THE 'CORNETT': DIVERSITY OF FORM, FUNCTION AND USAGE AS PORTRAYED IN ORGANOLOGICAL AND ICONOGRAPHICAL SOURCES, c.1500- c.1800.

by

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ABSTRACT

Previous scholarship on 'the cornett' has emphasised the importance of large-scale church music, the pairing of cornetts with trombones, and the dominance of professional male *virtuosi*. I argue that there was another side to the usage of cornetts – small, mixed ensembles, typically combining a single cornett with voices, strings and continuo instruments. Secular and sacred vocal music, readily available in printed form, probably formed the repertoire of such groups, and evidence is presented for non-professional usage by both male and female players.

From early straight and curved trebles, the cornett family grew to include a range of sizes and forms. Although curved trebles dominated, the other types were widely used; in particular, I show that straight trebles, and tenor and bass cornetts, were known in England in the late seventeenth century.

A new analysis of pitch information shows clearly that most surviving cornetts play at a higher pitch than modern, and I demonstrate a clear relationship between pitch and dimensions.

The defining feature of this family of instruments appears to be its ability to resist rigid categorisation, and to be equally at home in a range of contexts. The exploration of this diversity offers great opportunities for scholars and performers.

ACKNOWLEDGEMENTS

My interest in the history of cornetts grew out of my experiences as a performer, and I owe a particular debt of gratitude to my teachers over the years. My first trumpet teacher, Quentin Duerden, first made me aware that renaissance instruments were different from their modern counterparts, and his enthusiasm for the repertoire of that period sowed the seeds for my own subsequent efforts to play the cornett. I have been fortunate enough to study cornett with some of the world's leading players and teachers, including Bruce Dickey, Jean-Pierre Canihac, Jeremy West and David Staff; I am particularly grateful to Bruce Dickey for providing me with access to the extensive library of cornett-related iconography at the Schola Cantorum Basiliensis. Philip Thorby first introduced me to the important Renaissance theorists and the application of their ideas to performance practice, and some of my most memorable performing experiences have been under Philip's uniquely passionate direction. My supervisor at the University of Birmingham, Dr Mary O'Neill, deserves special thanks for encouraging me to pursue this Master's degree, for her ongoing support and for her refusal to accept less than my best efforts.

Thanks finally to my wife Annette, who has encouraged and supported my studies whilst also studying for a Master's degree herself.

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INTRODUCTION

Cornetts were among the most highly regarded instruments of the Early Modern period, often described in fulsome language such as 'the most excellent of wind instruments',[1] and 'like a ray of sunshine, which pierces the shadows or the darkness, when one hears it among the voices in the Cathedrals'.[2] They are wind instruments of a hybrid nature: their sound is produced by vibrating the lips against a cup-shaped mouthpiece, as with the brass family; however, the obtaining of different musical frequencies is achieved through the use of finger-holes, as with woodwinds. According to the classification system of Hornbostel and Sachs, they are classified as 'trumpets with finger-holes'.[3] They flourished mainly in the sixteenth and early seventeenth centuries, but began a decline in popularity from the second half of the seventeenth; from 1700 onwards their use fell off dramatically, even though in some parts of Europe they persisted until the early 1800s.[4]

Their modern revival dates only from the second half of the twentieth century; performers such as Otto Steinkopf in Germany and Christopher Monk in England were among the first to play cornetts in public in the 1950s.

Whereas most renaissance and baroque instruments have direct descendants or analogues (for example, modern trombones and sackbuts, modern and baroque violins, etc.), this is not true for cornetts; no mainstream modern instrument combines a lip-vibrated mouthpiece with woodwind-style fingering, and this lack of any kind of

[1] Rosenberg, J., 112
[2] Mersenne, 274: '… il est semblable à l'esclat d'un rayon de Soleil, qui paroist dans l'ombre ou dans les tenebres, lors qu'on l'entend parmy les voix dans les Eglises Cathédrales…'
[3] Brown and Palmer
[4] Dickey (1997), 67

continuous performing tradition necessitated a re-invention of both their playing technique and usage. Cornetts are usually considered to be difficult to play well, but performance standards have improved dramatically over the last fifty years or so.[5]

Despite this undeniable progress, however, I would contend that cornetts remain somewhat unfamiliar to the majority of early twenty-first century concertgoers. Further, the most extensively researched repertoire is the Venetian-influenced polychoral music of Giovanni Gabrieli, and his contemporaries and students, including Heinrich Schütz and Claudio Monteverdi. The latter's 1610 Vespers remains almost the only work in the regularly-performed canon to call for cornetts, and even though any aspiring professional cornettist quickly finds that this work will be the one they are called upon to play by far the most frequently, it remains a common experience that audience members often express puzzlement about the instrument. If cornetts have a mainstream image at all, it would be as oddly-curved instruments, rather difficult to play, usually teamed with trombones, playing Venetian polychoral music. But there is much more to it than this, however: the instrument comes in different sizes, and has various different repertoires.

The motivation behind this study, then, has been to scrutinise the received perception of 'the cornett', and to analyse what the organological and iconographical sources reveal about the diversity of forms in which it existed, and the range of situations in which it was put to use. Organological treatises are reviewed in chronological order, and supported by the inclusion and discussion of relevant iconographical sources within that chronology. Issues of pitch are considered, and I have taken a new

[5] Whilst it can be difficult to single out individual players, the American performer and musicologist Bruce Dickey deserves particular mention, both for his outstanding performing and teaching achievements, and his scholarship.

approach to analysing the relationship between pitch and length of surviving instruments, employing graphical methods to provide greater clarity and immediacy in presenting this data. I have also considered what iconography can tell us about players, usage and performance contexts. Iconography, whilst being a potentially rich source of information, also presents some dangers in that 'instruments may not be correctly drawn in pictures',[6] and it may be that 'social messages or emblematic contents drastically overrule naturalistic depiction',[7] Nonetheless, I have attempted to cross-reference, where possible, the iconography with other types of evidence, particularly the relatively large numbers of cornetts surviving in museum collections,[8] and I have been guided by the pioneering approaches of Emanuel Winternitz[9] and Howard Mayer Brown, that have inspired methodologies used in publications such as *Imago Musicae* and in *Music in Art*.

[6] Brown (1995)
[7] Seebass
[8] Tarr
[9] Winternitz (1979), 39-42.

CHAPTER 1

SIXTEENTH CENTURY: ORIGINS AND BASIC FORMS

The very earliest origins of cornetts are not clearly understood. The most familiar curved form invites the assumption of development from primitive end-blown animal horns; Canon Francis Galpin asserted: 'the original form was *doubtless* [my italics] decided by the natural shape of the horn from which it was made'.[10] Galpin further proposed that the instrument originated in England: 'The invention…was probably due to our own countrymen, for the earliest illustrations are of English workmanship'.[11] More recently, however, these assertions have been questioned. Jamie Savan observes that whilst Galpin's work was 'undeniably a groundbreaking and seminal work of organology', his desire to promote his own country as the origin of the cornett perhaps led him to over-interpret his iconographical sources; the illustrations cited by Galpin are often unclear as to whether the instruments shown do in fact have cup mouthpieces, or fingerholes, or both. The earliest known illustrations that unequivocally show instruments of cornett-type date from the early sixteenth century, and Savan argues convincingly that straight, end-blown instruments combining finger-hole technique and hand-stopping may have been among the progenitors of the cornett,[12] as shown in a 1511 woodcut by Arnold Schlick:

[10] Galpin, 190
[11] Galpin, 189
[12] Savan, 2012.

Figure 1: Title page from 'Speigel der Orgelmacher und Organisten', Arnold Schlick, Mainz, 1511.

The earliest tangible organological description appears in Sebastian Virdung's *Musica getutscht und angezogen* of 1511, exactly contemporary with Schlick's illustration. Virdung divides instruments into three categories: strings, winds and percussion. The wind instruments are further subdivided into those blown by a player, and those which are blown mechanically by a bellows. Finally, he separates physically-blown instruments by whether or not they have holes opened and closed by the fingers. Of the fingerhole instruments, Virdung provides two groups of illustrations: the first

showing shawms, three-hole pipes, recorders; and the second showing a group of instruments including two of apparently cornett-type. These are some kind of curved, end-blown horn with three fingerholes and a thumbhole, and a straight cornett, with six fingerholes and a thumbhole:

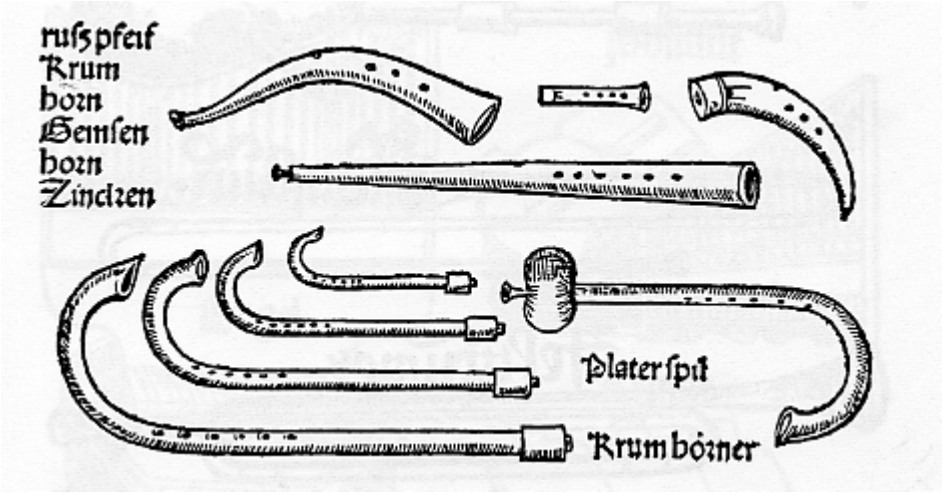


Figure 2: Wind instruments from Virdung – *Musica getutscht*

Virdung's labelling of the lower group of instruments is clear enough: four differently-sized '*Krumhörner*' or crumhorns, and a '*Platerspil'* or bladder pipe. The labelling for the upper group is less clear. The lower instrument appears to be a straight cornett, with six finger-holes and a thumb-hole, and what appears to be a detachable mouthpiece. By analogy with later treatises, this must be what Virdung calls '*Zincken*'. '*Gemsen horn*' is generally accepted to be the top-right instrument, essentially an ocarina made from the horn of a chamois ('Gemse' in German). The '*Krum horn*', literally 'curved horn', must refer to the top-left instrument; this appears to have a double curve, and could perhaps be animal-horn derived. It has three fingerholes and a thumb-hole, and a slight flare at the narrow end, suggesting a cup

mouthpiece.[13] This leaves '*Russpfeif*' for the small recorder-type instrument in the middle of the top row.

Virdung says nothing specific about cornett technique. He advises the reader that they should initially learn three instruments: the clavichord, the lute and the recorder. From these, he says, it will then be easy to apply the same principles to related instruments. For the recorder, he goes into some detail on fingering and notation, and the various sizes of instruments, but provides no guidance on the other wind instruments, except to say 'whatever you learn [to do] on the recorder you [will] have [as a foundation] for learning all the more easily later on all the other wind instruments with fingerholes'.[14] Whilst the lack of detailed information is somewhat frustrating, Virdung does at least make clear that instruments of cornett type were known by 1511. That he only shows the straight form might imply that this was the only type known to him; contemporary Germanic illustrations are also consistent in showing only straight cornetts. These includes the series of woodcuts by Hans Burgkmair, commissioned by the Holy Roman Emperor-elect, Maximilian I, depicting a triumphal procession of carts and carriages carrying numerous combinations of musicians.

[13] Savan (2012), 13
[14] Bullard, 121

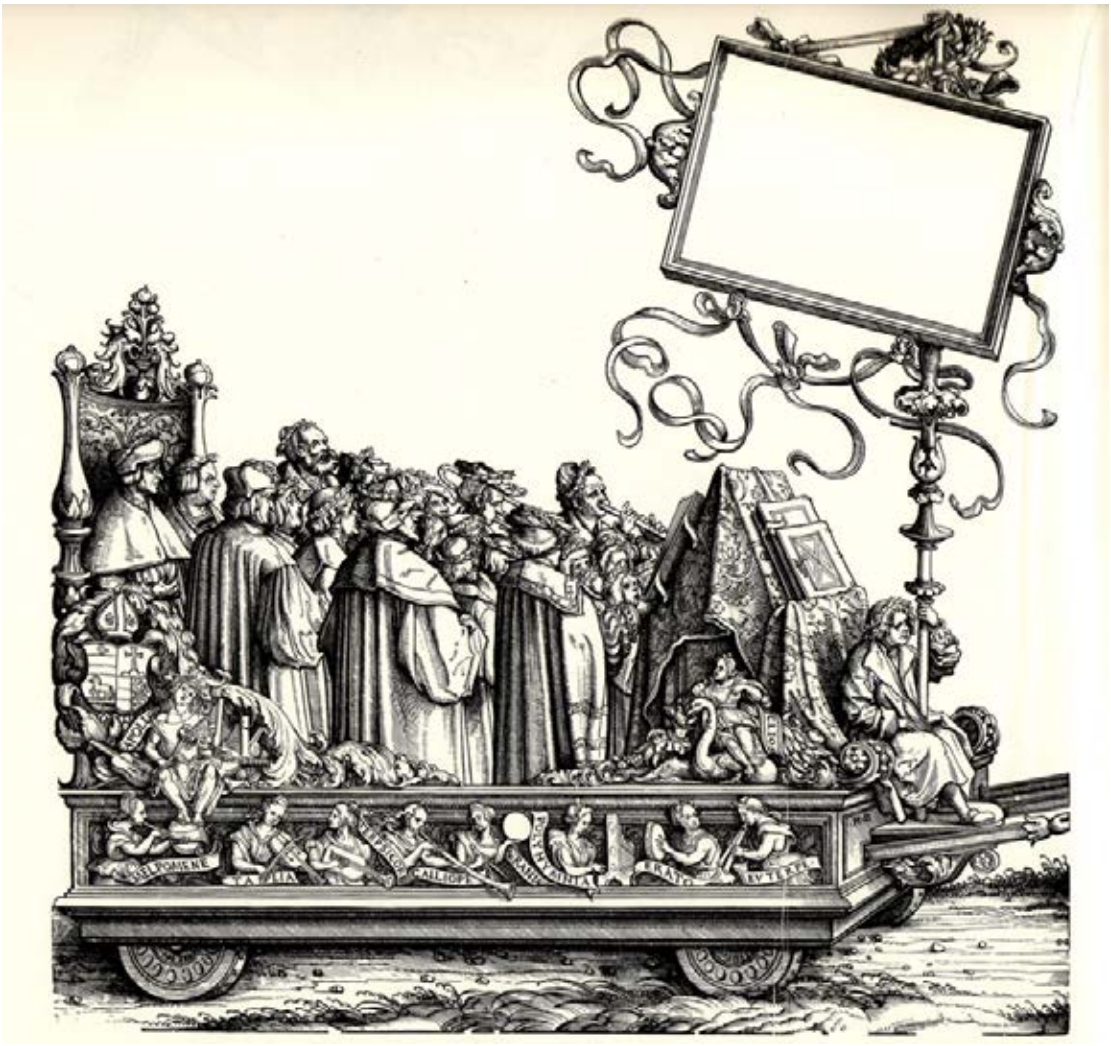


Figure 3: Hans Burgkmair: 'Triumphzug Maximilians' (detail) – designed 1512-1519

Maximilian's marriages, to Mary of Burgundy in 1477, and Bianca Maria Sforza in 1493, exposed him to cultural developments in the Netherlands and Italy; he became an important patron of music and the arts, and modelled his own court in Vienna on these centres of Renaissance culture.[15] The illustration above shows a cornettist and trombonist playing with a group of singers, and two seated figures – possibly clerics – at the rear. Along the bottom edge of the cart are shown Apollo and the nine muses, playing various instruments. The cornettist, playing a straight

[15] Picker, 11-13

cornett, has been shown to be Augustein Schubinger, one of the first virtuoso players on the instrument, whose playing was described in many contemporary accounts, and who travelled widely in the service of the Imperial Court. According to Bruce Dickey, one of the significant aspects of Schubinger's playing is that he is often described performing with singers, rather than in the loud wind ensemble, as indeed he is shown doing in the Burgkmair woodcut.[16]

Figure 4: Anon, South German: Allegory of Music (detail), c. 1540

(Basel Historical Museum)

[16] Dickey (1997), 53

Another German painting, only slightly later than Burgkmair's woodcuts, again shows a cornett player with a straight instrument, playing with a group of singers. As with the 'Triumphs', he is joined by a trombonist, but the grouping in this later painting also includes two keyboards (a portative organ, and another instrument, with encased pipework – perhaps a regal), as well as a player with a psaltery. Although this composition anticipates the 'concert' paintings which became popular a century or so later, it is presented here as part of an 'allegory of music'. Other instruments appear, including lutes, viols and larger organs; the clothing and architecture are, like the instruments, contemporary, although labels identifying parts of the painting as Delphi and Mount Parnassus show that a Classical allusion is intended, as does the presence of Apollo and the Muses. There is also a reference to Biblical tradition, with Bathsheba bathing in a fountain, watched by King David.[17] The painting thus captures sacred and secular allusions to music, with ideas of courtly recreation, whilst hinting too at the power of music to excite the passions. It also provides an important source of visual representations of most types of contemporary instruments and, to some extent at least, their performance practice.

Amongst others, Bruce Dickey has speculated that the curved form of the cornett developed slightly later than the first straight instruments, in the workshops of Italian makers.[18] Certainly there are illustrations from Italian sources in the early sixteenth century showing curved cornetts. The title page of Sylvestro Ganassi's treatise on recorder ornamentation, *Opera Intitulata Fontegara*,[19] shows, in front of the recorder consort that is the focus of the illustration, two cornetts resting on a ledge:

[17] Historisches Museum Basel
[18] Dickey (1997), 53
[19] Ganassi

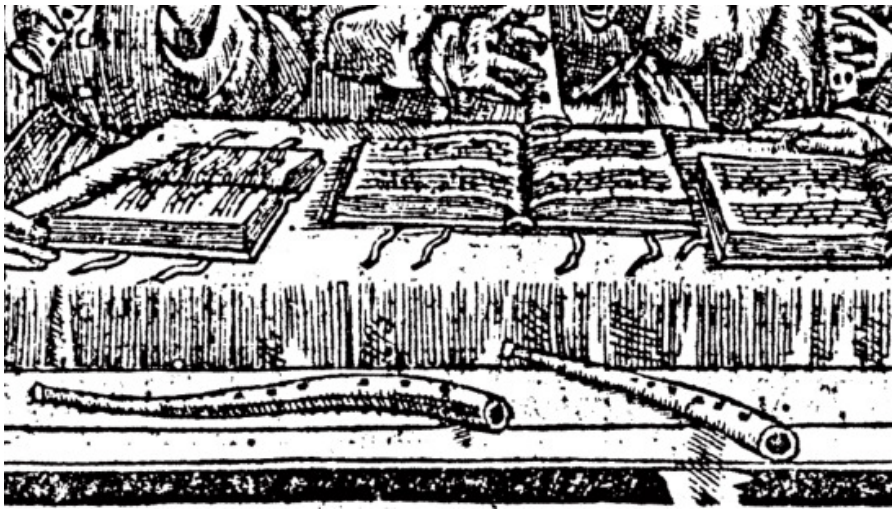


Figure 5: Ganassi – Opera Intitulata Fontegara – Frontispiece (detail)

The instrument on the right appears gently curved, and has a round profile, whilst that on the left has a double curve, as is found in tenor cornetts and at least a suggestion of a polygonal cross-section. Dickey has suggested that the earliest curved cornetts may well have been round in section, with the more prevalent octagonal profile being a slightly later development.[20]

A beautiful red-chalk sketch by the Florentine artist Pontormo, dating from 1541-3, shows a young man holding a curved cornett, which again appears to be round in section:

[20] Hathaway

Figure 6: Jacopo Carucci known as Pontormo: Youth with a recorder [sic] - 1541-3

(Uffizi, Florence)

The sitter wears a cloak and cap; although he is not playing the instrument, and only holds it in his right hand, the grip, in the region of the three lowest fingerholes, and with the three fingers uppermost that would be used for playing, suggests someone who is familiar with the practical use of the instrument.

As stated above, the exact details of the origins of the cornett around 1500 remain elusive. However, it seems likely that the cultural links between German and Italian musicians and makers played a crucial role in the instrument's development. German players were highly regarded in Northern Italy at this time; for example, the Florentine civic ensemble in 1445 was made up entirely of German players.[21] It is known that Augustein Schubinger, mentioned above, travelled to Florence in 1489, and it has been suggested that his cornett playing first dates from that visit;[22] Schubinger was originally recruited to the Florentine civic ensemble as a trombonist, and records of his playing cornett only begin to appear after his return to the Habsburg court in Innsbruck in 1493 or 1494.[23] It seems likely that Florence had cornett players at about this time; Giovanni Cellini, the father of the more famous Benvenuto, worked as a civic musician in Florence between 1451 and 1527, and taught his son to play the cornett, so presumably must have had some facility on it himself.[24]

Eighteen years after Virdung's *Musica getutscht*, Martin Agricola published his *Musica instrumentalis deudsch*. It owes much to Virdung, even copying some of the woodcuts, but it extends and redefines the instrumental classification. Agricola subsequently revised and republished *Musica instrumentalis* in 1545.

[21] Polk (1989), 83
[22] Polk (2000), 229
[23] Polk (1989), 86-87
[24] McGee, 215

The 1529 edition follows Virdung in its classification of wind instruments, dividing them into those blown by human breath, and by bellows, and making the same subdivision of the former category into instruments with and without fingerholes.[25]

Like Virdung, Agricola devotes most of his detailed technical discussion of wind instruments to the recorder, and despite the heading: 'A fine and correctly established foundation for learning to play correctly from vocal music and notation on recorders … cornetts [and other instruments] … and how they are to be fingered correctly',[26] he gives no information at all on cornett fingering, or indeed any other aspects of the instrument.

Agricola illustrates only a straight cornett, this time grouped with a three-hole pipe, and two shawms:

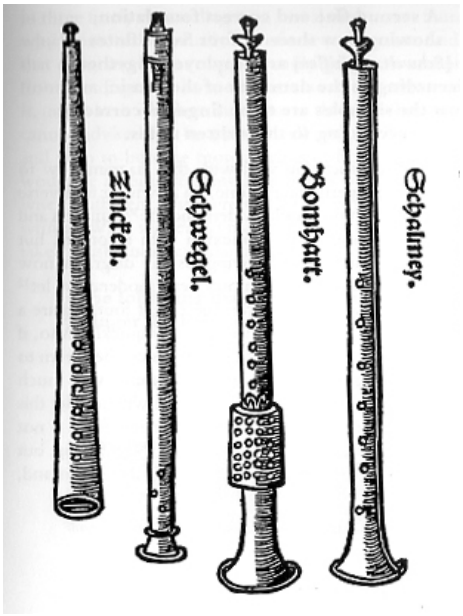


Figure 7: Wind instruments from Agricola – *Musica instrumentalis* (1529)

[25] Agricola lists the following fingerhole instruments: Recorders [*Flöten*], cornetts [*Zincken*], pommers [*Bomhart*], shawms [*Schalmeyn*], crumhorns [*Kromhörner*], transverse flutes [*Querfeiffen*], three-hole pipes [*Schwegel*], small recorders [*klein Flöt*], bladderpipes [*Platerspiel*] bagpipes [*Sackpfeiffen*], gemshorns [*Ziegen hörner*] and rüspfeiffs [*Rüsspfeiff*] – see Hettrick, 5
[26] Hettrick, 6

He insists that singing is an essential foundation for learning to play wind instruments, and he encourages wind-players to learn to play from vocal notation, rather than a tablature such as was used on fretted stringed instruments and keyboards. Whilst this suggests that some wind players might have used some form of tablature, Agricola is dismissive of the practice; he alludes, perhaps, to Virdung[27] when he says:

> there have been some who have gathered numbers together and have created a tablature for wind instruments, which others consider a fraud…when playing a wind instrument it is very much easier to read a part from notes than to play from tablature; you only have to practise.[28]

Playing from staff notation quickly became not just the norm, but a practical necessity, for the vast majority of wind players.

Agricola's 1545 revision is no more forthcoming with details on the cornett than his earlier publication. He does, however, add some observations on articulation and ornamentation, which foreshadow those of later writers. A detailed discussion of historical articulation is beyond the scope of this project,[29] but essentially Agricola is describing forms of simple and compound articulation which have persisted in subsequent discussions of wind instrument technique. He also gives a clear indication that the improvisation of divisions or embellishments was already a part of wind

[27] Virdung had discussed tablature briefly in his chapter on the recorder in *Musica getutscht*, providing symbols for the various pitches, and commenting: 'If you now wish to set something for recorders into the tablature, then put the symbols…in front of you and pay attention to the…value of the notes, just as I have taught you previously for the clavichord' – see Bullard, 180

[28] Hettrick, 8

[29] Jamie Savan has made a detailed study of early sixteenth-century performance practice issues relating to the cornett: Savan, 2004. See also Tarr and Dickey (2007).

playing in the 1540s, and his comment about learning it from a teacher implies that it was viewed as something of an advanced technique.[30]

Whilst it is clear, then, that the earliest organologists show only straight cornetts, and that this style of instrument appears to have been favoured, at least at first, in Germany, the curved form begins to appear in Italian sources from the 1530s onwards. Both styles appear in iconography throughout the remainder of the sixteenth century, but with the curved form dominating. A fresco, thought to have been painted by Giorgio Vasari, perhaps for the merchant Tommaso Cambi,[31] shows five musicians, of which three are playing cornetts, and two, trombones.

Figure 8: Giorgio Vasari: Wind Players, c. 1545

(Isabella Stewart Gardner Museum, Boston)

[30] The historical publications on the art of diminution, from Ganassi's *Opera initulata Fontegara* of 1535 onward, have been extensively discussed in the literature; a useful summary appears in Bruce Dickey's preface to his edition of Riccardo Rognoni's *Passaggi per potersi essercitare nel diminuire* – see Dickey (2007), 21-28

[31] Isabella Stewart Gardner Museum

The musicians appear to be standing outside a window, playing into the room, with their music resting on the sill; these players can read. There is some variety in the cornettists' embouchures, with the young central figure having an extreme corner placement, whilst the two musicians to his left play in the centre of the mouth. Although the two visible cornettists both play right-curving instruments, their hand positions are reversed (the older player on the right has abnormally elongated fingers), and their instruments appear to have polygonal profiles.

A cornetto player can be seen in Veronese's 'Marriage at Cana' originally painted for the Monastery of San Giorgio Maggiore in Venice:

Figure 9: Paolo Veronese, The Marriage at Cana (detail) 1563

(Louvre, Paris)

This painting depicts the biblical miracle story where Christ turns water into wine. A favourite subject for artists in the Early Modern period, the episode allowed the representation of sumptuous feasting and large numbers of richly-dressed guests, and it often included singers and musicians, reflecting 'the customs of princely and aristocratic residences of the time'.[32] The foreground of Veronese's painting shows a prominent group of five musicians, playing two tenor viols[33], a cornett, a violin and violone. Less clearly visible at the rear left of the group are a turbaned figure holding a trumpet, and just in front of him, what appears to be a trombone player.[34] Although Richard Cocke identified the cornettist as playing a 'cornetto muto',[35] close examination shows that the instrument is not straight, as would be the case for a mute[36] cornett, but gently curved, and it appears to have a separate mouthpiece; it is therefore simply a left-curving cornett, although no further details of its construction can be made out. The mouthpiece is placed on the extreme left, and the player's right hand is uppermost. A tradition dating back to Marco Boschini in 1674 identifies four of the musicians as painters: Veronese himself playing the tenor viol; Titian, the violone, Tintoretto; the violin; and Jacopo Bassano, the cornett.[37] These identifications have been questioned, most recently by Peter Bassano, who observes that the cornettist appears too young to be Jacopo Bassano, who would have been in

[32] Ausoni, 132
[33] The viols have an unusual playing position, held in the lap rather than between the legs.
[34] Although the term *sackbut* is often used to indicate the early trombone, this was a peculiarly English term; the instrument has always, from the sixteenth century onwards, been referred to as *trombone* in Italy – the Italian word simply meaning 'large trumpet' – and I have chosen to use the latter term in this discussion.
[35] Cocke, 64
[36] 'Mute' in this context means 'quiet'. A mute cornett was a straight instrument made with an integral mouthpiece, and having a softer, more veiled tone than usual.
[37] Boschini, 755: 'Il Vecchio, che suona il Basso, é Tiziano; l'altro che suona il Flauto, é Giacomo da Bassano; quello che suona il Violino, é il Tintoretto, ed il quarto vestito di bianco, che suona la Viola, é lo stesso Paolo'. Boschini mis-identifies the cornett as a flute.

his late forties in 1563.[38] Bassano makes the further, interesting, observation that X-ray examination of the painting during its restoration clearly shows that the place occupied by the cornett player originally contained a musician playing a trombone.[39] Bassano tentatively suggests that the older, bearded trombonist shown in the X-rays is a more likely candidate for Jacopo Bassano. He further speculates on the reason for the substitution of the trombone with the cornett. One possibility is that the line created by the trombone would have strongly drawn the viewer's eye away from the central figure of Christ; another is that the trombone may have had symbolic associations with the underworld, inappropriate for a wedding celebration – although in this instance, it is not clear why a cornett would have been a more suitable choice. The musicians are playing from part-books on a cloth-covered table; Florence Gutreau suggests that one possibility for the music could be Lassus' motet *Nuptiae factae sunt in Cana Galilae*, for which the cornett, rather than the trombone, would be needed to accommodate the tessitura.[40] However, the details of the music cannot be seen clearly and so any such identification can only be speculative.

It appears that straight and curved cornetts were used side-by-side through the sixteenth century and beyond. An illustration by Hans Mielich in the illuminated manuscript of Lassus' *Psalmi Poenitentiales* shows the composer directing a performance of the Munich *Hofkapelle*. The musicians are grouped around a table, on which is a clavichord or virginal, played by Lassus himself, and a number of part-books.

[38] Bassano, 12
[39] Bassano, 13
[40] Gutreau, 245

Figure 10: Hans Mielich, Chamber Concert at the Bavarian Court (detail) – c.1570

(Bavarian State Library)

The detail above includes curved and straight (possibly mute) cornetts, trombone and rackett; elsewhere in the picture are violins, viols, lute, transverse flute and curtal.[41] Another wind instrument has sometimes been identified as a recorder, although Barra Boydell thinks it more likely to be a wind-cap instrument such as a crumhorn.[42]

A late-sixteenth century engraving by Paul Lautensack shows an organist playing a small single-manual organ, with a small boy singing and another musician playing a straight cornett:

[41] Ausoni, 222
[42] Boydell, 16

Figure 11: Paulus Lautensack, Nuremberg Organist with a Chamber Organ – 1579[43]

The cornett is shown without a separate mouthpiece, indicating it must be a mute cornett (a form not discussed in Virdung or Agricola, but which appears in later treatises, and of which there are many surviving examples – see below). The cornettist may be reading from the singer's music, or playing from memory. It is not clear whether he is an adult player or an older boy, but the two figures on the right are dressed alike, and in a style similar to the clothing in the Pontormo sketch above. Their relation to the organist suggests a teaching situation, as do the stringed instruments hanging on the wall and the books on the shelves. Perhaps the cornett is being used to double the voice, or to play a second part. This usage is suggested by publications such as that by the Englishman Thomas Whythorne in 1590 which

[43] Salmen, 191

includes songs '… for two children to sing. Also they be aptly made for two treble Cornets to play or sound: or otherwise for voices or Musicall Instruments, that be of the like compasse or distance in sound'[44] and also by the *Varii Esercitii* of Antonio Brunelli (1614),[45] which includes ornamentation exercises for two high voices with basso continuo:

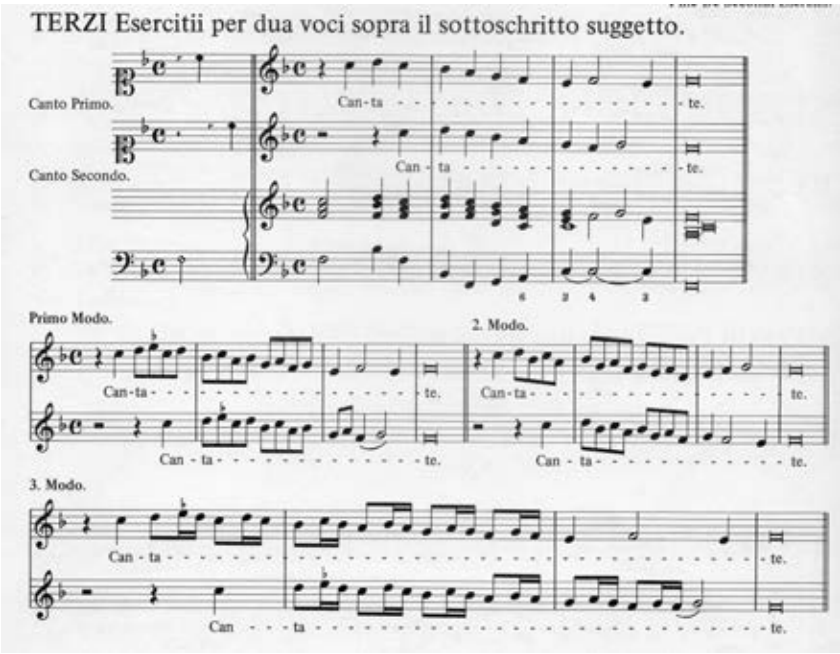


Figure 12: Excerpt from Erig (ed.), Brunelli, Varii Esercitii (1614)

Such exercises would be entirely appropriate for the musicians in the Lautensack illustration.

A 1586 engraving attributed to Hendrick Goltzius shows a group of musicians playing from a covered platform whilst a procession passes below them:

[44] Whythorne, title page of Cantus part-book
[45] Erig

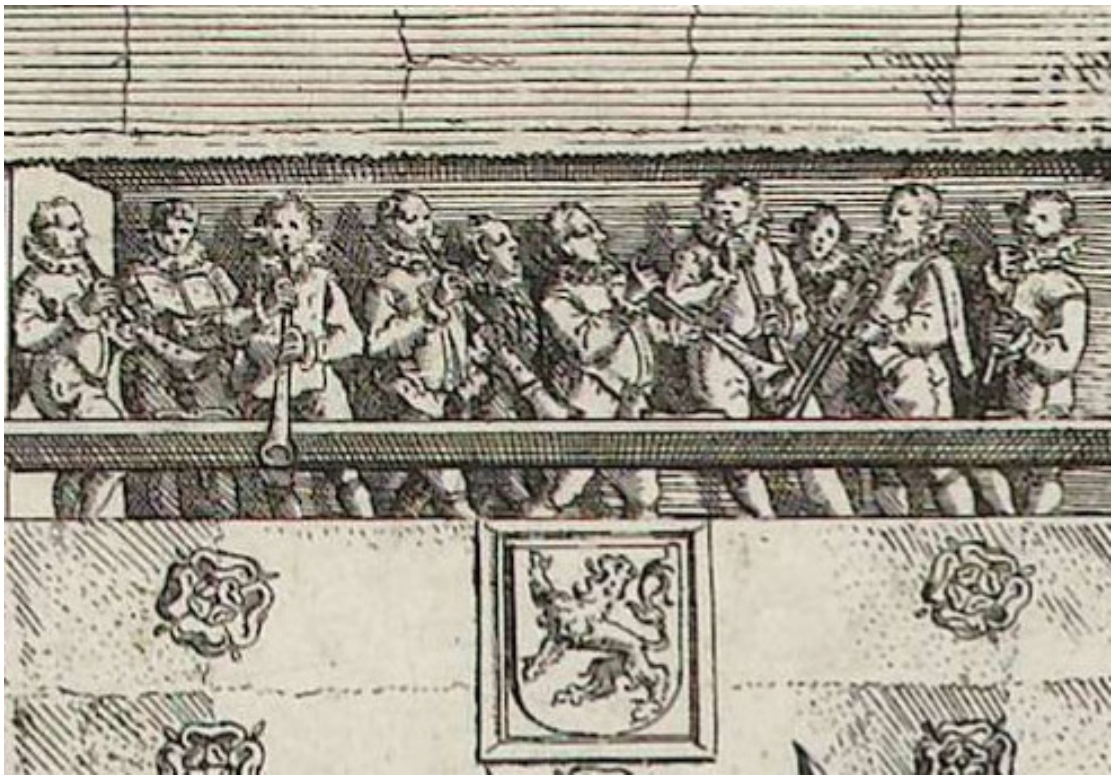


Figure 13: attrib. Hendrick Goltzius, 'Delineatio Pompae Triumphalis' (detail) – 1586

(Strong and van Dorsten)

This engraving is part of a series recording, 'as propaganda for the new regime',[46] the grand entry into the Hague in January 1586 of Robert Dudley, Earl of Leicester. He had been made commander of the English forces in the Netherlands in 1585, and moved much of his household apparatus with him for the two years or so he was there. In Fig.13, a curved cornett is visible on the left, whilst the player on the extreme right plays what could be a straight cornett; the other musicians play shawms and a trumpet. The tops of part-books are just visible on the ledge in front of the players; these are literate, trained musicians.

[46] Strong and van Dorsten, 48

Dudley was one of the most powerful men in England during the reign of Elizabeth I, and was known as a patron of the arts. He maintained companies of musicians and actors, who travelled widely, including a European tour during 1585-7, when they ended up staying at the Danish court for several months.[47] These cannot be the same musicians as shown in the Goltzius illustration, but there is some evidence that the Earl did take cornett players with him to the Netherlands; his surviving household accounts include 'A Note of the Number which are to attend your Lordship in your Journey into the Low Countries', which makes reference to two cornetts and six 'trompetts'. [48]

A curved cornett can just be seen in Caravaggio's 'Musicians', thought to have been commissioned by Cardinal Francesco Maria del Monte, and showing a group of four youths, one of whom is depicted as a winged Cupid holding a bunch of grapes, whilst the remaining three are dressed in vaguely Classical garments. A lutenist tunes his instrument, and the figure with his back to us is holding a music part-book (the music is not decipherable), with a violin and bow resting to his left. In the background the cornettist, usually identified as Caravaggio himself,[49] looks up towards the viewer.

[47] Rosenberg, E., 305
[48] Adams, 429
[49] Christiansen, 23.

Figure 14: Caravaggio, The Musicians, 1595-96

(Metropolitan Museum of Art, New York)

Both straight and curved forms can be seen in an early seventeenth century altarpiece by Ludovico Carracci. Their players are joined by other angels playing bass viol, trombone, recorder, harp, lutes, cymbals and triangle; there also appears to be an organ in the background.

Figure 15: Ludovico Carracci, Paradise, c.1616 - altarpiece in San Paolo Maggiore, Bologna (detail)

It appears, then, that the earliest instruments we can unambiguously identify as cornetts were straight in form, with the curved type being a slightly later development, casting some doubt on the received supposition that cornetts evolved from animal horns. This question needs further research, but whatever the details of their origin, both curved and straight treble cornets were used throughout the sixteenth century. It is not until the 1600s, however, that we begin to see firm evidence of a greater diversity of forms.

CHAPTER 2

SEVENTEENTH CENTURY: DIVERSITY OF FORMS

By the early seventeenth century we find cornetts in a variety of shapes and sizes. Whilst these were first described in 1618 by Michael Praetorius, we must assume that expansion of the cornett family occurred through the second half of the sixteenth century.

Born around 1571, Prateorius was a prolific composer of Lutheran church music, but is particularly important for his theoretical writing, notably the three volumes of *Syntagma Musicum*, published between 1614 and 1619. The second volume, *De organographia*, is an encyclopaedic survey of the musical instruments of the time, and contains much more detail than Virdung or Agricola, particularly in relation to scaled drawings of instruments, and charts of their ranges.

Praetorius begins his classification of instruments by the means of sound production – what he calls the 'quality of generation'. In this respect he follows Virdung and Agricola, for he discusses three classes: wind, stringed, and 'struck' instruments, and further subdivides the winds into those which use the 'air of the atmosphere, and those which are blown by human breath'.[50] Again, like the previous two writers, he separates the mouth-blown instruments into those with no fingerholes, such as trumpets and trombones, and those with holes. Praetorius then makes a further division: 'These instruments with holes are of three kinds: the first has the holes on

[50] Crookes, 21

top only; the second has them on top and underneath [the cornett is a member of this class]; and the third has them on top, underneath, and on the sides'.[51]

Before going on to discuss the individual types of instruments in more detail, Praetorius considers some further refinements to his classification, through what he calls the 'measurement of quantities', that is to say, length, breadth and depth. Length, for Praetorius, concerns the issue of whether the pitch of the instrument remains constant over time. He tells us that whilst some instruments such as pipe organs and percussion instruments remain constant in their pitch, even when played for extended periods, the pitch of most instruments varies readily and frequently: 'This is the case with all mouth-blown wind instruments, with bagpipes, and with nearly all stringed instruments'.[52]

The 'breadth' of the sound is to do with how many parts or voices an instrument can play. Whilst keyboard and plucked string instruments can play several lines at once, most instruments can only play a single part: 'Into this class come all mouth-blown instruments: sackbuts, cornetts, recorders, schalmeis, and the like'.[53]

Finally, Praetorius consider the issue of 'depth', which he uses to mean whether an instrument can play above or below its natural compass. Whilst stringed and percussion instruments, he says, do not easily play outside their normal registers, 'there are some instruments that can be made to play quite well, rather higher or lower

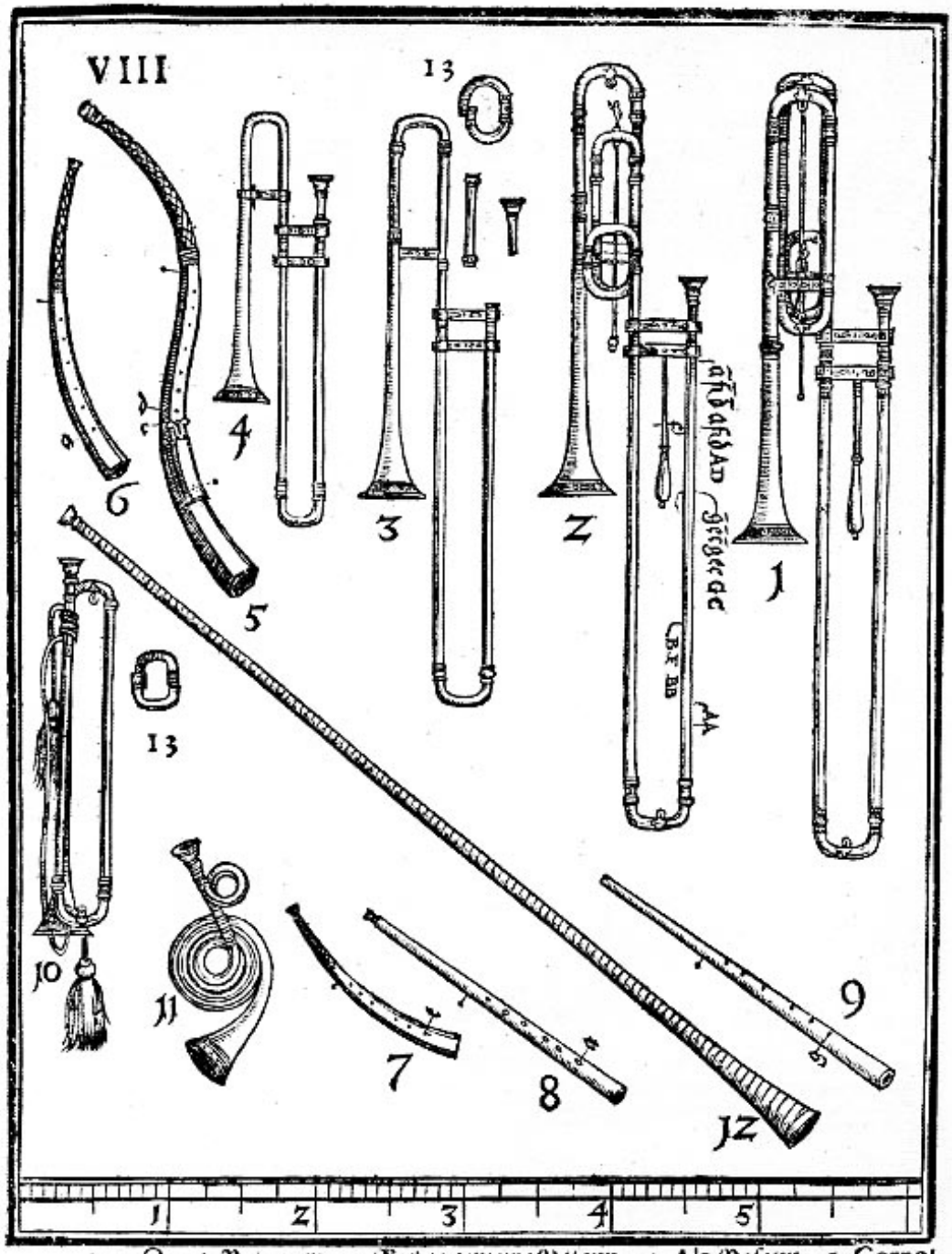
[51] Crookes, 22
[52] Crookes, 25
[53] Ibid.

than is normal, when they are in the hands of a virtuoso. Thus is done by the mouth – regulating the embouchure, or varying the air-stream.'[54]

Again, his subsequent discussion of the cornett makes clear that it is one of the latter kind, whose range can be extended by a good player.

Praetorius includes cornetts in the class of wind-instruments 'with holes on top and underneath', and initially, in the introduction to the second part of *Syntagma Musicum*, he mentions '*Cornu, cornetto* – the black, curved cornett', and '*Cornamuti* – the yellow, straight cornett'.[55] The main description comes in Chapter 8,[56] where Praetorius makes a principal division between straight and curved cornetts, and then proceeds to discuss the different varieties of each. Before considering his qualitative descriptions, it will be useful at this point to refer to the detailed drawings which are such a valuable feature of *Syntagma Musicum*. Two of the woodcuts show cornetts: Plate VIII, showing three sizes of curved cornetts, and two straight ones, as well as trombones and trumpets:

[54] Crookes, 26
[55] Crookes, 22 At first sight Praetorius seems to be introducing a further classification here based on colour, but actually this distinction arises from the mode of construction on the two types, discussed below. The curved cornetts were black because they were normally covered in black leather or parchment, whereas the straight ones were 'yellow' because they were made in a single piece and did not need the leather covering, and hence showed the natural colour of the wood.
[56] Crookes, 46



1. 2. Quart-Posaunen. 3. Rechte gemeine Posaun. 4. Alt-Posaun. 5. Corno/ Groß Tenor-Cornet. 6. Recht Chor Zinck. 7. Klein Discant Zinck / so ein Quint höher. 8. Gerader Zinck mit eim Mundstück. 9. Still Zinck. 10. Trommet. 11. Jäger Trommet. 12. Hölzern Trommet. 13. Krumbbügel auff ein gans Thon.

Figure 16: Plate VIII from Praetorius – *Syntagma Musicum II* (1618)

and Plate XIII, showing two sizes of mute cornetts, in addition to shawms, crumhorns and a bagpipe:

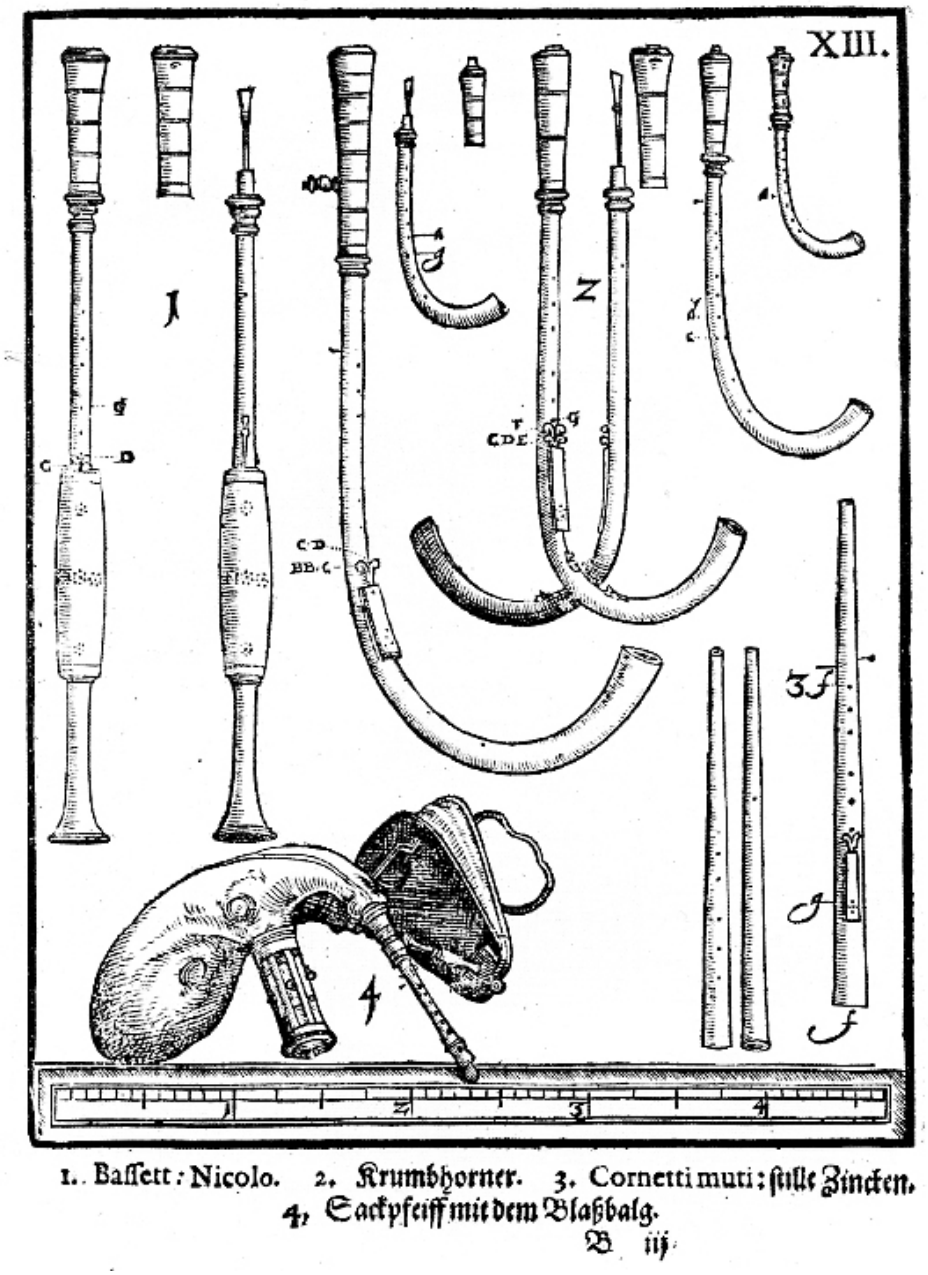


Figure 17: Plate XIII from Praetorius – *Syntagma Musicum II* (1618)

Having introduced the straight and curved cornetts, Praetorius observes that the straight instruments come in two kinds: 'cornetto diritto' or straight cornett, having a separate mouthpiece (shown as No.8 *Gerader Zinck mit ein Mundstück* in Plate VIII); and *cornetto muto*, where the mouthpiece is made as an integral part of the instrument (No.9 *Still Zinck* in Plate 9, and No.3 *Cornetti muti: stille Zincken* in Plate XIII). The latter shows two sizes of mute cornett, a larger size with a key, and front and back views of a smaller size. Praetorius says that the sound of the mute cornett is 'beautiful – very soft and smooth'.[57]

Three sizes of curved cornetts are described. The most common size, what we now call a treble, is shown as No.6 in Plate VIII, labelled *Recht Chor Zinck* – 'Recht' in this context is usually translated as 'normal' or 'standard'. The implication that this is the usual or most common size of cornett is borne out by the numbers of surviving instruments – Edward Tarr's 1981 survey of cornetts in museums lists a total of 311 instruments, of which 140 (45%) are curved trebles, by far the highest proportion.[58] I have produced a graph of Tarr's data below, to show the distribution more clearly:

[57] Crookes, 46
[58] Tarr, 26

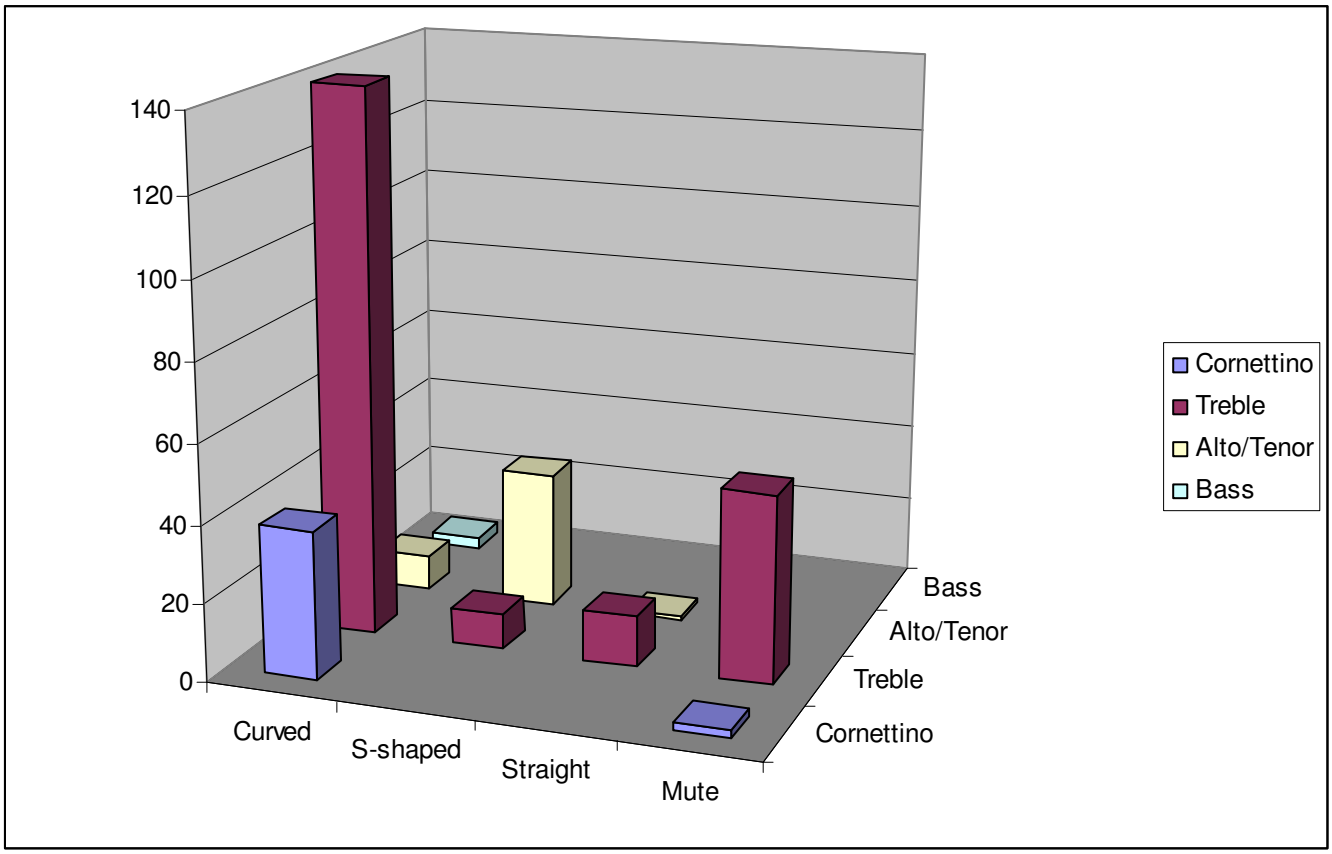


Figure 18: Numbers of cornetts in museums, classified by size and form (Author's graph, data from Tarr)

The same data are also shown below in tabular form:

	Curved	S-shaped	Straight	Mute
Cornettino	38			2
Treble	140	9	13	48
Alto/Tenor	9	35	1	
Bass	3			

Figure 19: Numbers of cornetts in museums, classified by size and form (Author's table, data from Tarr)

Besides the curved trebles, there are also substantial numbers of mute trebles, curved cornettini and tenors. The other forms are less numerous, but given the relatively small numbers involved overall, it would be risky to draw conclusions about their relative popularity.

Praetorius annotates his illustrations to show the lowest note for each instrument. Thus the *Recht Chor Zinck* and *Gerader Zinck* in Plate VIII both have A as the lowest note, whilst the *Still Zinck* in the same plate shows G. According to Praetorius, 'all cornetts, of whatever kind, have a natural range of a 15th, from A to A'', although in falsett some players can go up to a good E''', sometimes even G''', in the upper register, and down to bottom G or F'.[59]

This is in agreement with his chart of ranges:[60]

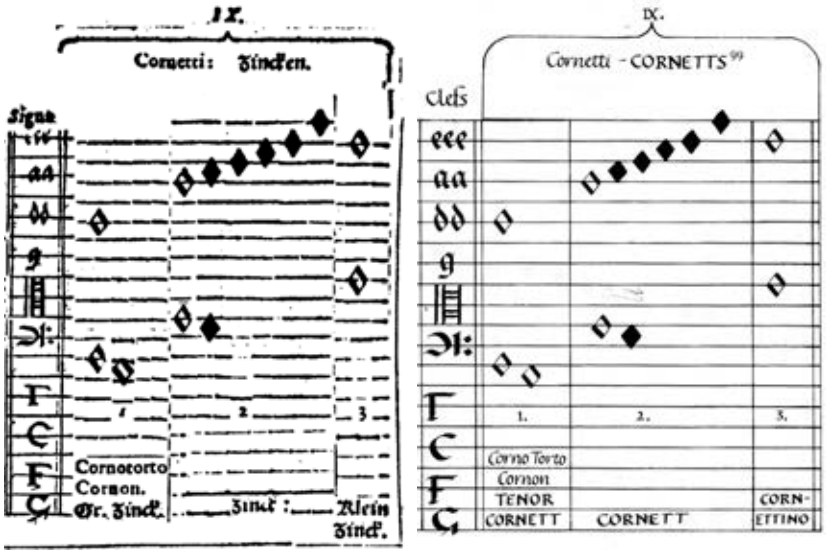


Figure 20: Cornett ranges – from Praetorius, *Syntagma Musicum II* (1618)

(original, and modernised version from Crookes)

[59] Crookes, 46
[60] Crookes, 36

Here, the range for the *Zinck* which must equate to the *Recht Chor Zinck* or standard treble cornett, is shown as A_3 to A_5, extendable downwards to G_3 and upwards to G_5. As he explains:

> [the table shows] the natural upper and lower limits of all wind instruments (shown by the white notes) and the degree of falsett on either side that a skilled player can elicit…since falsett is not within everyone's ability…I have indicated it with black notes.[61]

The mute cornett in Plate VIII is shown as being pitched a tone lower than the treble, with g as its lowest note. The surviving mute cornetts in Tarr's catalogue show approximately equal numbers of instruments judged to play in a or in g, by modern players. [62]

The remaining cornetts in Plate VIII are the tenor (No.5), pitched a 5^{th} below the treble, and having a range from D_3 (or C_3 – the illustration shows that if the instrument is fitted with a key, the range is extended downwards by a tone) to D_5 – and the cornettino or *Klein Discant Zinck*, with a range E_4 to E_6.

Praetorius considered the tone of the tenor to be 'unpleasantly horn-like'[63] and thought it better to use a trombone instead; however, Bruce Dickey points out that

[61] Crookes, 34
[62] It must be noted, though, that the instruments were also judged to be in a range of pitch standards, and sometimes different players disagreed about the pitch for the same instrument (the implied pitches of these instruments are discussed further below).
[63] Crookes, 47

tenors ‘were widely used, judging from the large number of cornett parts written in tenor clef or descending below the range of the standard cornett’.[64]

Finally, the cornettino is described as being pitched a 5th higher than the treble and sounding ‘quite pleasant’ according to Praetorius.

The remaining illustrations occur in Plate XIII, and show two sizes of mute cornett: an instrument with a single key, with confusing labelling which seems to imply a lowest note g or f with the key; and two views of a shorter, keyless instrument with no pitch labelling.

The presence of measurement scales in the illustrations in *Syntagma Musicum* allows some analysis of apparent dimensions. I have extracted the cornetts from Plates VIII and XIII and scaled them consistently, resulting in the following diagram:

[64] Dickey (1997), 55

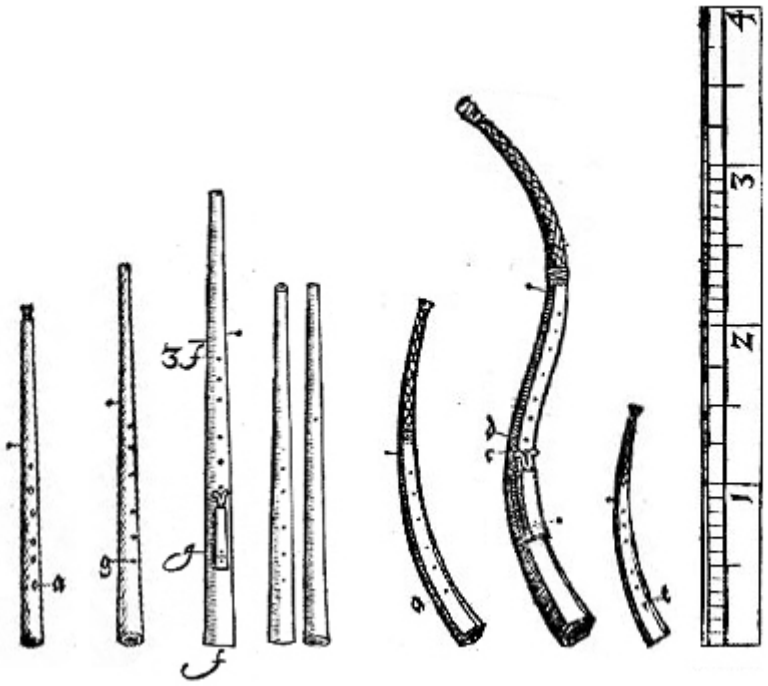


Figure 21: Praetorius' cornetts, scaled consistently (Author's figure, after Praetorius).
(Left to right: *Gerader Zinck* (Pl VIII; *Still Zinck* (Pl. VIII); *Still Zinck* (Pl. XIII); 2 views of *Still Zinck* (Pl. XIII); *Recht Chor Zinck* (Pl. VIII); *Gross Tenor-Cornet* (Pl. VIII); *Klein Discant Zinck* (Pl. VIII).

Even with a crude visual analysis, it is clear that the *Gerader Zinck* and *Recht Chor Zinck* are of similar lengths, consistent with their labelled lowest notes of a. The otherwise unlabelled mute cornett, shown in front and back view in Plate XIII, also appears to be of a size with these, suggesting that it too may be depicting an instrument in a. The *Still Zinck* from Plate VIII, labelled as being in G or F, appears significantly longer, and is apparently inconsistent with the other instruments. Herbert Myers has argued that this particular illustration must show an instrument in *CammerThon* (chamber pitch) as opposed to the lower *ChorTon* (choir pitch) Praetorius uses for the majority of the instruments (note that Praetorius' definitions of

choir pitch and chamber pitch are the inverse of 18th century German usage, where choir pitch was the higher).[65]

Myers points out an inconsistency in the depicted size of the cornettino, relative to the treble cornett. Praetorius is very clear that the cornettino is pitched a fifth higher than the standard cornett, both in his chart of ranges (see above) and in his terminology ('Klein Discant Zinck/so ein Quint höher'). However, Myers' analysis of relative dimensions suggests that the illustrated cornettino is actually a 'Quart Zinck', a fourth higher than the treble.[66] This is, again, in accordance with Tarr's catalogue, where the majority of the surviving cornettini were judged to play in D at a pitch of around A=466Hz, with only a couple being considered to be in E.

In terms of their general appearance, Praetorius' straight and mute cornetts have plain profiles, while all three sizes of curved cornetts show the typical octagonal cross-section, and diamond-patterned decoration cut into the upper part; these features agree well with the majority of surviving instruments.

[65] Myers, 30-31
[66] Myers, 41

Exactly contemporary with *Syntagma Musicum II* is the well-known painting 'The Sense of Hearing', by Jan Brueghel the Elder and Peter Paul Rubens:

Figure 22: Brueghel, Jan the Elder and Rubens, Peter Paul, The Sense of Hearing – 1617-18

(Prado, Madrid)

This painting is one of a series of five showing allegorical depictions of the senses, commissioned by the city of Antwerp as gifts for Albert VII, Archduke of Austria and, with his wife Isabella, ruler of the Habsburg Netherlands, on the occasion of the couple's visit to the city in 1618. A nude female figure, usually identified as Venus, plays a lute, while Eros sings. Just visible in the upper left of the painting is a group of musicians playing a six-stringed cello, lute, transverse flute and recorder, accompanying singers. David Yearsley has observed that the painting is 'strikingly

lacking in representations of actual musical sound';[67] the central figure plays the lute, a quiet instrument, and the other musicians are distant, even peripheral. However, from a musicological point of view, the arrangement at the bottom left of the painting forms a fascinating snapshot of contemporary instruments – see the detail below.

Figure 23: Brueghel/ Rubens, The Sense of Hearing (detail)

(Prado, Madrid)

Under the harpsichord on the left are a trombone and a drum, with a bass viol leaning against it. A recorder lies behind the viol, and there is a recorder case on the floor between two six-string cellos (or similar – their rounded shoulders suggest they are members of the violin family, rather than viols), and just in front are a small lute and a pocket violin. A violin rests on top of a stool, with a shawm and a lira da braccio.

[67] Yearsley

Two more mid-sized bowed stringed instruments lean against stools (these, too, appear to have six strings but rounded shoulders) and there is a small, white (perhaps ivory) recorder. There are also three cornetts; a left-curving treble under the stool in the middle; a straight treble with separate mouthpiece under the stool at the right; and a tenor, resting against a stool at the back. This provides a useful cross-reference for the cornetts described by Praetorius, giving added confidence that these varieties of the instrument were in common use in the early seventeenth century.

The part-books on the stands attached to the table are not of instrumental music, but have been identified as Peter Phillips' second book of madrigals,[68] also dedicated to Albert and Isabella.[69]

Both treble and tenor cornetts can be seen in a painting on a virginal cover by Hendrick van Balen, for an instrument owned by Queen Maria Kazimiera Sobieski of Poland, which shows the episode, recounted by Ovid in Book V of his *Metamorphoses*, in which Minerva (the Roman incarnation of the Greek goddess Athena) flies on the winged horse Pegasus to Mount Helicon, where she meets the Muses:

[68] Il secondo libro de madrigali (1603)
[69] The concept of instrumental performance of vocal music is discussed in Chapter 5.

Figure 24: Hendrick van Balen: Minerva among the Muses, c.1615 (detail)

(Wilanów Palace Museum, Warsaw)

In Greek mythology, the Muses were the nine daughters of Zeus and Mnemosyne, and goddesses of artistic inspiration.[70] Although each Muse had her own particular sphere of artistic influence, the Muses as a group in Renaissance painting came increasingly to be identified as musicians, and were often shown playing or associated with a variety of instruments.[71] As well as a tenor cornett held by the Muse in red, to the right of the seated Minerva, the other Muses are shown holding viols, harp, lute, a cittern or similar plucked instrument, and a shawm. In addition, several other instruments are shown lying on the ground, including a hurdy-gurdy, trumpet, trombone, lute, viols, timbrel, shawm, rebec, a drum and two treble cornetts. There are also open music books, and other, closed books.

[70] Woodard, 86-90
[71] Ausoni, 84

During the seventeenth century cornetts begin to appear in still-life, or *vanitas,* [72] paintings. Such arrangements are typically used to signify the transitory nature of human existence; instruments are favourite subjects because of the ephemeral nature of music, and because they can represent both sound and, in the absence of their human players, silence. Lutes are often shown resting on their strings and soundboards. This is sometimes said to further emphasise their silence although, perhaps more prosaically, it must be observed that, given the lute's curved back, placing it face-down is by far the most stable placement to avoid its rolling off the table. Instruments are also sometimes depicted, as Ausoni observes, with broken strings or dusty surfaces, to 'highlight the inexorable passage of time'.[73] The complex shapes of musical instruments, of course, offer opportunities for virtuoso artists, especially in the seventeenth century, to display their skills in realistic representation.[74]

Claesz was a Dutch artist, active through the seventeenth century, and the still life in Fig.25 juxtaposes a collection of instruments with the remains of a meal. Depictions of food are common in still life paintings; one of the most frequent allusions, as here, is to the transience of human existence, pleasure and possessions. The food in Claesz's painting appears to have been abandoned mid-meal, and the passage of time is further signified by an open pocket watch on the table.

[72] The term *vanitas* is a reference to Ecclesiastes 1:2 – 'Vanity of vanities, all is vanity saith the preacher' - the style became particularly popular in the Protestant Low Countries at this time.
[73] Ausoni, 56
[74] Some caution is required, and examples of questionable representations appear in Chapter 3 and Appendix 2.

Figure 25: Pieter Claesz, Still Life with musical instruments - 1623

(Louvre, Paris)

A half-full glass of wine is reflected in a mirror – another symbol of human vanity – and we are reminded that even wisdom – symbolised by the tortoise – is transient. The glass bell jars next to the tortoise are perhaps a reminder that scientific knowledge, too, is of this world, and it is surely significant that the jars are empty. Music is another sensual pleasure, and the instruments, separated from their players, and hence silent, remind the viewer that music is a transitory experience. Most prominent is a five-stringed cello or bass violin, whilst a violin hangs in the background, and a lute rests on the table. Hanging next to the violin in the background are a recorder and a cornett. Although little is visible of the cornett, we can at least see the typical diamond-patterning at the top of the instrument, and discern that it is a left-curving instrument.

Besides Praetorius, the other seventeenth century theorist to discuss cornetts at length was the French polymath Marin Mersenne, who published his *Harmonie Universelle* in 1636 which, as well as dealing with various aspects of music theory, acoustics and optics, includes detailed discussions of musical instruments.

Mersenne provides illustrations, although they appear less detailed and more stylised than Praetorius', and lack the latter's dimensional scales (Mersenne does, however, provide some quite detailed measurements within the text). He describes several different sizes of cornett, but his terminology for these is not completely consistent, raising some questions which will be dealt with below. Initially he describes the '*Dessus des Cornets*', which we would expect to translate as 'treble cornett', and in broad terms the instrument he describes corresponds to Praetorius' '*Recht Chor Zink*'; it is shown on the left-hand side in the first of Mersenne's cornett illustrations.

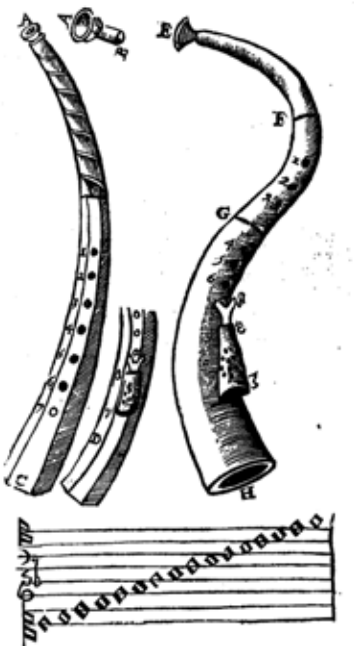


Figure 26: Mersenne's first cornett diagram – *Harmonie Universelle* (1636)

His treble cornett is polygonal in cross-section, although we cannot tell whether it is octagonal or has some other number of sides; the later illustration of the alto cornett (see below) is hexagonal. The decoration at the top of the instrument is in a spiral design, rather than the more usual diamond patterning.

Mersenne shows his treble cornett with seven fingerholes, and says '[it] is shown by AC with seven holes, although many are not equipped with the seventh, which is considered superfluous and useless, because the cornett with six holes has the same range as the others with seven'.[75]

It is not entirely clear here whether Mersenne thinks that cornetts usually had seven fingerholes, but that some instruments had six, or that six was the more usual number. His illustration shows the upper six holes in black, with the seventh in white; he does not explicitly clarify this in the text, but it seems likely that this is related to his statement about the seventh hole being superfluous. Some further clarification can be found later in the text, where Mersenne is discussing the dimensions of the instrument and the spacing of the holes:

> … there are only three *pouces* [~81.3mm][76] from point C to the centre of the sixth hole, and ten *pouces* [~271mm] from point A to the centre of the first. Thirdly, that the separation of the holes is thirteen *lignes* [~29.9mm], except those of 3 and 4, which are of sixteen *lignes* [~36.8mm].[77]

[75] Mersenne, 273 (see Appendix 1 for author's translation of the relevant sections)
[76] Klein, 72. 1 pied = ~32.4cm; 1 pouce = ~27.1mm; 1 ligne = ~2.26mm.
[77] Mersenne, 274

We must assume that Mersenne took his measurements from an instrument having six holes, since he clearly gives a measurement between the bottom of the instrument and the sixth hole, not the seventh. Perhaps, then, this might indicate that he thinks that six fingerholes was the norm, but that some instruments had seven, and he simply shows the seventh in the diagram for the sake of completeness.

The illustration also lacks a thumb-hole. This could be viewed a simple omission, were it not for the fact that Mersenne later observes that 'the Spanish also place a hole at the back … above the first hole'[78].

Praetorius' illustrations clearly indicate thumbholes on all his cornetts, and most of them have six fingerholes, apart from the tenor in Plate VIII, and the larger mute cornett in Plate XIII, both of which have a fontanelle[79] which must be covering a seventh hole.

Tarr's catalogue shows nearly complete uniformity among treble cornetts, the vast majority having six fingerholes and a thumbhole, as described by Praetorius. Although Tarr does list a handful of instruments lacking a thumbhole, most if not all of these are considered to be 19th century fakes.[80] There are also a number of instruments listed with keys covering a seventh hole, but these are all tenors or altos. These also include some without a thumbhole, but again there is at least some question on the authenticity of these instruments; Herbert Heyde notes that three of the tenor cornetts in the collection of the New York Metropolitan Museum of Art, two

[78] Mersenne, 274
[79] A 'fontanelle' in this context is a decorative cover hiding a key mechanism.
[80] Such as the instruments listed as numbers 829-835 in the Stearns Collection, at the University of Michigan, thought to originate from the nineteenth-century Florentine dealer Leopoldo Francioli

of which lack thumbholes, were also acquired from Francioli, although Heyde observes that this provenance is no guarantee that they are forgeries.[81]

Another potential source of information comes in the form of fingering charts for the cornett, of which a few contemporary examples survive; again, all of these show fingerings based on six fingerholes and a thumbhole, such as that in Virgiliano's *Il Dolcimelo*, dating from the early 17th century.[82]

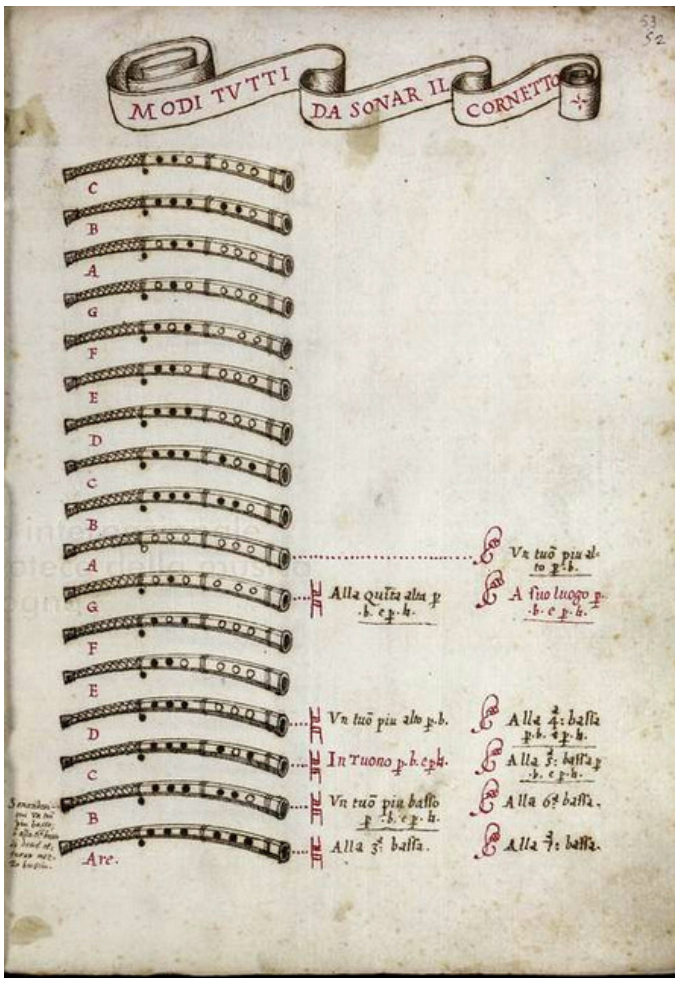


Figure 27: Fingering chart from Virgiliano – *Il Dolcimelo* (early C17)

(International Library and Museum of Bologna)

[81] Heyde, 116.
[82] Leonards, 322-344. An interesting feature of this MS is that parts of it are annotated in red, probably for emphasis or to provide clear points of reference – see Weiner for a fuller discussion of this matter.

Mersenne, like Praetorius, Virdung and Agricola, does not provide any fingering charts for the cornetts he describes. He does, however, describe the method of fingering as follows:

> …one first plays the lowest note, that is to say *ut* of C *sol ut fa* by covering all the holes, and then one plays *re, mi* etc. by uncovering each hole one after the other, until one has played the eight notes of the first octave, and then one re-covers all the holes, giving the next eight notes of the second octave by blowing more strongly, as is done with the flageolet and the flutes; so that it is not necessary to give here another tablature to explain it, since that of the flageolet will suffice.[83]

This again raises some problems in interpreting exactly what Mersenne means. He is implying that covering all the holes on the instrument gives the note C, which he solmises as *sol ut fa.*[84] The clefs in Mersenne's range chart imply a range of C_4 to D_6, suggesting again that the lowest note of the instrument with all holes closed would be C_4, yet this does not correspond with any of the individual sizes of cornetts he describes; for example, he later makes clear that the *Dessus* plays the note A when all the holes are closed (A_3 or A *la mi re*). Perhaps Mersenne is alluding to an earlier remark, in which he tells us that because the cornett is a fully chromatic instrument, any given fingered note can operate as any note in the hexachord: '…one can start *ut, re, mi, fa, sol, la* on any hole; thus the tablature is only showing the range of the

[83] Mersenne, 276
[84] Most sources, such as Hermann Finck's *Practica musica* of 1556 describe C *sol fa ut*, that is to say modern 'middle C', which can serve as *sol* in the soft hexachord on F, as *fa* in the hard hexachord on G, or as *ut* in the natural hexachord on C – see Smith, 21

instrument, and it is in no way limited always to produce UT when all the holes are closed…'.[85]

However, even if the player could think of the lowest note on the instrument as ut, to describe this note as C *sol ut fa* is at best misleading, when none of the sizes of cornett Mersenne describes would have had C as their lowest note.

Leaving aside for the moment the confusion concerning pitch, Mersenne has also told us that the tablature he gives for the flageolet will also serve for the cornett. However, if we examine that tablature, further problems arise.

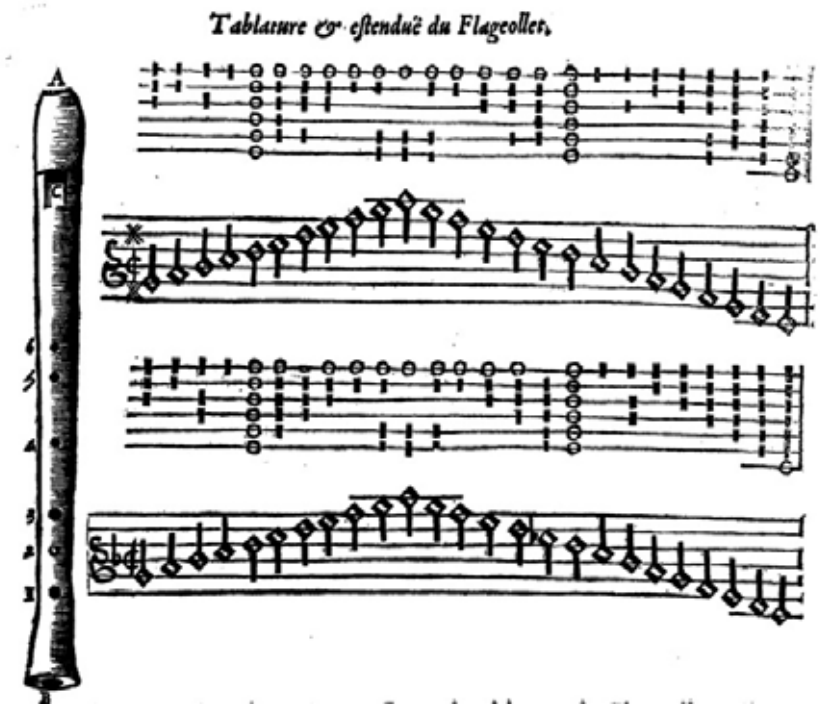


Figure 28: Tablature for the flageolet – from Mersenne – *Harmonie Universelle* (1636)

[85] Mersenne, 275

Mersenne's flageolet is a fipple flute with six fingerholes. The lowest note, on the far right, is indeed C according to the clefs used (and would be C *sol fa ut*), but this is obtained not only by covering all the holes, as indicated by the short black lines, but also by half-closing the hole at the bottom of the instrument:

> If one wants to play the most solemn note, or the lowest of the flageolet, which is shown by the last note [of the tablature], and by the last rank of vertical lines, this rank shows that you must close the six holes, which are represented by the six lines, and that you must half-close the hole of the bell: this is shown by the line crossing the last zero…[86]

Whilst we can perhaps resolve Mersenne's confusion over the number of fingerholes, his apparent view that cornetts lack thumbholes is inconsistent with the other available evidence, and his implication that cornett fingering is analogous to that of the flageolet does not bear close scrutiny.

Besides the *Dessus*, or treble cornett, Mersenne mentions three other sizes. Again, his discussion of these is somewhat confusing and lacks consistency; perhaps the clearest listing is given towards the end of his discussion of the cornett, where he provides a musical example in the form of a Fantasia in five parts, by 'Henry le Jeune' (identified in Grove as Jehan Henry):[87] 'We will now see the music appropriate for

[86] Mersenne, 233 - 'Si l'on veut faire le ton plus grave, ou le plus bas du Flageollet, qui est marqué par la derniere note, & par le dernier rand des petites lignes, ce rang enseigne qu'il faut boucher les six trous, qui sont representez par les six regles, & qu'il faut boucher le trou de la pate à demy: ce qui est signifié par la ligne qui traverse le dernier zero'.
[87] Cohen

the cornetts, so that the examples confirm the discussion, and so we combine theory and practice; now the Fantasia which follows is in the ninth mode transposed'.[88]

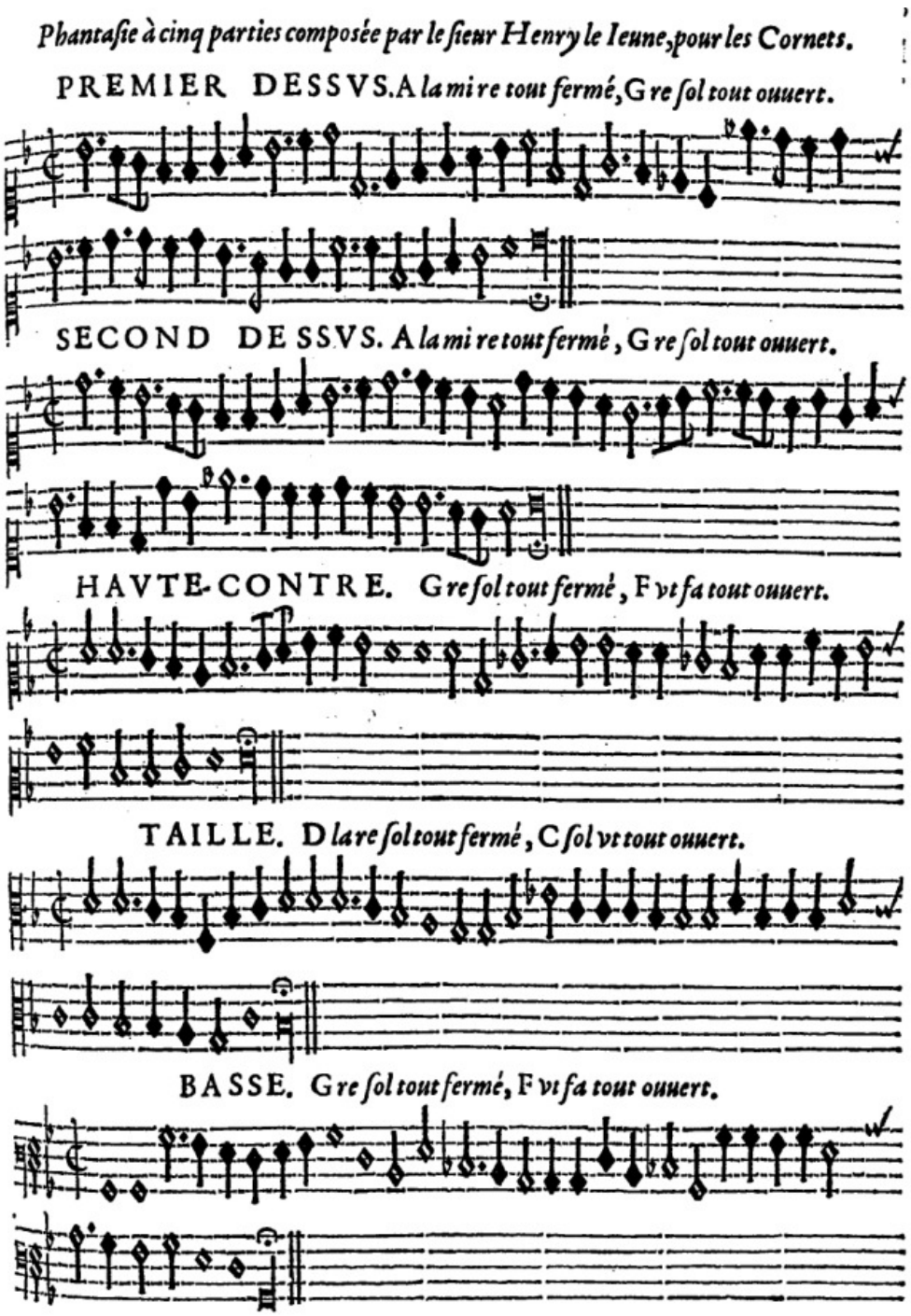


Figure 29: Fantasia in five parts by Jehan Henry – from Mersenne – *Harmonie Universelle* (1636)

[88] Mersenne, 277

The headings on each part – *Dessus, Haute-Contre, Taille* and *Basse* – correspond to the terms Mersenne uses elsewhere in *Harmonie Universelle* to denote the usual vocal ranges (soprano, alto, tenor, bass).[89] However, as we have already seen, he adopts the same terminology to denote the different sizes of cornetts, and the subheadings would appear to indicate the notes that each instrument produces with all holes closed (*tout fermé*), and all open (*tout ouvert*).

The solmisation syllables here are slightly problematic, since they imply that the Haute-Contre and Basse sizes produce the same note (G re sol) with all holes closed, yet they are clearly meant to denote instruments with different ranges, as is apparent from the notation. The transcription into modern notation below is taken from Leonards.[90]

[89] For example, see Propositions III and IV in the fourth book, *De la composition de la musique*, where Mersenne explores the relationshop between the four voice ranges, Dessus, Haute-Contre, Taille and Basse.
[90] Leonards, 332

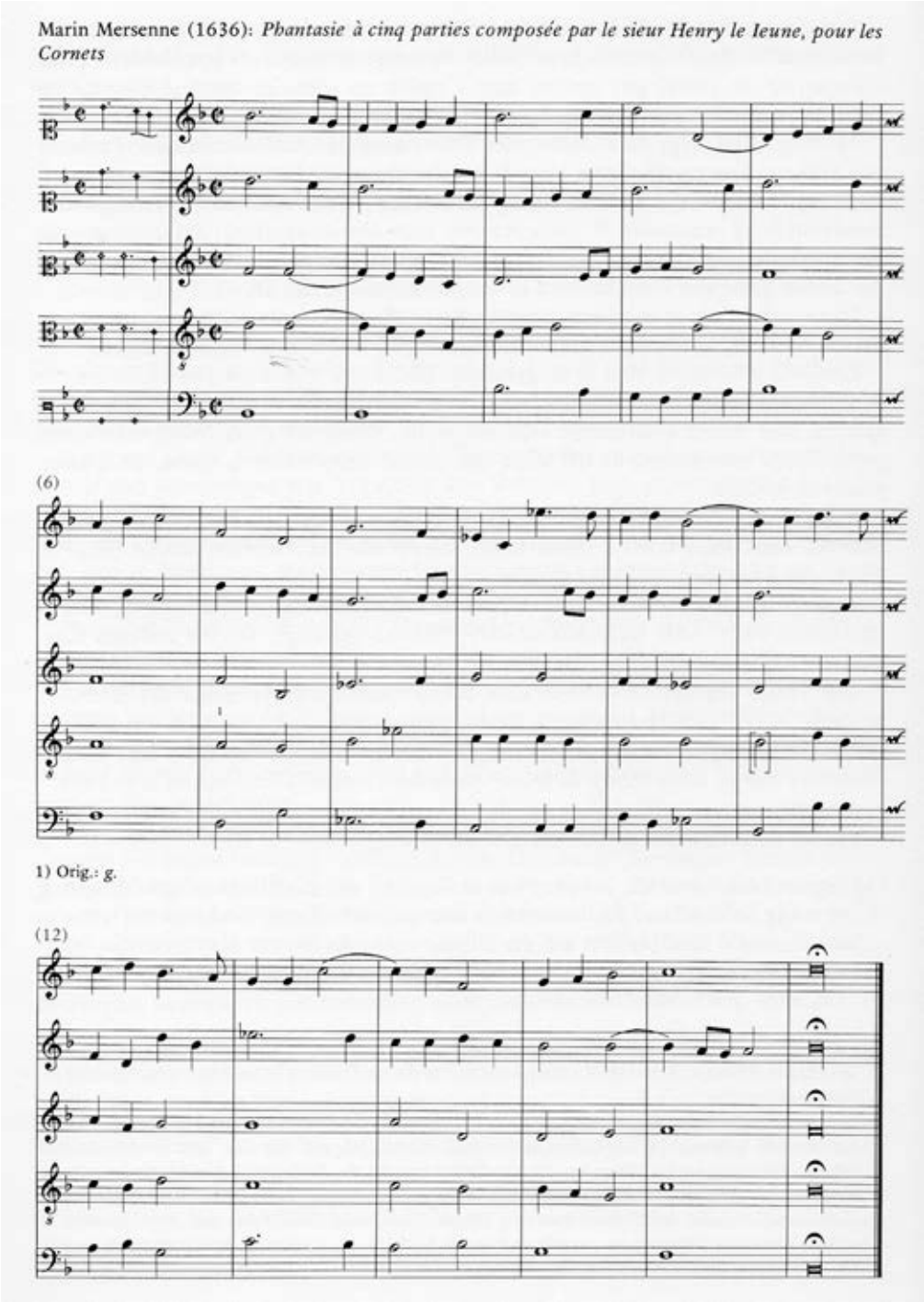


Figure 30: Transcription of the Fantasia in five parts by Jehan Henry – from Mersenne – *Harmonie Universelle* (1636), ed. Leonards

I have shown the ranges that the four sizes of instrument play in this piece in the diagram below, with the implied fully closed/fully open notes from Mersenne's headings (given that the fully-closed note should be the lowest note on the instrument, and so cannot be any higher than the lowest note notated in that instrument's part):

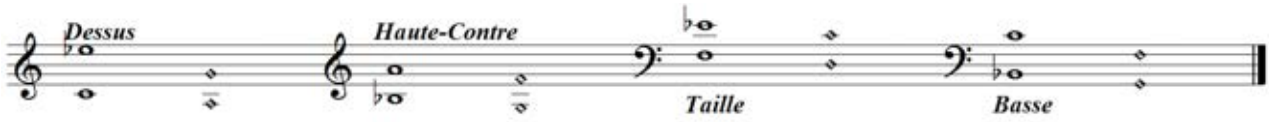


Figure 31: Ranges for each size of cornett in the five-part Fantasia

(the semibreve symbols show the range over which each instrument extends in the music, and the square notes show the fully closed/fully open notes).

The *Dessus* thus indicates an instrument with a lowest note A_3, corresponding to Praetorius' *Recht Chor Zinck*, and the extant fingering charts such as that in Virgiliano already mentioned.

The *Haute-Contre* indicates an instrument pitched one tone below the *Dessus*, with a lowest note G_3, and the *Taille*, an instrument pitched a fifth below the *Dessus*, with lowest note D_3. This *Taille* is thus analogous to Praetorius' *Groß Tenor Cornet*; however, Mersenne's own description of the *Taille* is as follows:

> As for the *Taille des Cornets*, it is very similar to the *Dessus*, as the only difference is one hole, which descends lower, and which is opened by means of the key α, which is covered by the fontanelle βγ, which is why I have only

shown the bottom end of this Alto, so that one can see it goes further than the Treble.[91]

This text, and the reference to the accompanying diagram, which only shows the bottom end of the instrument, is apparently describing an instrument like the *Dessus* in appearance, but pitched a tone lower (and equipped with a key, presumably to enable the player to reach the lowest hole, which would otherwise be too much of a stretch on this slightly larger instrument). This description is in agreement with the other brief comment he makes later in the text, referring to his second pair of cornett illustrations: 'The *Taille* is shown by GH with the key IK, and the mouthpiece L, and this one is in G: for it is different from the *Dessus* in that it has this key'.[92]

It is noticeable that the style of this second pair of illustrations is markedly different from the first, suggesting that they were drawn by different artists. They are only really helpful in identifying the lettered locations that Mersenne mentions, rather than for establishing absolute dimensions, since although he claims the proportions here are better than in the earlier diagram, there are still no scales, and there is perhaps a suggestion of perspective distortion in the drawings.

[91] Mersenne, 273
[92] Mersenne, 278

Figure 32: Mersenne's second cornett diagram – *Harmonie Universelle* (1636)

This descriptive text for the *Taille* is inconsistent with the ranges Mersenne gives in the music example, and he must actually be describing the *Haute-Contre* in these extracts.

Finally, judging from the ranges in the music above, Mersenne's *Basse* has a lowest note of G_2, a fifth below the *Taille*, an octave below the *Haute-Contre* and a ninth below the *Dessus*. He provides a description of the Basse, split over two sections in the text as follows:

The last member, which can be called the *Basse* is shown by EH,[93] and it comes apart at points F and G, so that it can be carried more easily. It has seven holes, like the others, with the seventh opened by a key δ, which is covered by the fontanelle εζ. But this diagram is not in proportion to the others, as it represents a *Basse* four *pieds* [~1299mm] long, and with a range of an Octave, or a Ninth, whereas the *Dessus* is only one and three-quarter feet long, therefore I show here the exact measurements.[94]

Now since I have given the proportions of the *Dessus*, I want to adjust those of the *Basse* (of which one can see here [Fig. 32] the proper diagram in proportion, because the other one is not accurate in this respect) in which the holes are spaced by $1^{2}/_{3}$ *pouce* (~45mm): apart from the 3rd and 4th, which are spaced by half a *pied* [~162mm], the 6th and 7th by $6^{2}/_{3}$ *pouces* [~180mm], and from the seventh hole to the extremity of the bell D is $10^{1}/_{6}$ *pouces* [~275mm]. From the mouthpiece A to the first hole, there is one *pied* and seven *pouces* [~515mm]: the opening of the bell is two *pouces* [~54mm]. The diameter of the mouthpiece is five *ligne*s [~11.5mm] at the top and one *ligne* [~2.3mm] at the start of the hole: you must adjust the different diameters at the bottom of the segments, or the three parts of its body; that at the first part C is $1^{1}/_{4}$ *pouces*, next to C, and that of the second part CB next to B is eight *lignes* [~18.4mm]: from which it is easy to conclude that the bore, or the opening of the cornett, always diminishes from the opening of the bell D to the top of the Cornett A. The same can be said

[93] Mersenne is referring to the drawing reproduced in Figure 26.
[94] Mersenne, 273-4

> of the other segments… as for the key E, it is covered with the fontanelle EF, and is for closing the first hole at the bottom, which the fingers cannot reach.[95]

Mersenne's *Basse*, as described in the text and shown in the illustrations, is thus an s-shaped instrument with seven fingerholes, the lowest one fitted with a key, and with a total length of about 1300mm (four *pieds* approximates to 1299mm, and the sum of the measurements given for the distances from the top and bottom of the instrument to the nearest holes, and for the hole spacings, comes to about 1312mm; the two values are in reasonable agreement allowing for measurement error).

Mersenne's bass cornett has provoked much speculation among organologists, mainly because although, as Spielmann reports,[96] there are some 55 inventories from the 16th century onwards which mention bass cornetts, there are no surviving instruments as large as the dimensions that Mersenne gives. Tarr's catalogue lists three instruments described as basses: one of these, in the New York Metropolitan Museum of Art, is possibly a 19th century instrument,[97] and is thought by Heyde to be 'bogus'.[98] The remaining two in Tarr's catalogue are in the museum of the Paris Conservatoire. Overton expands on this and describes four of the Paris instruments as *Baßzink*,[99] but the three instruments he gives measurements for are all appreciably shorter than

[95] Mersenne, 277-8
[96] Spielmann. Note also that the serpent, which can be thought of in acoustic terms as a bass member of the cornett family, was apparently thought of by Mersenne as a different instrument from the bass cornett, since he devotes a chapter to the serpent quite separate from that on the cornetts.
[97] Tarr, 169
[98] Heyde, 115
[99] Overton, 109-110

Mersenne's *Basse*, with two of them around 1050mm and the third around 1100mm.[100]

The other troubling aspect of Mersenne's *Basse* is that he describes a three-piece construction, for ease of transportation. Some surviving cornetts do show a segmented construction, but these are all higher-pitched instruments from later in the cornett's history, such as the 18th/19th century instrument listed by Tarr in a private collection in Basel.[101]

Figure 33: Segmented treble cornett – 18th / 19th century (from Tarr)

Although this segmented construction would seem to offer some advantages for portability of the larger sizes, none of the surviving tenor or bass cornetts are made in this way.

[100] Attempts have been made by makers such as Roland Wilson and Serge Delmas to reconstruct bass cornetts, either scaled up from large tenors in museums, or working from Mersenne's dimensions – see Kridel, 87
[101] Tarr, 50

Questions of Configuration

Curved or straight?

A question seldom addressed in the literature, but in my experience often asked of cornett players by audience members, is 'why is the instrument curved?'. Whereas a straight cornett can be turned on a lathe like any other straight woodwind instrument, curved cornetts demand a far more involved process. A piece of wood is cut to the approximate shape of the outside of the instrument, then split along its length and the internal bore carved by hand.

Figure 34: Cornett maker John McCann carving the internal bore of a curved cornett

(http://www.mccann-cornetts.com/pages/construction.html)

The two halves are then glued back together, and the outside of the instrument planed to its typical octagonal profile (the eight sides result from, essentially, cutting off the corners of the initially four-sided block). The glue joint is often reinforced by thread bindings around the instrument and there is sometimes a brass ferrule around the

mouthpiece socket. A decorative design, usually a diamond pattern, is cut into the upper portion of the cornett, and it is finally covered with thin leather or parchment.

It is reasonable to suppose that this laborious manufacturing process must have conveyed some benefit on the curved cornetts, to result in their preferential use compared with their straight siblings. Bruce Dickey has suggested that the curved form perhaps carried some significance arising from a symbolic association of animal horns with imagery of the last judgement.[102] Another possibility is that the curved instruments give an ergonomic advantage. Many illustrations show cornetts being played from the corner of the mouth, and projecting sideways. In this position, a curved instrument brings the fingerholes closer to the body, and gives a similar posture to that of a transverse flute.[103] Finally, carving the bore allows the maker direct access to the internal surface, which can be sanded and polished to a high degree – in contrast to a lathe-turned instrument, where it is more difficult to polish the bore. A smoother bore may well promote a brighter sound, which seems to have been favoured, and my own experience as a player suggests that it also makes for a more free-blowing and responsive instrument.

Left or Right?

As depicted in Praetorius' woodcut, the treble instrument curves to the left, which is the opposite way from most surviving instruments in museums. Of the 140 curved treble cornetts listed by Tarr, only 38 (approximately 27%) are listed as curving to the left.[104] Presumably this 'handedness' of cornetts reflects some kind of preference

[102] Hathaway
[103] It is perhaps not coincidental that cornett and flute seems to have been a common doubling in the sixteenth and seventeenth centuries.
[104] Tarr, 11-262

among players. Virdung makes it clear that recorder players had the option of playing with either the left or the right hand uppermost:

'Recorders generally have two holes at the lower end … because some players are accustomed to having the right hand above and the left hand below on the pipe, and these [players] close the hole on the right side with wax … thus the two holes are made equivalent, so that they can be serviceable to any [player]'.[105]

The same sort of preference must have been at work among cornettists; however, the curvature of the instrument means that the dual-hole recorder solution would be impracticable, and it would have been necessary to produce left and right 'handed' cornetts. Whether this is literally a reflection of what we in the twenty-first century would call 'left-handedness' is not clear; if this were the only factor, it would be expected that the proportions of left-handed instruments, and left-handed individuals in the population, would be similar. Modern studies, such as Hardyck and Petrinovich,[106] suggest that there are typically close to 10% left-handed individuals in the population, meaning that the proportion of left-handed cornetts is around two to three times what would be predicted from 'handedness' alone. Another factor which could influence this choice is that of mouthpiece position. Mersenne tells us that:

'…the embouchure will be formed on the right side of the mouth by those who are right-handed, and on the left side by those who are left-handed, although you will

[105] Bullard, 168-9
[106] Hardyck, 385

encounter those who play on the right, on the left, and in the middle of the mouth with equal facility'.[107]

Bruce Dickey further points out that the seventeenth century German theorist Daniel Speer 'comments that the placement depends on the teeth, and that some players even play in the centre of the mouth'.[108]

From a consideration of physical comfort, it might be expected that a player placing the mouthpiece at the right corner of the mouth would need a right-curving cornett, and vice-versa for left-side placement, but the evidence from iconography is conflicting in this regard. For example, a *trompe l'oeil* ceiling painting in the Rosenborg Castle in Copenhagen shows musicians of the court of Christian IV of Denmark (1577-1648); it includes two cornett players in the detail below:

Figure 35: Reinhold Timm (attrib.), Rosenborg Castle, Copenhagen c.1635

[107] Mersenne, 275 ('Mais il faut remarquer qu'il s'embouche du costé droit par ceux qui sont droitiers, & du costé gauche par les gauchers, encore qu'il s'en rencontre qui en ioüent à droit, à gauche, & par le milieu de la bouche assez aysément.')
[108] Dickey (1997), 65

The musicians are playing from a gallery, and the cornetts are both shown as left-curving, but whereas the player on the left has the left hand uppermost, his counterpart on the right has the hand positions reversed (the mouthpiece placement also differs, with one player having a side embouchure, the other, a more central position).

Another proposed explanation is that church musicians playing from side galleries might select a left or right curved instrument depending on which side of the church they were playing from, so as to project the sound of the instrument into the centre of the church more effectively. Whilst this theory has a certain logical appeal, my own experience as a performer leaves me sceptical in this regard. Whilst directionality can be an issue in smaller performing spaces, I remain doubtful that directional effects will be noticeable in large, resonant buildings.

Overall, it seems likely that a cornettist would choose a right- or left-curving instrument for a variety of reasons; whilst these might include left or right handedness, a preference on which hand to have uppermost, and mouthpiece placement (which in turn could be influenced by dental configuration), it seems most probable that it was ultimately a matter of personal preference and comfort.

Although cornetts were becoming less fashionable in the second half of the seventeenth century, they continued to be played. A mid-seventeenth still-life by Franck includes a partially-visible tenor cornett; its black, polygonal opening can just be seen in the centre right of the painting, with a music book draped over it. Pride of

place goes to a trombone, and the other instruments include at least two sizes of recorder, and the brass-shod foot of a curtal is seen at the right, with its upper end and crook just visible in the background.

Figure 36: Franz Friedrich Franck, Music Still Life – 1663

(Augsburg City Art Collections)

Fig.37 shows a still life from 1680. A violin rests next to a dark-backed theorbo, and a trombone points out toward the viewer, giving a strong three-dimensional feel. A four-stringed violone has a small lute placed in front of it, and a cornett lies between the lute and a guitar. Among the instruments are some discarded music sheets, and a

stack of richly-bound books appears in the background, a slip of paper bearing the artist's name protruding from one of them. The instruments are depicted realistically – the cornett is shown as a curved instrument with a circular cross-section.[109]

Figure 37: Bartolomeo Bettera, Still Life with Musical Instruments - c.1680

(Private collection, Italy)

A final organological source is found in the writings of James Talbot, a Professor of Hebrew at Trinity College, Cambridge between 1689 and 1704, who assembled a collection of notes on musical instruments. His intention in doing so is not clear, though Darryl Martin has speculated that he may ultimately have planned some sort

[109] This is an unusual but by no means unknown configuration - for example, see the cornett catalogued as number 13257 in the collection of the Accademia Filarmonica in Verona – Tarr, 228.

of publication.[110] Talbot's notes are now held as manuscript MS.1187 in the library of Christ Church, Oxford.

Talbot's methodology appears to have included obtaining instruments from leading London musicians, including James Paisible, Godfrey Finger, and John Shore; a letter included with the notes thanks Shore for the loan of a lute, cornet and fife.[111] A list of subheadings under the title 'cornet' includes: Treble ('streight' and 'crooked'); Tenor; and Bass. The latter two entries demonstrate clearly that both tenor and bass sizes of cornett were known in England, but sadly no further details were recorded. Likewise, the 'crooked treble cornet' has only the heading, but there do survive some notes on a 'Cornet – Mr. Shore, streight of box'.[112] These make clear that Talbot had measured a straight cornett with a separate mouthpiece, and shows that both straight and curved trebles were played in England. The information recorded comprises a series of measurements, with each description accompanied by up to three numbers, recording dimensions in feet, inches and eighths of an inch; I have converted these to mm by assuming a conversion of 1 foot = 304.6mm,[113] as shown in Fig. 38 below. Some confusion arises from the fact that the measurements along the instrument seem to be repeated, but with different values; I have tabulated these below as Series 1 and Series 2.

[110] Martin
[111] Baines (1948), 10
[112] Baines (1948), 11
[113] Martin (Martin quotes a measurement of an official yardstick dating from 1659, now housed in the London Science Museum, which has been measured to give a foot length of 304.563mm.).

Description	1st series				2nd series			
	Feet	Inches	1/8 Inches	mm	Feet	Inches	1/8 Inches	mm
Length of Instrt. Without Mouthpiece	1	10	4	571	1	11	4	596
From the top to the 1st hole underneath	0	7	6	197		8	7	225
From the top to the 1st hole above	0	8	7	225		9	7	251
From 1st hole above to 2d		1	3	35		1	2	32
To 3d		1	1.5	30		1	3	35
To 4th		1	4	38		1	3	35
To 5th & 6xth		1	3	35		1	2	32
Thickness		1	0.67	28		1	0.5	27
Bore of mouthpiece, above			5	16				
Within			2	6				
From above to within			4	13				
Bore, above			3	10				
At bottom		1	1	29				
Bore of 1st hole underneath & of 1st & 2d above			2	6				
Of 3rd to 6xth			2.5	8				

Figure 38: Cornett measurements from the Talbot manuscript, with conversions to mm

It is not clear what the two series of measurements are representing; the second set is written above the first, and the differences are significant. It seems unlikely that Talbot could take two sets of measurements on the same instrument with such different results; perhaps he was measuring a second instrument, but without any other details, we cannot be sure. The measurements also do not correlate well with Mersenne or Praetorius – see the table below.

Description	Talbot Series 1	Talbot Series 2	Mersenne Dessus	Praetorius Gerader	Praetorius Recht chor
Length of Instrument Without Mouthpiece	571	596	569	577	608
From the top to the 1st hole underneath	197	225	241	192	261
From the top to the 1st hole above	225	251	271	261	298
From 1st hole above to 2nd	35	32	30	43	37
To 3rd	30	35	30	43	43
To 4th	38	35	37	50	50
To 5th	35	32	30	31	40
To 6th	35	32	30	43	47

Figure 39: Comparison of measurements from Talbot, Mersenne and Praetorius

In summary, the cornett family had expanded by the seventeenth century to encompass not only the treble size, but altos, tenors and high cornettini, with the smaller sizes existing in curved, straight and mute forms. Whilst all these are represented among surviving instruments in museums, bass cornetts, described in a number of sources, are not. Nonetheless, most of the forms appear to have remained in use throughout the seventeenth century. Whilst most of the sources display a good deal of consistency between themselves and with surviving instruments, Mersenne's descriptions of cornetts show some inconsistencies, and perhaps need to be treated with a degree of caution.

CHAPTER 3:

EIGHTEENTH CENTURY AND LATER: A FALL FROM GRACE

Cornetts suffered a gradual decline in popularity during the latter years of the seventeenth century. In England in December 1662, the diarist John Evelyn bemoaned the replacement of the long-established wind ensemble at the Chapel Royal with the newly fashionable violin band:

> Instead of the ancient, grave, and solemn wind music accompanying the organ, was introduced a concert of twenty-four violins between every pause, after the French fantastical light way, better suiting a tavern, or playhouse, than a church. This was the first time of change, and now we no more heard the cornet which gave life to the organ; that instrument quite left off in which the English were so skilful.[114]

By the eighteenth century, the cornett had died out of regular use in most parts of Europe. Some of the iconography from this period includes some rather questionable cornett illustrations, such as two paintings by Munari. The cornett in the 'Panoplia' is polygonal, but it has six sides rather than the ubiquitous eight. More significantly, though, the inside of the instrument is also polygonal, and it appears to have been

[114] Bray, 379

constructed from six flat pieces joined at their edges; no surviving instrument has this construction.[115]

Figure 40: Cristoforo Munari, Panoplia with cornett - c1700

(Accademia, Florence)

The cornett in Munari's still life is again rather eccentric, but for different reasons. This is a curved, polygonal instrument, but it is shown with an extreme curvature extending the whole length of the instrument. Surviving cornetts, whilst giving the impression of continuous curvature, usually have a straight section at the top of the instrument.

[115] Interestingly, the depiction of cornetts with polygonal inner profiles is occasionally seen elsewhere, including two earlier English sources – see Appendix 2.

Figure 41: Cristoforo Munari, Still life with musical instruments –c1700

(Private Collection, Italy)

These rather inaccurate depictions of cornetts raise the interesting question as to why the artist got them so wrong. Munari was active at a time when cornetts were falling out of use. Perhaps in these paintings, he was deliberately depicting 'antique' instruments (although the recorder in the 'Panoplia' has a recognisably baroque profile) and relied on memory for his depictions of what would probably have been regarded as an old-fashioned instrument.

An early 18th century illustration showing Veronese church musicians is reminiscent of the earlier illustrations of players in galleries; it includes a cornett and trumpet playing with strings.[116]

Figure 42: Anon., Feast of the Coronation of the Virgin, in the church of San Nicolo, Verona, 1709

(Schola Cantorum Basiliensis)

The use of cornetts in this kind of ensemble became increasingly uncommon, however. They persisted longest in northern Europe; a few of J.S. Bach's cantatas include cornett parts and, as already observed above, one of the last works to specify the instrument is an eighteenth-century Sinfonia by the Norwegian composer Johann Berlin. An entry in a sketchbook kept by Daniel Pfisterer, a Protestant minister in Königen near Stuttgart in the early 1700s, shows a collection of instruments on and around a table:

[116] See Collver and Dickey, 22, for a discussion of later Italian repertoire where cornetto and trumpet are often scored together.

Figure 43: Daniel Pfisterer, Sketchbook (extract) - 1716-1727

(Württemberg State Museum)

Besides the cornett, there is a virginal or similar small keyboard, two bowed strings, perhaps violin and viola, shawms, a recorder, a dulcian, trumpet, and trombone. Grouped around are a violone, lute, harp and timpani. It is not clear what the occasion is, but the illustration shows that the cornett was still known about in early eighteenth-century Germany.[117] Stuttgart is also the location for the last known description of

[117] The annotations are translated as follows: 'As the sun and rain contribute the most to the harvest, So too the musician moves the wine-intoxicated soul. Korah can do nothing without his Assaph; he needs only to give the sign with his glass and the music starts; as soon as Juduthun begins to play the Githith it is as if all creation must spring from the piping and strumming.
Music is one of the Seven Liberal Arts, it brings young people into everyone's good graces, especially students! Because whoever cannot make music is but half a student, indeed half a man.'

cornett playing before the modern revival. The French musicologist and composer Georges Kastner was there in 1840, and described how each day an ensemble of cornett and three trombones played a chorale from a tower.[118]

There was thus a period of a century or so when cornetts were not played at all, and it fell to the pioneers of the early music revival in the mid twentieth century to rediscover and reinvent a performance practice which has developed into the early twenty-first.

[118] Kastner, 213-4

CHAPTER 4

CORNETTS AND PITCH

For much of the period of the modern revival of the cornett, performers have used instruments scaled to play at the modern standard pitch of A=440Hz. However, most of the surviving cornetts whose pitches have been measured play at a somewhat higher pitch. Tarr's 1981 catalogue includes assessments of playing pitch for many of the instruments. I have presented that data graphically below, grouping the cornetts into arbitrary 10Hz brackets, and recording the number of instruments in each band.

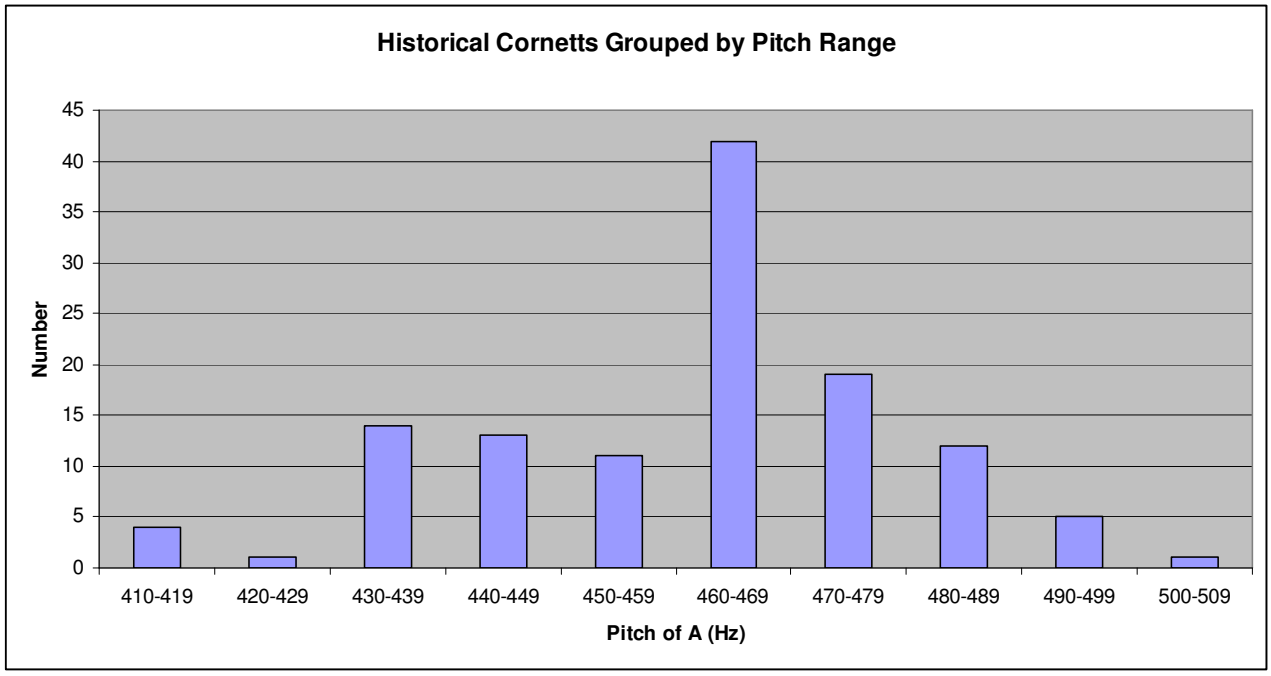


Figure 44: Historical cornetts grouped by pitch range – data from Tarr (author's graph)

This shows a very clear peak in the range A=460-469 Hz. Although it is still most common for modern performances involving cornetts to use copies scaled to

A=440Hz, there is a growing trend to working at the higher pitch of A=466 Hz (an equal-tempered semitone above modern standard pitch, and a whole-tone above modern conventional 'baroque pitch' of A=415Hz), an approach clearly justified by the surviving instruments. Cornetts made at this higher pitch are physically slightly smaller than A=440Hz instruments, which gives less of a stretch for the fingers, and also tends to make them lighter, brighter and more responsive.

Tarr's catalogue also records some physical measurements for most of the instruments. A study of the pitch data collected by Tarr was carried out by Bruce Haynes, who suggested that:

'in theory, the accuracy of the pitch information …could be checked by comparing sounding length to pitch. By drawing a "regression" line through x and y coordinates, their correlation could be tested'.[119]

Haynes then raised a number of potential objections to this approach, and did not actually carry out the comparison. This seems unfortunate, but there are some practical difficulties.[120]

[119] Haynes, 88. 'Regression' in this context is a mathematical technique for modelling relationships in numerical data. It is particularly useful for calculating lines showing the 'best fit' between sets of data points on a graph. See, for example, http://en.wikipedia.org/wiki/Linear_regression.

[120] The main issue is that the pitch information in Tarr is not presented in a form that lends itself to direct numerical analysis. Obviously, we would expect that the higher the pitch, the shorter the instrument. However, Tarr presents the pitch data not as the frequency of the lowest note of each instrument (which we *would* expect to be related to length), but rather as the pitch of the 'calibration' A (440Hz, 466 Hz, etc.) and the *name* of the lowest note on the instrument (A, D, C etc.), and this can cause confusion in the data depending on how the name of the lowest note is defined. So for example, a treble cornett (typical length 615mm) could be described as being at A=440Hz, with a lowest note A, at A=466 Hz with a lowest note A flat, or at A=493Hz with lowest note G, and so on. This could mean plotting the same length of instrument at three different 'pitches'! Hence the need for some mathematical manipulation to take account of both the 'calibration' frequency and the lowest note on each instrument.

However, the data can be converted to a form suitable for plotting, if the information is used to calculate a frequency value for each instrument's lowest note. For the instruments in A, this is trivial, since the 'lowest note' A (A_3) is an octave below the 'calibration A' (A_4), and hence has half its frequency (e.g. for a cornett with lowest note A at A=440 Hz, the lowest note A would be 220 Hz, i.e. 440÷2).

For instruments in other keys, this is slightly more complicated; however, there is a relationship between the frequencies of any two notes and the interval that separates them, which is given by the following formula:[121]

$$f_n = f_0 * (a)^n$$

Where:

f_0 is the frequency of the 'calibration' note

f_n is the frequency of the note n semitones away from the calibration note

(if this note is lower than the 'calibration' note, n is negative. So, for A_4, an octave below A_3, $n = -12$)

$a = (2)^{1/12}$ or the twelfth root of two, approximately equal to 1.05946.

(i.e. a is the change in frequency associated with a semitone).

[121] Michigan Technological University (this formula assumes equal-tempered semitones. It is acknowledged that the historical cornetts under consideration were probably tuned in an unequal temperament. This is of course another source of uncertainty, but it is considered that the error introduced will be small. Ideally, further measurements would be made on the instruments themselves, but such work is outside the scope of the current project).

So, for example, a cornettino in D at A=462 Hz:

f_0 = 462 Hz

n = -7 (i.e., the lowest note D4 is 7 semitones below the 'calibration' note of A4)

and hence $f_n = 462 * (1.05946)^{-7} = 308$ Hz

Applying this approach to Haynes' data gives a series of pairs of numbers, relating length to frequency of the lowest note. If these values are plotted, notwithstanding some scatter in the data, there is a clear correlation:

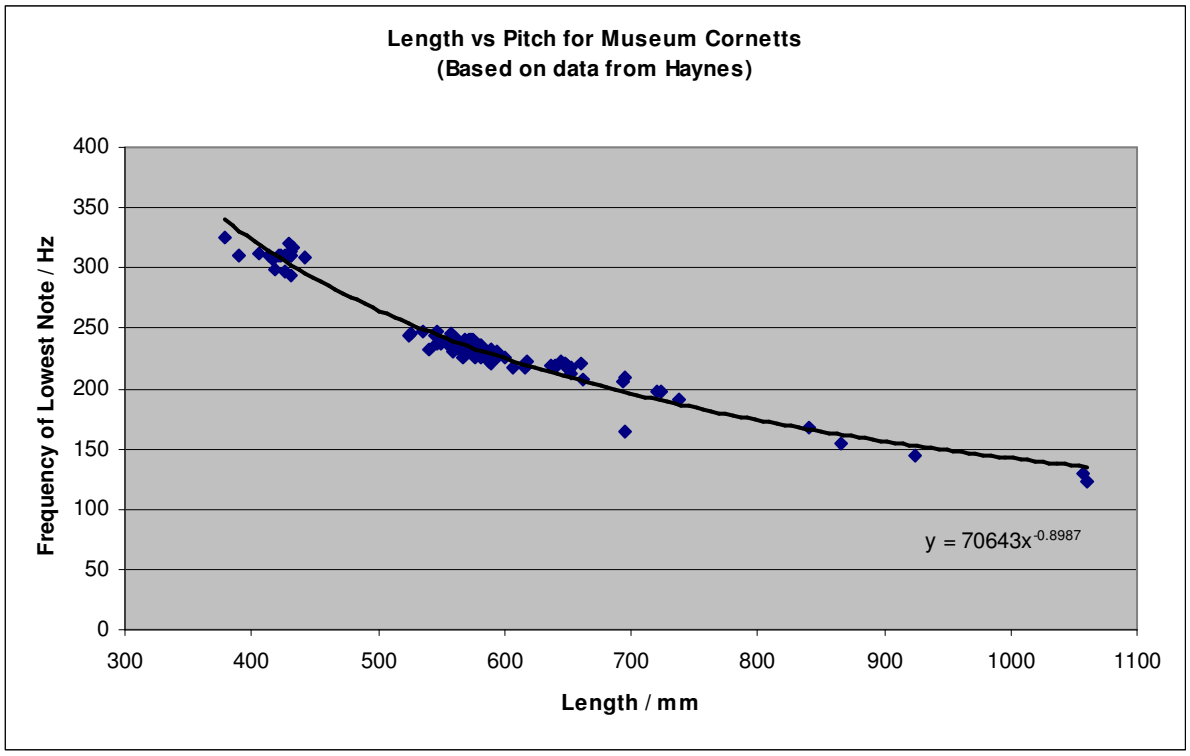


Figure 45: Graph of relationship between length and frequency for cornetts in museums

(Author's graph, based on data in Tarr and Haynes)

The equation shown in the figure is for the trendline fitted to the data. There is only one data point that appears seriously anomalous, an instrument of length 695mm and frequency 165Hz, which appears below the trendline; on inspection of Tarr, this

instrument, number 89.4.2142 from the New York Metropolitan Museum, turns out to be somewhat unusual in that it is built in a serpentine form with 5 curves, as opposed to all the other instruments, which are either straight, single-curved, or double-curved (the few tenor cornetts). It is possible that the unusual form may affect its acoustic properties, but further investigation would be required here.[122]

This treatment, then, confirms Haynes' expectation that there ought to be a meaningful relationship between length of instruments and their sounding pitch. Further, the trendline equation gives us a means of calculating the expected frequency from an instrument's length. So, for example, if we consider the well-known pair of cornetts in the library of Christ Church, Oxford, Julian Drake gives their length as 614mm without their silver mounts, and says that the mounts add 7 to 8mm (i.e. total length with the mounts of, say, 622mm). The trendline equation above predicts lowest note frequencies for these two lengths of 220Hz, and 218 Hz respectively, which accords well with Drake's reported observation that these instruments play in A, close to A=440Hz.[123]

The approach also provides another way of estimating the pitches of Praetorius' cornetts. Myers estimates that Praetorius' straight treble cornett, at 579mm, would play in A at about a semitone above modern pitch, and his curved treble, at 595mm, about a quarter-tone lower than the straight cornett.[124] If these lengths are substituted into the trendline calculation as described above, the straight treble has a predicted

[122] The question of whether curving has an influence on the pitch/length relationship has not been explored here, but may be a fruitful topic for future research.
[123] Drake, 44
[124] Myers, 40-41

pitch of A=464Hz, and the curved treble, 454Hz – in good agreement with Myers' estimations.[125]

We can take this further, and apply these calculations to the instruments Mersenne and Talbot describe. So, Mersenne gives the length of his *Dessus* as 1¾ *pieds*, or approximately 569mm. This gives a lowest note (A_3) with a frequency of 236Hz, i.e. A=472Hz, or slightly more than a semitone above modern pitch.

We might also apply the same approach to the *Basse* – Mersenne says this is 4 *pieds* in length, about 1300mm, for which the formula predicts a lowest note frequency of 112Hz, which would be a bass G (G_2) at A=503Hz. This looks a little too high to be consistent with the *Dessus*; since Mersenne has provided a piece for all the sizes to play together, they must all have been at the same prevailing pitch standard. However, it must be remembered that none of the museum instruments approach this length; applying the mathematical formula here is therefore extrapolating outside the range for which we can be confident it will apply. [126]

Talbot's measured length of his cornett of 571mm (series one) would suggest a pitch of A=470Hz, or again, about a semitone above modern pitch, a very typical pitch for treble cornetts. His second series length measurement, 596mm, would give a somewhat lower pitch of 452Hz, around a quarter-tone above modern. As before,

[125] it is acknowledged that this is, perhaps, not too surprising, since Myers does also use Tarr's data in estimating the pitches these length would produce. Myers, however, selects particular instruments close to the lengths he requires, rather than extrapolating from the data as a whole.

[126] The difference is not actually very large, in fact. If we take the pitch standard predicted by the *Dessus* – A=472Hz – and calculate the frequency of a bass G at this pitch standard, we get 105Hz, which is only a few Hz different from our prediction, from its length, of 112Hz.

though, in the absence of any real clarity about what these two series represent, it would be dangerous to speculate too far on their implications.

As a final test, I have measured some of my own instruments, and applied the formula to predict the pitches of their A: the results of this exercise are given below, and again, show good correlation:

Instrument	Length/mm	Calculated A pitch / Hz
Curved cornett in A @ A=440Hz by Matthew Jennejohn	615	440
Curved cornett in A @ A=466Hz by Serge Delmas	577	466
Curved cornettino in D @ A=440Hz by Serge Delmas	440	445
Mute cornett in A @ A=440Hz by Serge Delmas	618	438
Mute cornett in G @ A=440Hz by Christopher Monk	708	436

Figure 46: Calculated vs. actual working pitches for some of the author's instruments

Overall, it is suggested that this methodology provides an alternative and generally more reliable approach to estimating pitches of cornetts, particularly those in museums, which could potentially be of benefit in circumstances where these instruments cannot be played for conservation reasons.

Transposition

Transposition was a skill routinely expected of cornettists. Evidence for this includes Mersenne's comment that cornetts could play a scale beginning on any note as *ut*. Also, Virgiliano's fingering chart implies that players effectively thought of different sets of fingerings for different transpositions.

For example, the following detail from that chart shows the same fingering for an untransposed middle G (*a suo luogo* – shown by the G clef at the far right) and for a low C (shown by the C clef) transposed up a fifth (*alla Quinta alta*)[127]:

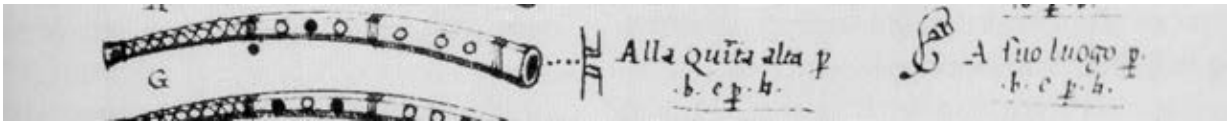


Figure 47: Virgiliano – fingering chart (detail)

Further evidence for the practice of transposition is provided by Bartolomeo Bismantova, a cornett player who played at the Basilica di San Giorgio in Ferrara, and also for that city's *Accademia di Santo Spirito*. His *Compendio Musicale*, dating from 1677, survives only in manuscript, and includes practical instructions for playing the cornett. According to Dickey et. al., Bismantova apparently used these instructions in his teaching duties at the Academy in Ferrara;[128] given that 'practically no other wind instrument tutor is known from Italy or France for the period between 1638 (Fantini's instruction book for the trumpet) and 1700 (Freillon Poncein's for oboe)', the *Compendio* gives us a unique insight into Italian cornett playing in the second half of the seventeenth century.

Bismantova echoes Virdung in his view that: 'If you wish to play the cornett, it is necessary first to play the recorder in order to learn the application of the tonguings and also [the use] of the fingers'.[129]

[127] G is a fifth above C, so if one is reading from a part where a C is notated, but wishes to transpose up a fifth (*alla quinta alta*), one will need to play a G.
[128] Dickey, Leonards and Tarr, 144
[129] Dickey, Leonards and Tarr, 163

His diagram of the cornett makes clear that the instrument has six fingerholes and a thumbhole:

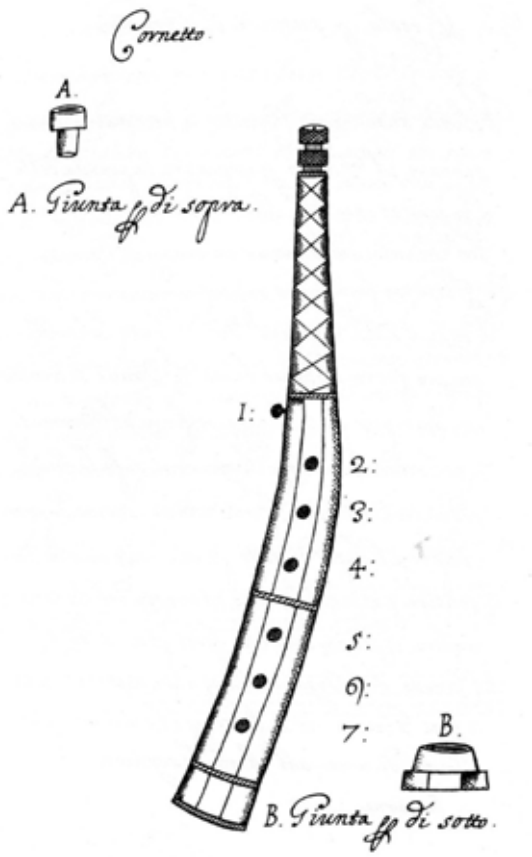


Figure 48: Bismantova's cornett diagram – from *Compendio Musicale* (1677)

Further, although he does not provide a fingering chart as such, his mention of fingerings for specific notes on the cornett make clear that he is dealing with the usual treble cornett with lowest note A_3, like Mersenne's *Dessus*, Praetorius' *Recht Chor Zinck*, and the majority of surviving instruments.[130] Bismantova also provides some further insight on the question of mouthpiece placement, saying that 'The cornett is

[130] Ibid., 166

set in the corner of the mouth on the right-hand side, with the tongue placed into the mouthpiece'[131]

Of particular interest to the transposition question is his depiction and discussion of tuning joints, inserted into one or both ends of the instrument to adjust the pitch:

> In the event that the cornett should be higher than the organ, it will be necessary to attach one or more [tuning] joints, and if, on the contrary, it should be lower in pitch, it will be necessary to remove them. If it should be necessary to attach more tuning joints than usual to the top of the cornett because the organ is quite low, it will first be necessary to place into the bottom of the cornett a joint of approximately one finger's width or possibly more. This joint must be made of wood, it must be bored with a hole as large as the opening of the cornett, and it must be made and turned on a lathe. This lengthening of the cornett above and below is done so that all the notes, especially the high ones, will be in tune, just like that [lengthening] which you do on the recorder, but use good judgement in applying this advice. If, on the other hand, there should be a long and moveable silver ligature as an ornament at the bottom end of the cornett, you can lengthen this, which [lengthening] will have the same effect as that of a tuning joint.[132]

Perhaps inevitably for such ephemeral items, no tuning joints quite like those described by Bismantova have survived. However, the previously-mentioned cornetts

[131] Ibid., 165 – the editors suggest that what is being described here is an aid to mouthpiece placement, rather than a means of tonguing.
[132] Dickey, Leonards and Tarr, 164-165

in the library of Christ Church, Oxford,[133] are equipped with silver mounts fitting over the upper ends of the instruments, and containing tubes to receive the mouthpieces. According to Julian Drake's measurements, these mounts add '7 to 8mm' to the length, and he reports that the instruments play slightly above or below modern pitch, according to whether the mounts are fitted or not.

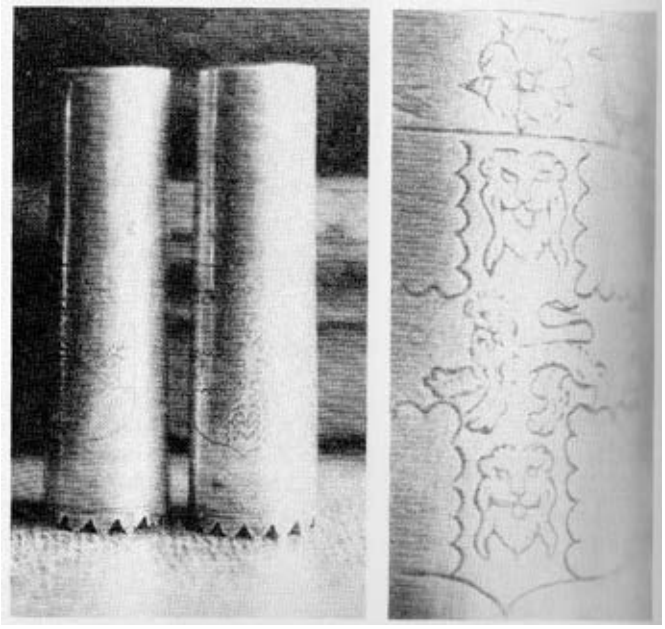


Figure 49: Silver mounts from the Christ Church cornetts, and detail of one of them (from Drake)

Also of interest is the unusual mouthpiece preserved with a cornett in the instrument collection of the St. Petersburg State Theatre Arts Academy (formerly the Leningrad Institute for Theatre, Music and Cinematography), which lowers the pitch by about a semitone.[134]

[133] Drake, 44
[134] Tarr, 139

Figure 50: Semitone transposing mouthpiece from the St. Petersburg collection

(modern copy by Sam Goble - http://www.samgoble.com/Cornetto_mouthpieces.html)

A final comment from Bismantova confirms what Mersenne wrote concerning the need for cornett players to acquire facility in transposition:

> If by chance organs or harpsichords are found which are lower than the choir pitch, and if the cornett can neither be tuned nor accommodated in pitch to the mode in which the *Sinfonie* or other [pieces] are being played, it will be necessary to tune the cornett one step higher and then to play one step lower. It is therefore necessary to know how to play in all the clefs in order to be able to transpose, if necessary.[135]

At first sight this advice might seem illogical, since tuning the cornett higher by some interval, and then transposing down by the same interval, will arrive back at the same pitch. However, what Bismantova clearly means is that the cornett is to be tuned one step above the organ, and then the player transposes down to be one step below the organ. Assuming that one step is a semitone, this would give a convenient whole-tone

[135] Dickey, Leonards and Tarr, 169

transposition (semitone transposition introduces awkward cross-fingerings on the cornett).

Taken together, these descriptions of tuning accessories and transpositions give an insight into the practicalities of playing the cornett in situations where the prevailing pitch standard could be variable. Bismantova's advice to 'use good judgement' in the use of tuning joints most probably arises from the fact that adding too many extensions is bound to throw the instrument out of tune with itself. One might therefore reasonably expect that players would need to have a number of instruments, pitched slightly differently, to accommodate various performing pitches. The range of lengths found in museum instruments tends to support this. Supportive, also, is the wording of a Venetian contract dating from 1559, describing a partnership between the makers Jacomo Bassano and Santo Griti, and three of the Doge's musicians, for the supply of wind instruments, which includes in its listing of available instruments: 'loud [i.e. curved] *cornetti*, both the half point and whole point kind, four *lire di piccoli* each, *cornetti muti* at all pitches, 2 *lire* and 8 *soldi* each, bass *cornetti*, both with and without key, 10 *lire* each'.[136]

Giulio Ongaro expresses some uncertainty over the 'half point' and 'whole point' terminology, but Haynes suggests that these terms *mezo ponto* and *tuto ponto* are probably the names given to pitch standards, citing as supporting evidence late 16th century documents by the organist and organ builder G.B. Morsellino, relating to an organ at Cremona.[137]

[136] Ongaro, 397

[137] 'All the organs I have seen in my lifetime, either in Italy or elsewhere, that are normally used to perform with the greatest performers, are in the cornett pitch of *mezo punto*, a [semi] tone higher than

The need to transpose persisted throughout the lifetime of the cornett; an 18th-century manuscript of a *Sinfonia* for solo cornett and strings, by the Norwegian composer Johann Daniel Berlin, treats the cornett as a transposing instrument.[138]

Surviving cornetts, then, tend to play somewhat above modern concert pitch, with a preponderance around A=460-470 Hz, and analysis of the pitch data also shows a clear relationship between pitch and dimensions; graphical treatment of both these aspects provides great clarity in visualising the data. Historical evidence also demonstrates clearly that, whatever the prevailing pitch standard, cornettists had to be adept at transposition, and would probably have employed a range of strategies including alternate fingerings, differently-pitched instruments, and physical tuning adjusters to perform effectively.

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ours that we are presently discussing at the cornett pitch called *tutto punto*, which is a [semi] tone lower than the other that is called *mezo punto*' - see Haynes, 91

[138] The piece itself is undated, but Berlin lived from 1714-1787, and was organist at Trondheim Cathedral from 1740 until his death. The cornett's music is notated in C major, a whole tone lower than the string parts in D major, clearly implying the use of a cornett at high church pitch (or cornett pitch) playing with the strings at a chamber pitch a whole tone lower. See facsimile in Reidemeister, 405-420.

CHAPTER 5

DIVERSITY OF USAGE: PLAYERS AND REPERTOIRES

Bruce Dickey writes that 'At every stage of its development the cornett was an instrument of professional musicians';[139] certainly the employment of cornettists in royal and noble households, and in major churches, is well-documented, as is their participation in polychoral music. What is less easy to assess is the extent to which the instrument was played by what we would call amateur musicians, and in different types of repertoire.

Professional cornett players found positions as church musicians, in noble households, and as members of civic ensembles. Cornetts were used in church music throughout Europe; as already discussed, the Venetian-influenced polychoral style is the repertoire most commonly associated with cornetts. Evidence for this practice abounds in payment and employment records,[140] and in those pieces where instrumentation is specified.[141] Up until the 15th century, instruments had tended to be grouped into *haut* and *bas* (loud and soft)[142], and part of the cornett's appeal seems to have been that it, like the trombone, could function in both categories. Added to this was its famed ability to imitate the human voice; the Venetian cornettist Girolamo Dalla Casa wrote that 'the cornetto is the most excellent of the wind instruments since

[139] Dickey (1997), 62
[140] Cornett players were employed at the English court, and provincial cathedrals, throughout much of the sixteenth and seventeenth centuries – see Ashbee, and Herbert, 610.
[141] For example, some of Giovanni Gabrieli's music has instrumental desginations including cornetts – see Bartlett and Holman.
[142] Polk (1989), 83

it imitates the human voice better than the other instruments. This instrument is played loud and soft, and in every key [*tuono*] just like the voice'.[143]

This imitation of the voice was a primary aim of all early modern musicians. As early as 1535 Ganassi had written in his *Fontegara*:

> …just as the worthy and perfect painter imitates everything created by nature by varying his colours, you can imitate the utterances of the human voice with a wind or stringed instrument … I have … heard of other players who have made the words understood with their playing, so that one could have easily said that nothing was lacking from that instrument other than the form of the human body…[144]

The cornettist Luigi Zenobi wrote that all the aspects of performance demanded in a soprano were also 'sought in an instrumentalist, whether he plays the cornett, the viola da gamba, the violin, the recorder, the flute or other similar melody instruments'.[145]

Also prized were the abilities of the cornett's finest exponents in the art of improvised ornamentation, as evoked by Henry Hawkins in his *Parthenia Sacra*: 'Let others with the tongue, hand, or breath charme the delicate eares; let them wind the Cornet, with a thousand diminutions'. [146]

[143] Rosenberg, J., 112
[144] Smith, 104
[145] Blackburn and Lowinsky, 102
[146] Hawkins, 144

Several illustrations show cornett players in their professional occupations. An engraving by Galle shows both treble and tenor cornets being played in a church ensemble – the players are reading from a book placed high on a stand, just visible at the top-left of the Figure:

Figure 51: Phillippe Galle (after Johannes Stradanus), engraving (detail), 1595

(Salmen)

An engraving by Friedrich Brentel, depicting the funeral of Charles 3rd, Duke of Lorraine, shows a large group of musicians playing cornetts, trombones and dulcians, dispersed among singers, in a gallery in the church of St Francois in Nancy:

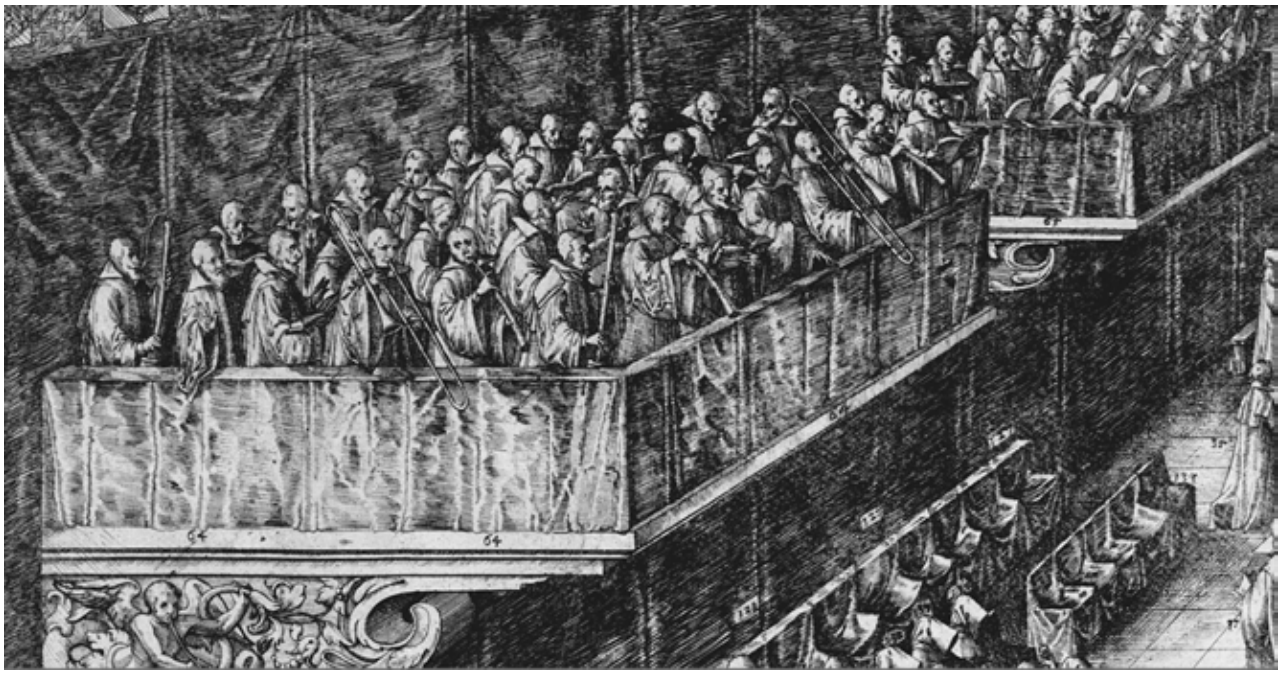

Figure 52: Friedrich Brentel: Funeral of Charles 3rd (detail), 1608

(Metropolitan Museum of Art, New York)

The players here appear to reading from the part-books held by the singers;[147] a second group of stringed instruments can be seen in another gallery.

In many countries, particularly Italy, cornetts wholly or partly replaced shawms in the city ensembles,[148] and the combination of cornetts and trombones became a particularly important one. In 1615 the Archduchess Isabella attended the 'Ommegang' in Brussels, an annual procession of the city's guilds. The court painter Denys van Alsloot was commissioned to record the event in a series of six paintings; one of these shows the civic band (or 'waits' as they were known in England).

[147] Or at least, the singers appear to be holding part-books, and there are no other signs of notated music apparent.
[148] Dickey (1997), 56-57.

Most of the musicians wear dark clothing; one of them is in red, perhaps denoting a senior rank. Plain black clothing seems to be a common style of dress for professional musicians in illustrations, as in the Mielich painting of Lassus' ensemble above, and in further examples below.

Figure 53: Denis van Alsloot, 'Procession in honour of Our Lady of Sablon in Brussels, 31st May' (detail) - 1615-16

(Prado, Madrid)

Besides the cornett, this group uses three shawms, a curtal, and a trombone; the cornettist is using a right-curving instrument, with a side embouchure. Most of the musicians are, presumably, playing from memory, although the trombonist appears to be holding some music in his right hand. Processing musicians such as those shown by Alsloot, in contrast to those in Burgkmair's carriages, or Goltzius' pavilion, must have had to memorise the greater part of their repertoire. Indeed, Anne Smith has

argued that musicians in the Medieval and early Modern periods, even those who were able to read printed music, would have possessed highly developed memory skills,[149] and so it seems likely that the absence of written or printed music in many illustrations of this period is a reflection of actual practice.

A few portraits exist, dating from the early sixteenth to the late seventeenth centuries, showing the sitter either holding a cornett, or with the instrument prominently displayed. In most cases the identities of the subjects are not known. The commissioning of a portrait would, however, require a reasonable financial outlay, and it is likely that the musicians represented were employed by, or associated with, wealthy patrons, who perhaps wished to preserve a likeness of a favourite performer. Amy Brosius has argued that seventeenth-century portraits of Roman *virtuose* aimed to capture some of the physical experience of hearing the performers: '…the sound and act of singing were reproducible through the portrait', [150] and it seems likely that something similar is operating in these portraits of cornettists.

[149] Smith, 15-18.
[150] Brosius, 21

Figure 54: Bernardino Licinio, Portrait of a cornett player

(Private Collection, Bergamo)

The date of Licinio's portrait of a cornettist is unknown, but the artist lived from around 1490 to 1565, and was active in Venice and Lombardy, so it could perhaps represent one of the renowned Venetian cornett virtuosi; the picture is held in a private collection in Bergamo, where Licinio was born. The musician is dressed in black, with a long coat or doublet and a plain hat. The cornett is held loosely, but with

the hands appropriately positioned for playing; the instrument curves to the right and has no mouthpiece inserted. Behind the player, a lute and a violin rest on a table, with a book of music; these suggest that he is able to play these instruments too, and to read music. The music has a text underlay but has not been identified, nor has the fragmentary Latin text on the wall behind the player.

Two musicians in a double portrait by Passarotti are dressed very similarly to Licinio's cornett player, again suggesting that they are professional musicians. The younger man holds a right-curving cornett with silver mounts and, unusually, the upper opening of the mouthpiece can be seen, showing the typical small diameter and narrow rim. The right-hand grip, in particular, shows a familiarity with the instrument, and suggests that the subject is a player. The identities of the two men are not known, but there is an apparent family resemblance in the shapes of nose, ears and eyes, and it could be supposed they are father and son. Passarotti was active mainly in his native Bologna, and I suggest it is possible that the subjects are Ascanio Cavallari and his father. The members of the Cavallari family were renowned in Bologna for their skills in playing wind instruments, and hence were more often known by the adopted surname Trombetti.

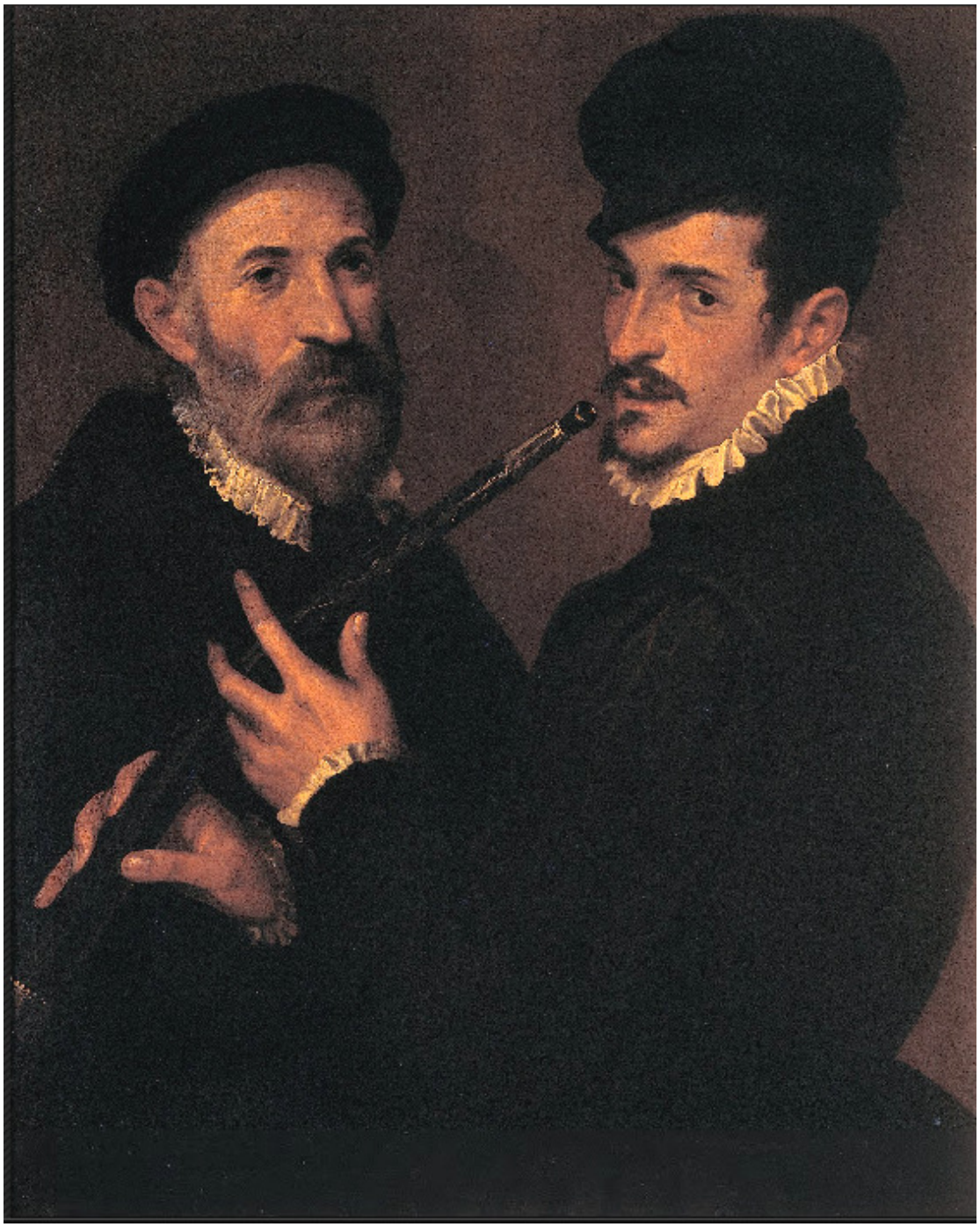

Figure 55: Bartolomeo Passarotti: Double Portrait of Musicians - 1577-9

(Capitoline Museum, Rome)

Ascanio Trombetti was perhaps the most distinguished member; he played cornett in the 'Concerto Palatino', Bologna's civic wind ensemble, and also in the *capella musicale* of the Basilica of San Petronio, and published madrigals and motets in up to

twelve parts.[151] Ascanio was also known as 'detto del Cornetto';[152] and it would be natural for a portrait of him to feature the instrument with which he was most strongly associated. He was born in 1544, which would put him in his early thirties at the time of Passarotti's painting – the younger man in the portrait could well be this age. Ascanio's father was Astorre Cavallari, whose dates are not known; the older man in the painting could be in his sixties. Ascanio came to a violent end, being murdered by a book-dealer, with whose wife he had had an affair.

Figure 56: Lodovijk van der Helst, Portrait of Michiel Servaesz Nouts – 1670

(Amsterdam Museum)

[151] Schnoebaum
[152] Carter, 101

Michiel Nouts was a musician and painter in Amsterdam. Besides the cornett, he played the carillon in the city hall, which is visible in the background of his portrait. Again, he is dressed formally in black, and his instrument has silver mounts, and a rather large mouthpiece.

Before considering the evidence for non-professional and domestic usage of cornetts, it is worth considering why this instrument seems to have been most usually associated with professionals. One factor is surely the difficulty of playing it well. It seems that cornetts were always, even in their heyday, considered hard to play. The Italian theorist Giovanni Maria Artusi wrote that:

> Truly it is a difficult instrument, requiring much effort and long study. However, a single part on it can give much delight if the player has a certain excellence, as did the "Cavaliero del Cornetto" in his prime, and Maestro Girolamo from Udine, in the city of Venice, together with so many others who have flourished in this, our Italy.[153]

The English writer Jasper Mayne cited it as an example of a challenging activity:

> Many things, therefore, to you and me, and such as we are, seem impossible, which to others are easie. For to winde a Cornet well to those who cannot play,

[153] Dickey (2009)

> and to read or write to those who are ignorant of Grammar, showes more impossible than to make women of Birds, or Birds of women.[154]

It is also possible that wind instruments, which to varying degrees require their players to contort their facial features to play them, were considered unseemly for well-bred amateurs. The 'Galateo' of Giovanni della Casa, Florentine poet and Archbishop of Benevento, was one of the most celebrated etiquette books of the sixteenth century. In the voice of an uncle addressing a younger nephew, the book gives advice on how to appear charming, sophisticated and polite. The book was widely translated, and an English version by Robert Peterson contains the following passage, advising against the habit of facial grimaces:

> Pallas her selfe, the Goddesse, (as I have hearde some wise men say) tooke once a greate pleasure to sound the flute & the cornet[155]; & therein she was verie cunning. It chaunst her, on day, sounding her Cornet for her plesure over a fontain, she spide her selfe in the water: and when she beheld those strange gestures she must nedes make with her mouth as she plaid: she was so much ashamed of it that she brake the cornet in peces & cast it away. And truly she did but well, for it is no instrument for a woman to use. And it becomes men as ill, if they be not of that base condition and calling, that they must make it a gaine, & an art to live uppon it.[156]

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[154] Mayne, 22-23

[155] Although Peterson's translation refers to the cornett, it is worth observing that della Casa's original Italian text names the instrument played by Pallas as *cornamusa*, which at the time would most probably indicate a bagpipe. The slightly derogatory comments on the cornett should thus be taken as those of an Englishman in 1576, rather than an Italian in the early 1550s.

[156] Peterson, 119-20

Peterson considers cornetts as unsuitable not only for women to play, but also for men, unless they are obliged to earn their living upon them. However, notwithstanding that the instruments were thought difficult to play well, his association of them with facial distortions seems over-stated. Educated Early Modern musicians would have been well aware of the concept of *sprezzatura*, Castiglione's 'certain nonchalance which conceals all artistry and makes whatever one says or does seem uncontrived and effortless'[157] and it is notable that most if not all the pictorial representations of cornett-players display relaxed facial expressions.

Notwithstanding Peterson's apparent disapproval of non-professional musicians playing cornetts, several paintings do show the instrument being used in what are apparently courtly or domestic situations. These include examples of the seventeenth-century genre of 'concert' paintings, where small groups of musicians are shown, usually in an informal setting. Such groupings had been known from the fifteenth century, with those earlier works showing elegant characters in domestic or pastoral settings, and were often seen as symbolising the phases of human existence, and love. Paintings such as Caravaggio's 'Musicians', discussed above anticipate this genre; the later 'concert' paintings usually arranged their subjects in horizontally-configured spaces, and often included themes of wine, play, and sensual pleasure.[158] An example by Manfredi, a follower of Caravaggio, shows a group of musicians grouped around a rough-looking table, perhaps in a tavern.

[157] Bull (1967), 67
[158] Ausoni, 188.

Figure 57: Bartolomeo Manfredi, A Concert – 1618

(Uffizi, Florence)

A lutenist, violinist and cornettist play; there is at least one singer, but it is not clear whether the two figures at the right are participating in the music, or simply watching. The varied styles of dress are quite different from the sombre clothes of the professional musicians discussed above. Whilst the lute is depicted quite realistically, less care has been taken with the violin, which lacks any pegs, and the cornett-player's hands leave the lower finger-holes uncovered, although his pursed lips at least suggest a realistic embouchure.

Another ‘concert’, by Valentin de Boulogne, is in a similar vein to Manfredi’s, with players grouped around a table, with dramatic *chiaroscuro* lighting:

Figure 58: Valentin de Boulogne, A Concert - c.1628-1630

(Louvre, Paris)

Here, though, the table is covered with a rich-looking cloth or tapestry, suggesting a domestic rather than a tavern setting. On the far right, a cornett player shares a part-book with a boy singer; the hands are positioned realistically, and the instrument is played from the corner of the mouth. A seated woman plays a small keyboard, with a violinist behind her – perhaps also singing as he is playing – and another child sings.

A theorbo player, whose cuirass identifies him as a soldier,[159] sits with his back to us, and at the far left is a violone. There is another figure in the background, too dark to identify.

One of the few accounts we have of a non-professional cornett player is found in the autobiography of Benvenuto Cellini. Although famous as a sculptor and goldsmith, Benvenuto was sent by his father (as mentioned earlier, a town musician in Florence) to study music in Bologna, and although he claims to have disliked playing he was, by his own account, a talented player. Whilst in Rome, he was invited to play for the Pope. He recounts how a musician already in the Pope's service sent a message:

> …asking me if I would help them at the Pope's August festival in some very beautiful motets they had chosen, by playing the soprano part on my cornett…while Pope Clement was having dinner we played the motets we had rehearsed so well that he had to admit he had never heard music played more exquisitely or more harmoniously.[160]

Notwithstanding Cellini's natural tendency for self-aggrandisement, the circumstances suggest that he was a player of some accomplishment. Although he came from a musical family, and had the benefit of at least some professional training, music was not his main source of income, and yet he managed to maintain a high level of performance on a difficult instrument; Benvenuto's experience at least allows for the possibility of amateur musicians playing the cornett.

[159] Ausoni, 190
[160] Bull (1956), 45-46

A portrait by the Dutch artist Gerrit van Honthorst shows a middle-aged man singing from a book of plainsong, and holding a straight cornett:

Figure 59: Gerrit van Honthorst, The Old Singer – 1623

(Schwerin State Museum)

The form of the upper end of this instrument is unusual, and there are no surviving instruments quite like this at the top end. It cannot be anything other than a cornett though – there is no fipple so it cannot be a recorder (and in any case the bore is much too wide), and it is much too short for a shawm, and lacks the flared bell. In general dimensions it is appropriate for a straight or mute treble cornett – no separate mouthpiece is visible, so it is perhaps a mute cornett with an unusually wide rim on the integral mouthpiece, or alternatively the mouthpiece is hidden by the perspective.[161] It is not entirely clear why he holds the cornett – he clearly cannot play it at the same time as singing, but perhaps he has used it to find his starting pitch. The instrument and book both project over the window-ledge, giving a great sense of depth and immediacy. The identity of the sitter is not known; his clothes suggest that he is not a professional player, but perhaps, given his fur-trimmed robe, a person of some wealth. A vine grows around the window, and the singer's slightly red nose suggests he may have been imbibing its fruit (another work by Honthorst shows an apparently well-lubricated violinist with a glass of wine, leaning out of a similar stone-edged window).

A final group of paintings show female musicians associated with cornetts.

[161] The German instrument maker, Fritz Heller, considers this instrument to be a straight cornett, and makes an instrument based on the Honthorst painting: http://www.blasende-instrumente.net/pages/en/instruments/straight-cornetti.php.

Figure 60: van Ravesteyn, Dirck de Quade, Flute Player – c.1600

(Museum of Fine Arts, Vienna)

A well-dressed woman plays a transverse flute, whilst on the table in front of her lie a cornett (right-curving), a lute and a violin, along with two closed books. The woman is richly-dressed, and the procession of servants in the background suggest she is a noblewoman – one of the servants has turned towards her, distracted by the music. The player is reflected in a mirror, suggesting vanity (the mirror also suggests a possible allusion to the story of Pallas, as recounted by Peterson). Perhaps, then, Ravesteyn's painting is presenting music as a slightly daring activity for a well-bred

woman to be engaging in, especially if she chooses to play wind instruments instead of the more refined strings.

Figure 61: Anon., (Lombard School), Girl playing a cornett

(Private collection)

An anonymous North Italian painting shows a young woman turning towards the viewer and holding a cornett, apparently just breaking off from playing. She is richly dressed, the style suggesting the seventeenth century. Again, the quality and colours of her garments suggest she is a noblewoman, or perhaps, given the sense of

voluptuousness, even a courtesan; again, in her discussion of female singers, Amy Brosius comments that 'Seventeenth century *virtuose* found themselves in a mixture of situations: as servants in upper-class households hired for their vocal talents; as members of travelling acting troupes; as *cortigiani*; and as free-agent hostesses to *conversazioni*…'[162].

The term courtesan derives from the Italian *cortigiana*, the feminine form of *cortigiano*, or courtier, and in the early modern period implied something more complex than solely the granting of sexual favours for payment. As Margaret Rosenthal has demonstrated, *cortigiane* such as the Venetian Veronica Franco, sometime mistress to Henri III of France, cultivated a range of social and artistic skills to entertain their often aristocratic clientele: 'Playing music, singing, composing poetry, and presenting a sophisticated figure were the courtesan's necessary, marketable skills'.[163]

Although we have no specific evidence of cornett-playing courtesans, the instrument's expressive and sensuous qualities, and the possibilities for playing it quietly and delicately, mean we should not rule out the possibility. In a similar vein, Benvenuto Cellini describes playing the cornett to charm his beautiful young assistant Paulino, who:

> …was about fourteen … [and had] ... the prettiest face of any I have ever come across in all my life…I loved him so passionately that I was always playing music for him, in order to see his lovely face, which was normally rather sad and

[162] Brosius, 26
[163] Rosenthal, 6

serious, brighten up when he heard it. Whenever I took up the cornett such a frank, beautiful smile came over his face…[164]

A painting by Paolini shows a group of young women musicians, either about to perform or having just finished.

Figure 62: Pietro Paolini, Group of young musicians with vase of flowers - c.1625[165]

(Gallery unknown)

The theorbo player looks straight at the viewer, whilst the cornettist and trombonist are looking out to the sides of the picture, as if searching for something or someone. In the background is the fourth musician, a violinist, and there is a small child, perhaps engaged in pulling the curtain for the performance. The setting appears formal, and would appear to be the interior of a palazzo or other large house, or

[164] Bull (1956), 43
[165] Maccari, 158

perhaps a theatre; it does not appear to be a church or a tavern, and the women are dressed in varied secular clothing, rather than any form of professional uniform.

A final painting, by Gentileschi, shows a young woman holding a lute; several part-books are on the table, on which also lie a violin, recorder and cornett. Whilst it is, of course, possible that the instruments were simply assembled by the artist, the painting implies that the sitter might play them as well as her lute; or perhaps she is about to be joined by a group of other players.

Figure 63: Orazio Gentileschi: Lute Player - c.1626

(National Gallery of Art, Washington DC)

Recent scholarship confirms that, despite the apparent male monopoly in professional circles, many women achieved high levels of accomplishment, and recognition, as performers. Perhaps the most famous (at least in the generations pre-dating Vivaldi's musical schoolgirls at the Venetian *Ospedale della Pieta*) were the virtuoso singers of the *Concerto delle Donne* in Ferrara, established by Duke Alfonso II in 1580.[166] However, they were by no means the only celebrated female musicians at this time. Also in Ferrara, the nuns of the Convent of San Vito were widely celebrated for their skills not only as singers, but also as instrumentalists. A friend of the theorist Ercole Bottrigari expressed surprise that the nuns played cornetts and trombones, besides the more usual 'women's instruments': keyboards and plucked strings. Giovanni Maria Artusi also attended concerts at San Vito; he described the performers as exceptional, and not only because of their gender, writing that: 'Most of the people in Italy…could not have done more than what was done by those nuns…'.[167]

These paintings of informal groupings often show a single cornett in a mixed ensemble; very often with a violin, a lute or keyboard instrument, sometimes with one or more singers, and often with additional instruments such as viols. This is in contrast to the instrument's use in church music, where iconography tends to show more homogeneous ensembles of cornetts and trombones, and reflects its ability to bridge the divide between the loud and soft instruments. The large-scale polychoral repertoire is undoubtedly important, and is representative of the music in which the professional virtuosi built their reputations. It is, perhaps, not surprising that this type of repertoire is the most familiar to modern audiences, as the larger scale of the music

[166] Harris
[167] Pendle, 70

makes for easier programming. Monteverdi's 1610 Vespers is, as already observed, undoubtedly the most commonly-performed work involving cornetts – in large part because it provides a more-or-less ready to use sequence of music of about the right length for a concert. Questions of performance of the Vespers are outside the scope of this project; suffice to note that, as John Whenham has observed, whilst 'there was no forum in the early seventeenth century in which the complete collection could have been given as a concert work',[168] the modern concept of a concert performance can be justified for this music, since it 'reflects the nature of the 1610 publication as a portfolio of Monteverdi's work, published for the world to admire'.[169] Many other enterprising performances and recordings of the polychoral repertoire have been, and continue to be, produced, whereas the sorts of smaller ensembles seen in these 'concert' paintings appear much less frequently. It is not usually possible to identify the music in the paintings; however, the Phillips madrigals visible in Brueghel's "Sense of Hearing", and the motets referred to by Cellini, suggest music that could be performed by a small mixed consort of this type, and Iain Fenlon has argued that 'sacred music was often performed by amateurs in a domestic setting' and madrigals 'often were performed … with voices and instruments'.[170] The output of Early Modern Europe's burgeoning printing-houses provided ready access to a huge range of suitable repertoire for these small, mixed consorts.

[168] Whenham, 92
[169] Ibid.
[170] Fenlon, 300

CHAPTER 6

ANGELS AND DEMONS: DIVERSE SYMBOLIC ASSOCIATIONS OF CORNETTS

In 1597, an Italian visitor to Canterbury Cathedral 'heard the solemne Musicke with the voyces, and Organs, Cornets, and Sagbutts… for his owne part, he protested, that (unless it were in the Popes Chappell) he neuer saw a more solemne sight, or heard a more heavenly sound',[171] and the Englishman Thomas Coryat, on witnessing a musical performance on 6th August 1608, at the *Scuola Grande di San Rocco* in Venice wrote that:

> This feast consisted principally of Musicke, which was both vocall and instrumental, so good, so delectable, so rare, so admirable, so superexcellent, that it did even ravish and stupifie all those strangers that never heard the like…for mine owne part I can say this, that I was for the time even rapt up with Saint Paul into the third heaven…sometimes sixeteene played together upon their instruments, ten Sagbuts, foure Cornets, and two Violdegambaes of an extraordinary greatness; sometimes tenne, sixe Sagbuts and foure Beautiful Cornets; sometimes two, a Cornet and a treble viol.[172]

The music heard by these writers, in which cornetts featured prominently, clearly evoked heavenly associations for them. This connection can also be seen in the

[171] Paule, 79-80
[172] Coryat, 390

numerous contemporary 'Angel Concert' paintings.[173] These works are often associated with Marian iconography, and in decorations of church interiors to provide visual analogies for the believer, and representations of saints or biblical figures with musical associations, such as Saint Cecilia and King David. The musicians in these paintings are depicted as angels, and tend to be shown either as female, or as delicately-featured youths.

Figure 64: Jacques Stella, St Cecilia, c.1626

(Museum of Fine Arts, Rennes)

[173] See also Winternitz (1979), especially chapter 11: On Angel Concerts in the 15th Century: A Critical Approach to Realism and Symbolism in Sacred Painting.

Saint Cecilia, as the patron saint of music, is frequently shown playing a lute or, as in Jacques Stella's painting, a small organ. Whilst Cecilia's earthly music-making takes place in a darkened room, her eyes look upwards to an ensemble of musical angels, bathed in golden light. The French-born Stella spent several years working in Florence, and by 1626 was based in Rome, and would certainly have been familiar with the new styles of vocal and instrumental music, employing groups of continuo instruments to accompany singers or other instruments. Appropriately enough, then, Stella's angelic ensemble has a substantial continuo group made up of bass viol, harp, theorbo and a small keyboard – perhaps a spinet or virginal – supporting a group of *cherubim* singing from a part book, and violin and cornett players; also a player with a large timbrel. The cornettist plays a right-curving instrument, with an embouchure slightly to the right of centre and her left hand uppermost. Most if not all the angel musicians appear to be female.

Figure 65: Domenico Zampieri (known as Domenichino), Madonna with Child, Saint Petronius and Saint John the Evangelist, 1581-1641 (detail).

(National Gallery of Art, Rome)

A similar group of angel musicians to Stella's surrounds Domenichino's Madonna and Child: cornett and violin, with harp and cello. The angels here are either female or androgynous youths; the cornettist plays with an extreme right-side embouchure, and the right-curving instrument has a silver mount at the end, and a pale – possibly ivory – mouthpiece. Although scale is difficult to evaluate in these paintings, this cornett appears particularly small and slender, and could perhaps be a cornettino.

Figure 66: Carlo Maratta: The Sleep of the Infant Jesus, with Musician Angels, 1697

(Louvre, Paris)

Another artist active mainly in Rome, Carlo Maratta, like Stella, shows a group of angelic musicians, this time in a much more intimate setting. The infant Christ is sleeping, perhaps having been lulled by the music, but the musicians are now silent. One of the angels, who are mostly depicted as children of indeterminate gender – holds a cornett, with a coloured mount below the mouthpiece. The instrument is not

being held in a playing position, and only a single tone hole is visible. From its position, and given the absence of other holes in proximity to it, this must be the thumb-hole, and the cornett is thus a right-curving instrument. A harp is visible in the background. The figure at the left of the painting appears to be holding a part book in her right hand, but there is insufficient clarity to judge whether she also has an instrument.

Figure 67: Anon., Heaven (Bolsover Castle, Derbyshire), 1619

(Author's photograph)

Bolsover Castle contains some of the best-preserved English painted interiors of this period, including the ceiling of the 'Heaven Closet' in which the central figure of Christ, ascending to heaven, is surrounded by a group of musical cherubim. This

grouping is probably inspired by European ‘Angel Concert’ paintings such as those discussed above. The Bolsover musicians play a wide variety of instruments: cornett, trombone, shawms, bagpipes, violin, bass viol, lute, harp, spinet or similar small keyboard instrument, drum, timbrel and triangle.

Figure 68: Anon., Heaven, 1619 (detail)

(Author’s photograph)

The Bolsover cornettist plays a left-curving instrument, with the left hand uppermost. The mouthpiece placement is difficult to make out, but appears relatively central.

> The decorations at Bolsover were commissioned by William Cavendish, Duke of Newcastle, who was known for his love of 'music, poetry, architecture and swordsmanship'.[174] Cavendish lavishly entertained King Charles I and Queen Henrietta Maria at Bolsover on 30th July1634, commissioning Ben Jonson to write what was to be his final masque, 'Love's Welcome'.[175] That cornetts were played within the Duke's household is shown by a 1636 inventory of musical instruments and music-books at Welbeck Abbey (another of Cavendish's residences), which includes an 'old Treble Cornett', a 'Tennor Cornett' and a 'Teble [sic] Cornett'.[176]

These paintings provide some evidence, then, of an association of the cornett, as well as other instruments, with ideas about heavenly sounds. However, cornetts' frequent appearances in this genre may also be simply a reflection of their use in church music, and the diverse range of instruments also relates to broader symbolic ideas about the richness of the heavenly harmony. As Katherine Powers observes,

> Though the artists portray the music-making with instruments the worshipper recognises, the spectacular ensemble combinations were not part of everyday musical performance. The diversity of instruments further displays the psalmist's exhortation to praise God with all means.[177]

We should not, however, assume that cornetts would always symbolise heaven. In the view of more conservative writers, especially in Protestant countries, the whole notion of using instruments in church music was deeply controversial; the topic was hotly

[174] Worsley, 34
[175] Jonson, 281-285
[176] Hulse, 42.
[177] Powers, 54

debated throughout the seventeenth century in England, for example. To such commentators, cornetts and other instruments represented not the heavenly harmony, but the perceived excesses and idolatry of Catholicism. Vitriolic comments such as the following, from a sermon by Peter Smart published in 1643, are far from atypical:

> Can such paltry toyes bring to our memory Christ and his blood-shedding? Crosses, Crucifixes, Tapers, Candlesticks, gilded Angels, painted Images, golden Copes, gorgious Altars, sumptuous Organs, with Sackbuts and Cornets piping so loud at the Communion table, that they may be heard halfe a mile from the Church? ... such must be our affection, that is, to receive that with feare and trembling (and not with piping and singing) which is so fearefull and dreadefull in itself.[178]

A common argument against the use of instruments in church music involved reference to the biblical account of Nebuchadnezzar's court whose instruments, in the English translations of the time, included cornetts:

> This Nabuchodonosor … appointed an herald to crie aloude, that when they heard the sound of the cornet, trumpet, harpe, sackebut, psalterie, dulcimer, and other instruments of musicke, then they should fall downe and worship the image.[179]

This argument – that instrumental music in church is undesirable because it was used by Nebuchadnezzar in conjunction with idolatry – recurs frequently in writings

[178] Smart, 18-20
[179] Bell, 80

through the period under discussion, for example the account of William Bedell in the late 1620s, who was reportedly

> …much dissatisfied with the pompous service at Christ's church in Dublin, which was attended and celebrated with all manner of instrumental musicke, as organs, sackbutts, cornets, viols, &c, as if it had been at the dedication of Nebuchadnezar's golden image in the plain of Dura.[180]

We can also find examples of cornetts being associated not with heaven and angels, but with their opposites. In *L'Orfeo*, for example, Monteverdi restricts the use of the cornetts and trombones to Acts 3 and 4, which take place in the underworld. It is evident that Monteverdi, whilst acknowledging the ability of cornettists to imitate voices, also thought cornetts less refined than strings. In a letter of 1616, discussing the problems of setting a maritime episode, he writes:

> The proper imitation of the words should be dependent upon wind instruments rather than upon strings and delicate instruments, for I think that the music of the Tritons and the other sea-gods should be assigned to trombones and cornetti, not to citterns or harpsichords or harps … so either the delicate will be unsuitable, or the suitable not delicate.[181]

A similar association is found in an English carved and decorated wood panel, showing Triton-like figures blowing horns or tenor cornetts:

[180] Kisby, 140
[181] Stevens, 116-7

Figure 69: Oak Panel, made 1590-1610, repainted after 1720

(Victoria and Albert Museum, London)

Another example can be found in the plaster ceiling decorations in the church of St. John the Evangelist, Leeds:

Figure 70: Plaster ceiling moulding, St. John the Evangelist, Leeds (detail), 1632-34

(Author's photograph)

Finally, a more explicitly demonic association appears in a late seventeenth-century Bolognese engraving, headed 'The mask is the cause of many ills'. This may be a

satirical comment on debauchery associated with the fashion of masked balls, where the faces of participants were hidden, but still allowed access to all the five senses. A winged devil and another grotesque figure play giant cornetts into the ears of the central face, and on the left, another devil holds a music manuscript headed ‘singing and charm’. Further perils enter via the senses of sight, taste, smell and touch. At the bottom, two more devils flank a dancing couple; one plays a cello or violone (‘dance to my bass’), the other, a cornett (‘and sing to this sound’). Although Mitelli may be suggesting an association of cornetts with either demons or loose morals, it seems more likely that he has chosen the cornett for its association with song.

Figure 71: Giuseppe Maria Mitelli, La Maschera– 1688

(British Museum, London)

However admired cornetts may have been for their ability to be played vocally and virtuosically, their symbolic associations were at best ambiguous, and depended as much on the preconceptions of the writer or illustrator as on any clearly-defined or agreed representational connections. Just as with their ability to bridge the categories of *haut* and *bas*, sacred and secular, professional and amateur, grand and intimate music, so cornetts also seem to have inspired a diverse range of symbolic associations.

CONCLUSION

Existing scholarship on cornetts, and the modern revival of playing these instruments, has concentrated on the public repertoire associated with their professional *virtuosi*, which is dominated by large-scale church music, particularly the Venetian-influenced polychoral style of the Gabrielis and their followers. There has also been a strong emphasis on a particular form, the curved treble, and the pairing of cornetts with trombones has come to be seen as the standard combination. Whilst there is historical support for these approaches, they do not tell the whole story. This study presents evidence for the use of cornetts in a greater diversity of musical situations, and in a greater variety of forms.

Iconography strongly suggests that cornetts were sometimes played in mixed groups, typically with a single cornett, one or two singers, violins and viols, and continuo. Repertoire for such groups could have included both secular madrigals and sacred motets, and many suitable collections were readily available in printed form. This usage was possible because cornetts were able to be played both loudly and softly, and thus were able to bridge the historical divide between *haut* and *bas* instruments. What emerges is that cornetts were sometimes played by non-professionals, and by women as well as men, in both convents and secular domestic settings.

The earliest unambiguous evidence for cornetts occurs in Germanic sources from the early sixteenth century, and shows straight treble instruments. These are followed only slightly later in the same century by curved trebles, which first appear in Italian sources. By the early seventeenth century, these basic forms had evolved into a family ranging from high cornettini to bass cornetts, and including straight, curved and mute

forms, examples of most of which survive in museums. It is true that by far the highest proportion of surviving instruments are curved trebles, but there are also substantial numbers of mute cornetts, cornettini and tenors. Bass cornetts, however are notably absent from the museum collections, but their existence is attested to by a number of sources discussed here. In particular, I have shown that straight and curved trebles, and tenor and bass cornetts, were known in England in the late 1600s.

The usage of cornetts began to decline in the second half of the seventeenth century, and in most places they fell out of use completely in the eighteenth, with very occasional localised persistence into the early 1800s.

My analysis of pitch measurements on historical cornetts, and an original graphical presentation of the data, show clearly that most play higher than modern concert pitch, with a preponderance in the range A=460-470 Hz. Further analysis shows an unambiguous relationship between pitch and length of the instruments, which is largely independent of size and form. Curved cornetts vary in whether they curve to the right or to the left, and iconography also shows considerable variation in mouthpiece placement and hand position. There is no single convincing explanation for this variety, but rather a combination of facial and dental physiology, 'handedness' and personal preference.

Besides their diversity in form, repertoire and usage, cornetts also inspired a range of symbolic associations. At various times they have been associated with heaven and hell, worship and idolatry, angels, demons and sea-gods. Indeed, the inability to pigeonhole cornetts into single categories of form, repertoire, usage and symbolism

seems itself to be their most defining characteristic. This offers enormous opportunities for both scholars and performers to explore the range of uses of this complex family of instruments.

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APPENDIX 1

Author's English translation of Mersenne's comments on the cornett (*Harmonie Universelle*, 1636, Part II)

On wind Instruments

PROPOSITION XXII

To explain the form of the Cornett, its technique, its construction, its range and its usage.

I have already mentioned elsewhere that I am not interested in researching the origins of nomenclature, which are all too often unknown, or useless, especially as the understanding of instruments does not depend on their names, and since it does not matter whether one calls them names based on letters from our own alphabet, or imposes some other name at whim.

Now, I begin this Proposition with the *Dessus de Cornets*, which is shown by AC with seven holes, although many are not equipped with the seventh, which is considered superfluous and useless, because the cornett with six holes has the same range as the others with seven. The letters A and E show the mouthpiece, which is removeable, as can be seen in figure AB, which shows it separated, and with which one can learn to form the embouchure, as I have mentioned in the discussion of the trumpet.
As for the *Taille de Cornets,* it is very similar to the treble, as the only difference is one hole, which descends lower, and which is opened by means of the key α, which is covered by the fontanelle βγ, which is why I have only shown the bottom end of this *Taille*, so that one can see it goes further than the *Dessus*. The last member, which can be called the *Basse*, is shown by EH, and it comes apart at points F and G, so that it can be carried more easily. It has seven holes, like the others, with the seventh opened by a key δ, which is covered by the fontanelle εζ. But this diagram is not in proportion to the others, as it represents a *Basse* of four *pieds*[182] [~1299mm] long, and with a range of an Octave, or a Ninth, whereas the *Dessus* is only one and three-quarter *pieds* long [~569mm], therefore I show here the exact measurements, because it is the right thing to do, and because the *Dessus* is used more than the other types, by virtue of its use in vocal Ensembles, and with the organ to play the Treble part, which is a delightful thing, when one hears it done to perfection, as by Mr Quiclet.
I will say firstly, then, that the sound extends across a sixteenth, as one can see from the notes underneath, from which it is easy to conclude what is possible on this instrument. Secondly, that there are only three *pouces* [~81mm] from point C to the centre of the sixth hole, and ten *pouces* [~271mm] from point A to the centre of the first. Thirdly, that the separation of the holes is thirteen *lignes* [~30mm], except those of 3 and 4, which are of sixteen *lignes* [~37mm]. The diameter of each hole is of four *lignes*[~9mm], and that at the bottom of the mouthpiece is only one *ligne* [~2mm], this is the reason in part that the sound of the cornet is so loud [fort esclatant], since its cavity gradually expands up to the bell [*pate*] C, whose diameter is one *pouce* [~27mm], although it expands more noticeably from the mouthpiece to the first hole,

[182] Klein, 72. 1 pied = ~32.4cm; 1 pouce = ~27.1mm; 1 ligne = ~2.26mm.

than from there to the bell[183]. But it must be pointed out that the Spanish also place a hole at the back, and above the first hole by thirteen lignes [~30mm]; and that there are completely straight Cornetts, made from a single piece of wood, instead of the curved ones, which are made from two pieces of *cormier,*[184] plum, or other well-seasoned wood: I wanted to say this, so that anyone who would wish to make this instrument, by using the proportions I have described, will get the best result.
Now it is the custom to cover Cornetts with leather, to preserve them for longer, otherwise they will rot too easily, being delicate; however this covering does not improve them. As for the quality of the sound it makes, it is like a ray of sunshine, which pierces the shadows or the darkness, when one hears it among the voices in a Cathedral, or Chapel.

PROPOSITION XXIII

To explain the other forms of the Cornett, and how to play them to perfection, with an example in five parts.

The Cornett can be blown in three or four ways, of which the first and easiest is called flowing or silent, and is made simply with the air, as it is blown into organ pipes.
The second is done with the tongue and the lip, and pronouncing *Ta ta ra ra ra ra ra ra* to descend, or ascend a whole octave in diminution, as is shown in these examples.
The third way is made simply with the tongue, and is used for all kinds of notes, except for semiquavers[185], for which one uses the second method above.
The fourth is done with the lip, but it is necessary to give a blow of the lip[186] for two notes, as one can see in this example, which can be made with any sort of embouchure, and he who will use various ways [of tonguing] will be able to vary his playing of the cornett. But it must be said that the embouchure will be formed on the right side of the mouth by those who are right-handed, and on the left side by those who are left-handed, although you will encounter those who play on the right, on the left, and in the middle of the mouth with equal facility.

Now one makes diminutions on the Cornet up to thirty-two notes to the measure, when one plays in perfection. One used to make a cadence with *martelemens*, which are expressed by *Tara tara, tara, ta,* as can be seen in these two examples.
The second cadence is made with a *tremblement* of the fingers in quavers, and in crotchets by a redoubling: but this *tremblement* is done with the simple breath, so that the cadence is made sweeter and more pleasant, and imitates the voice and the most excellent way of singing well[187]. It is for this reason that those who play the Cornet perfectly, soften the sound as much as possible, especially as it is by nature a little crude. And because this instrument should almost always be played in diminution, it is necessary for those who would learn to play it, should be able to compose, must be a good musician, so that he makes the *fredons* and the diminutions in good taste.
Now, he who has the blowing of the Cornett under his control, can play two tones

[183] Mersenne uses the word *pate* to denote the opening at the bottom of the instrument – I have translated this as 'bell'.
[184] Service tree – Sorbus domestica
[185] *demies crochues*
[186] This does not really make sense, and Mersenne must surely mean tongue.
[187] Mersenne seems to be implying that this ornament is not articulated, which disagrees with the instructions of other writers such as Dalla Casa.

higher than the tablature which I have given, as one finds when it is the hands of Mr Quiclet, who has given me the examples above.
It is possible to sweeten the sound of the cornett so much that it is no louder than a flute; it plays fully chromatically, provided that one has a good enough ear; and one can start *ut, re, mi, fa, sol, la* on any hole; thus the tablature is only showing the range of the instrument, and it is in no way limited always to produce UT when all the holes are closed: so it is easy to understand, that any note on the instrument can represent any note in the hexachord.
Cornetts can be made in ivory, and in a wood called yellow sandalwood[188], which is aromatic, and in all other kinds of wood, as with other wind instruments: but now I must discuss matters relating to the Serpent, the true Bass of the Cornett family.
One could still say many things about this instrument[189], which are not as well-known as the others, of which one is that someone possessing enough experience and practice, can blow the instrument at the bell C in such a way as to imitate a recorder;[190] and the other is to do with breath control, where they blow so gently, and control it so skilfully that they can play a piece 80 *mesures*[191] in length without taking another breath, as Mr Quiclet the King's Musician has demonstrated to many people: although that appears to be impossible, since one cannot live if one does not breathe often enough, yet it does not use as much breath as singing, or as in playing other instruments; it has also been shown by Mr Sourin of Avignon who could play a hundred *mesures* without breathing, or taking another breath.
From which one can conclude that the Cornett assists in conserving the breath, and in using less to play it than one usually uses when breathing through the mouth; and that the tiny opening at the bottom of the mouthpiece (whose diameter is only one *ligne* [~2 mm]), is important, for whereas the diameter of the mouth, which is usually two *pouces* or more [~50mm], allows the loss of a great quantity of air, all this must pass between the lips, and can only escape through a hole no larger than one *ligne* [~2mm].
It is now necessary to explain the way in which its range is achieved, which is very easy, because one first plays the lowest note, that is to say *ut* of C *sol ut fa* by covering all the holes, and then one plays *re, mi* etc. by uncovering each hole one after the other, until one has played the eight notes of the first octave, and then one re-covers all the holes, giving the next eight notes of the second octave by blowing more strongly, as is done with the flageolet and the flutes; so that it is not necessary to give here another tablature to explain it, since that of the flageolet will suffice. We will now see the music appropriate for the cornetts, so that the examples confirm the discussion, and so we combine theory and practice; now the Fantasia which follows is in the ninth mode transposed.
Now since I have given the proportions of the *Dessus*, I want to adjust those of the *Basse* (of which one can see here the proper diagram in proportion, because the other one is not accurate in this respect in which the holes are spaced by $1^{2}/_{3}$ *pouce* (~45mm): apart from the 3rd and 4th, which are spaced by half a *pied* [~162mm], the 6th and 7th by $6^{2}/_{3}$ *pouces* [~180mm], and from the seventh hole to the extremity of the bell D is $10^{1}/_{6}$ *pouces* [~275mm]. From the mouthpiece A to the first hole, there is one *pied* and seven *pouces* [~515mm]: the opening of the bell is two *pouces* [~54mm]. The diameter of the mouthpiece is five *ligne*s [~11.5mm] at the top and one *ligne* [~2mm] at the start of the hole: you must adjust the different diameters at the bottom

[188] *sandal cytrin*
[189] Mersenne is still talking about the cornett here.
[190] It is difficult to imagine what Mersenne is describing here.
[191] Probably the tactus beat, rather than the modern usage of 'bar'.

of the segments, or the three parts of its body; that at the first part C is $1^1/_4$ *pouces* [~34mm], next to C, and that of the second part CB next to B is eight *lignes* [~18mm]: from which it is easy to conclude that the bore, or the opening of the cornett always diminishes from the opening of the bell D to the top of the Cornett A. The same can be said of the other segments.

But the true Bass for the Cornetts is made with the Serpent, so that one can say the one without the other is a body without a soul, this is why I will discuss the Serpent after having explained the manner of blowing the cornett, and of playing it to perfection. As for the key E, it is covered with the fontanelle EF, and is for closing the first hole at the bottom, which the fingers cannot reach. The *Taille* is shown by GH with the key IK, and the mouthpiece L, and this one is in G: for it is different from the *Dessus* in that it has this key.

APPENDIX 2
Eccentric depictions of cornetts in two English sources

The 'Eglantine Table' is thought to have been commissioned around 1568 to celebrate the triple marriage of Elizabeth of Hardwick, one of the most powerful women in Elizabethan England, to the 6th Earl of Shrewsbury, and of her son and daughter from a previous marriage to the Earl's two children. The table top is richly decorated in marquetry, and shows numerous musical instruments, music manuscripts, playing cards and other games, intertwined with sprays of briar rose (eglantine).

Figure 72: Anon., 'The Eglantine Table' (detail) – c.1568

(Author's photograph)

Whilst many of the instruments, particularly the lute, cittern, guitar and harp, are accurately represented, less care has been taken with the other instruments, particularly the winds.[192] Two cornetts, visible in the detail above, are shown as six-sided, with a polygonal interior like that in Munari's 'Panoplia', and narrowing to a point so extreme as to leave no room for a mouthpiece.

Another English source, from the Civil War period, is found on the remains of an organ case attributed to Christian Smith.[193] This shows two musicians, playing a cornett and a trombone.

[192] Collins, 277

[193] Parrott, 184. The remains of the organ case are kept at the workshop of Mander Organs in London. I am indebted to Mr John Mander for allowing me access.

Figure 73: Anon., Organ Case, Christian Smith (detail) – 1643

(Author's photograph)

The cornett is again shown as six-sided, and with the polygonal profile reproduced inside the instrument. It is worth noting here that the depiction of the trombone is also rather eccentric when compared with other iconography and surviving instruments.[194]

[194] Tuck, 12

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