Trevor Herbert and John Wallace (Cambridge: Cambridge University Press, 1997), 51–67 (and nn. 291–93), here 52.

[6] *Old English Instruments of Music: Their History and Character*, 4th edn., with revisions by Thurston Dart (London: Methuen, 1965), 141. I refer to the fourth edition here, rather than the first edition of 1910, since it is more easily available for consultation in public libraries. I have compared the two editions and Galpin's text concerning the cornett is substantially unchanged from the 1910 version.

[7] *The Golden Age of Anglo-Saxon Art, 966–1066*, ed. Janet Backhouse, D.H. Turner, and Leslie Webster (London: British Museum Publications Ltd., 1984), 74–75.

[8] There is a digital version of the Utrecht Psalter, with commentary, at http://psalter.library.uu.nl/ (although this is temporarily unavailable at the time of writing).

[9] Emanuel Winternitz used this and other similar illustrations of "lutes" in the Utrecht Psalter as evidence of the development of the Renaissance cittern from the ancient kithara, in *Musical Instruments and Their Symbolism in Western Art*, 2nd edn. (New Haven / London: Yale University Press, 1979), 57–65.

[10] Psalm 41 and its illustration are found on fol. 73v. Facsimile: *The Canterbury Psalter* (London: Percy Lund, Humphries and Co. Ltd, 1935).
[11] Facsimile: *The Anglo-Catalan Psalter* (Barcelona: M. Moleiro Editor, 1994).
[12] The horn is also used symbolically for the anointing of David as King on fol. 10r. It is used similarly in the Utrecht Psalter on fol. 75v.
[13] Latin 11550, fol. 7v, is reproduced in Jeremy Montagu, *The World of Medieval and Renaissance Musical Instruments* (Newton Abbot / London / Vancouver: David and Charles, 1976), 17.
[14] Charles Niver, "Notes upon an Eleventh-Century Psalter," *Speculum* 3/3 (July 1928): 398–401.
[15] Dickey, "Cornett," 52 and 291, n. 4. The article "Eusebius of Caesarea," *New Advent: Catholic Encyclopedia*, http://www.newadvent.org/cathen/ (accessed 21 July 2011), suggests that an allusion to the Holy Sepulchre dates this work to ca. 330. Parts of the Commentary survive in a number of later manuscripts (including an eleventh-century Greek Psalter in London, British Library, Ms Add. 36928), although there are many gaps and they conclude with the 118th Psalm.
[16] Idithun (Jeduthun) was not one of the original three Levite musicians appointed in 1 Chronicles 15; he does not appear as a musician until 1 Chronicles 16:42. A further example of this imagery may be found in Pommersfelden, Gräflich Schönbornsche Bibliothek, 334, fol. II 148v (Rhineland?, second half of the eleventh century); reproduced in Friend Robert Overton, *Der Zink: Geschichte, Bauweise und Spieltechnik eines historischen Musikinstruments* (Mainz: Schott, 1981), 221.
[17] Dickey, "Cornett," 52.
[18] This manner of construction is similar to that of the alphorn. Praetorius illustrates a very similar instrument in *Theatrum Instrumentorum* (Wolfenbüttel, 1620), plate VIII.
[19] Ms 51; reproduced in Overton, *Der Zink*, 27.
[20] Dickey,"'Cornett," 292, n. 6: Nuremberg, Germanisches Nationalmuseum, Cod. 2776; Munich, Staatsbibliothek, Clm. c. pict. 114; London, British Library, Ms Royal 14 B.V.
[21] Trier, Domschatz, Ms 64, fol. 91v; reproduced in Reinhold Hammerstein, *Diabolus in Musica: Studien zur Ikonographie der Musik im Mittelalter* (Bern and Munich: Francke Verlag, 1974), plate 69.
[22] Georg Karstädt went so far as to suggest that this is a curved cornett made of ivory, in "Zur Geschichte des Zinken und seiner Verwendung in der Musik des 16.–18. Jahrhunderts," *Archiv für Musikforschung* 2/4 (1937): 385–432, here 390.
[23] *Old English Instruments*, 141, fig. 37.
[24] Ms. 102, fols. 73–81; reproduced in Hammerstein, *Diabolus*, plate 93.
[25] For further information, including photographs, see Magnus Bäckström, *Hornet: Skogens Instrument* (Falun: Dalarnas Museum, 1984).
[26] For more on fingerhole horns discovered at archaeological sites, see Dietrich Hakelberg, "A Medieval Wind Instrument from Schlettwein, Thuringia," *Historic Brass Society Journal* 7 (1995): 185–96.
[27] The imaginative depiction of ancient and forgotten instruments became something of a tradition, as evidenced by Sebastian Virdung's illustrations of the pseudo-biblical "Instruments of Jerome" in *Musica getutscht* (Basel, 1511).
[28] Hélène La Rue, "The Problem of the Cymbala," *Galpin Society Journal* 35 (1982): 86–99, here 98.
[29] For iconographic sources see in particular Sebastian Virdung, *Musica getutscht* (Basel, 1511); Martin Agricola, *Musica instrumentalis deudsch* (Wittenberg, 1529); woodcuts in Hans Burgkmair's series *Weisskunig* (no. 33, ca. 1514) and *Triumphzug Kaiser Maximilians I* (no. 26, ca. 1526); and the *Pfeifferstuhl* mural in the old Nuremberg Rathaus, begun by Albrecht Dürer and his followers in 1521/22—this was destroyed in the Second World War, but documented with photographs in Matthias Mende, *Das alte Nürnberger Rathaus* (Nuremberg: Stadt Nürnberg, 1979). Some of the

earliest extant cornetts are in the Musikinstrumenten-Museum, Berlin: the instruments catalogued 302 and 3066 are mute cornetts bearing the mark "AA," which was used by members of the Schnitzer dynasty of instrument makers in Nuremberg in the first half of the sixteenth century. Berlin 662, a straight cornett requiring a detachable mouthpiece, is described in the museum catalogue as belonging to the early seventeenth century: I believe this to be erroneous, and it is more likely to belong to the early *sixteenth* century. An investigation and re-evaluation of these instruments will form the subject of a future research paper.

[30] See Keith Polk, "Augustein Schubinger and the Zinck: Innovation in Performance Practice," *Historic Brass Society Journal* 1 (1989): 83–93.

[31] Ekkehart Nickel, *Der Holzblasinstrumentenbau in der Freien Reichsstadt Nürnberg* (Munich: Musikverlag Emil Katzbichler, 1971), 20.

[32] Ibid., 21.

[33] Ibid.

[34] Keith Polk, *German Instrumental Music of the Late Middle Ages* (Cambridge: Cambridge University Press, 1992), 74.

[35] Ibid.

[36] Nickel, *Der Holzblasinstrumentenbau*, 22.

[37] *New Grove 2*, s.v. "Cornett."

[38] Ibid.; reproduced in Frank Harrison and Joan Rimmer, *European Musical Instruments* (London: Studio Vista, 1964), plate 67.

[39] *New Grove 2,* "Cornett."

[40] Hakelberg, "A Medieval Wind Instrument," 196, n. 35.

[41] My thanks to Richard Still for drawing my attention to this carving.

[42] David Munrow, *Instruments of the Middle Ages and Renaissance* (London: Oxford University Press, 1976), 20.

[43] Ibid.

[44] Raymond Parks, "The *Tuohitorvi*: Cornett Survival or Re-creation?" *Galpin Society Journal* 48 (1995): 188–93.

[45] Ibid., 189. Parks draws attention to another "folk cornett," the Russian *rozhok* (which also means "little horn"), which according to Baines and Dickey (*New Grove 2*, s.v. "Cornett") "may be a rural offshoot of the straight cornett; it has a separate mouthpiece (which some players place to the side of the lips) and is made in two or more sizes for playing music in parts. This playing tradition may go back only two centuries, to judge by estimates of the age of Russian improvised part-singing in rural areas." This is certainly an area for further investigation.

[46] Facsimile edn. with English trans., ed. Elizabeth Berry Barber (Buren: Knuf, 1980).

[47] For archival references to the appearance of cornettists in this context see Polk, "Augustein Schubinger and the Zinck."

[48] Martin Agricola, *Musica instrumentalis deudsch*, 2nd edn. (Wittenberg: Rhau, 1545), 22–24.

[49] The author demonstrated both prototypes at the Second International Historic Brass Symposium, New York City, 14 July 2012.