

From Swiss Flutes to Consorts:
History, Music and Playing Techniques of the
Transverse Flute in Switzerland, Germany and France
ca. 1470-1640

Nancy Hadden

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School of Music

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The candidate confirms that the work submitted is her own and that appropriate credit has been given where reference has been made to the work of others.

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This project has grown out of my years of personal experience with the Renaissance flute, beginning in 1972, at a time when almost no one played it and few makers were attempting to make historical copies of instruments. In the late 1970s, the Florentine engineer and flute maker Filadelfio Puglisi was one of the first to begin making historical copies of Renaissance flutes based on surviving instruments in the Accademia Filarmonica and Biblioteca Capitolare in Verona. His instruments and knowledge were fundamental influences on my own understanding of the nature and voice of the Renaissance flute, and in the years since I have developed my own performance skills as a specialist on the instrument.

I have spent a considerable number of years as a professional musician, teacher, and scholar, gathering materials, exchanging ideas, performing, studying, writing, teaching and lecturing about the history and playing techniques of the Renaissance flute. My decision to embark on a Ph. D. grew out of these discoveries and experiences.

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Abstract

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The flute consort was popular for music-making in civilian society from about the second quarter of the sixteenth century, especially in Germany and France where the main sources of music and instruction books were published between about 1520 and 1560. Prior to the development of the consort, the flute was primarily played by Swiss and German soldiers, in a duo with a large drum. Their presence on the battlefield and playing for court entertainments can be documented from around 1470, and it would appear that their presence at court provided the impetus for civilian players to take up the flute and transform it to an instrument for soft chamber music.

An introductory chapter deals with the instrument itself, describing its design features, surviving instruments, a short background history of the flute in the years leading up to the fifteenth century, and the names by which the so-called 'Renaissance flute' was known. Chapter 2 examines the contexts and activities of the Swiss and German military flautists, their movement into the courts of Europe, and the subsequent development of the flute consort, through a study of Swiss chronicles, court and city documents and payment records, pictures and musical sources. Chapter 3 follows the rise and development of flute consort playing in Germany and France *ca.* 1520 -1560; I have focused on this period in these two countries, because the main sources of consort music and instruction books were published there. Relevant activities of Swiss flutes and flute consorts in other European centres supplement the discussion.

Chapter 4 is devoted to an analysis of historic playing techniques. Important original source materials have been studied and interpreted, including some seventeenth-century treatises which indicate the survival of sixteenth-century playing techniques. Instruction books, along with evidence from surviving instruments, music and other written documents have made it possible to create a comprehensive method for playing the Renaissance flute.

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Abbreviations

<i>AFV</i>	Accademia Filarmonica, Verona
<i>AM</i>	<i>Annales Musicologiques</i>
<i>BCV</i>	Biblioteca Capitolare, Verona
<i>BJbHM</i>	<i>Basler Jahrbuch für Historische Musikpraxis</i>
<i>BWQ</i>	<i>Brass and Woodwind Quarterly</i>
<i>Dol</i>	Aurelio Virgiliano, <i>Il Dolcimelo</i> (ca. 1600)
<i>EM</i>	<i>Early Music</i>
<i>EpM</i>	Philibert Jambe de Fer, <i>Epitome musicale</i> (1556)
<i>GMO</i>	<i>Grove Music Online</i> , ed. Deane Root (http://www.grovemusic.com).
<i>GSJ</i>	<i>Galpin Society Journal</i>
<i>HM</i>	Marin Mersenne, <i>Harmonie universelle</i> (1636)
<i>IMPBS</i>	Howard Mayer Brown, <i>Instrumental Music Printed Before 1600</i>
<i>JAMIS</i>	<i>Journal of the American Musical Instrument Society</i>
<i>JAMS</i>	<i>Journal of the American Musicological Society</i>
<i>MG</i>	Sebastian Virdung, <i>Musica getutscht</i> (1511)
<i>MGG</i>	<i>Die Musik in Geschichte und Gegenwart</i>
<i>MID</i> (1529)	Martin Agricola, <i>Musica instrumentalis deudsch</i> (1529)
<i>MID</i> (1545)	Martin Agricola, <i>Musica instrumentalis deudsch</i> , 2nd edition (1545)
<i>ML</i>	<i>Music and Letters</i>
<i>PÄMw</i>	<i>Publikationen älterer praktischer und theoretischer Musikwerk</i>
<i>RdM</i>	<i>Revue de musicologie</i>
<i>RFCN</i>	<i>Renaissance Flute Circle Newsletter</i>
<i>RISM</i>	<i>Répertoire international des sources musicales</i>
<i>RMFC</i>	<i>Recherches sur la musique Française classique</i>
<i>RMI</i>	<i>Rivista Musicale Italiana</i>
<i>RRMBE</i>	<i>Recent Researches in the Music of the Baroque Era</i>
<i>RRMR</i>	<i>Recent Researches in the Music of the Renaissance</i>
<i>SIFTS</i>	<i>Bollettino della Società Italiana del Flauto Traverso Storico</i>
<i>SM</i>	Michael Praetorius, <i>Syntagma musicum</i> (1619)
<i>Versuch</i>	Johann Joachim Quantz, <i>Versuch einer Anweisung die Flöte traversiere zu spielen</i> (Berlin, 1752).

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Preface

This thesis is an in-depth study of the Renaissance flute consort, its repertoire and playing techniques during the sixteenth and early seventeenth centuries. Inventories, court and city records, pictures, instruction manuals and surviving instruments provide ample source materials which attest to the popularity of the flute throughout Europe during this period. These documents bring to life the players, makers and musical sound world of the Renaissance flute.

I have brought together materials on the Swiss military flute in the fifteenth century, and the consort flutes and their makers, music and players, especially in Germany and France, where the flute consort seems especially to have thrived during the sixteenth century. Included are discussions of surviving instruments, collections of consort music, and instruction books. I have also examined and discussed the pedagogical materials for all aspects of playing the instrument, based on instruction manuals and other primary source materials which date from about 1510 to 1640, and on my own experience as a player.

The chapters on the Swiss flute present and examine substantial new materials and ideas about the ‘military’ phase of the flute’s history. Prior to about 1510, flute playing seems to have been primarily the domain of soldiers, who played it in duo with the drum – the so-called ‘Swiss pair’. The Swiss pair is first depicted *ca.* 1470, when Swiss chronicles portray them in battle scenes. By the late 1480s, these military players are recorded as ‘free-lance’ musicians hired at the French and German courts to provide music for banquets, weddings, dancing and the like.

My analysis and discussion of this hitherto little-explored period in the history of the flute considers the instruments, the music, the particular playing style indicated for the Swiss pair both on and off the battlefield, the introduction of the Swiss flute at court, the direct relationship this introduction had on the adoption of the flute by civilian society, and the changes in music and playing styles which came about when the flute developed its new role as a consort and chamber music instrument.

The development of three sizes of flutes for consort playing – soprano, alto/tenor and bass – is evident from pictures and music which appeared around 1520. Pictures first document only single flutes of approximately tenor size participating in civilian chamber music from around 1510. Not until 1523 do we find the first picture, by the Swiss artist Urs Graf, of a full consort of flutes – soprano, alto and tenor of the same size, and bass. Around the same time (or a little earlier), the first book of music for consorts of flutes and recorders was published in Cologne: Arnt von Aich, *Hubscher lieder*. It is thus possible to pinpoint the decade 1510 to 1520 as the period during which the full consort must have developed, the most important factor being the development of a playable bass flute. During the decade 1520-1530 descriptions of musical events, inventories listing ‘cases’ or consorts of flutes, and more pictures attest to the presence of flute consorts, especially in Germany and France. The

development of the full consort seems to have happened somewhat later than for other instruments such as recorders and viols, which had developed different sizes for playing SATB consorts by the beginning of the sixteenth century.

I have considered the possible reasons for the late development of the flute consort, and have put forward arguments in explanation, based on my research into original instruments and playing techniques. One reason may lie with the difficulty of making flutes – especially bass flutes. A second reason may have to do with the relative difficulty of playing the transverse flute, which requires a sophisticated technique for forming the embouchure and manipulating the breath to control the sound and tuning. The Renaissance flute was an ‘imperfect’ instrument, in that its keyless fingering system required the use of half-shading of some holes in order to play a full chromatic scale. This made performance in certain modes difficult.

Early general histories of the flute (for example, Richard Rockstro, *A Treatise on the History, Construction and Practice of the Flute* (London, 1890, R, London, 1967, and Buren, 1986); and Philip Bate, *The Flute* (London, 1969)) traditionally showed little interest in or knowledge about Renaissance flutes, and put forward the opinion that they were in many ways ‘primitive’ ancestors to the modern flute – although Rockstro tempered his view with the somewhat patronizing observation that in spite of its crude construction, the instrument possessed a certain charm. This view probably held back scholarly interest in developing a historical account.

More recent general histories have treated the subject of the Renaissance flute with more confidence and have given it a prominent place. These include: Raymond Meylan, *The Flute* (Portland, 1988); John Solum, *The Early Flute*, New Early Music Series, 15 (Oxford, 1995); and Ardal Powell, *The Flute* (New Haven and London, 2002). Powell’s book is especially valuable for devoting two substantial chapters to the Renaissance flute, bringing together an impressive amount of secondary source material for the general reader. David Lasocki, ‘Historical Flute Bibliography’, *Traverso Volumes 1-10, 1989-99* (Hudson, NY, 161-90), provides a bibliographic resource for studying flutes of the Middle Ages, Renaissance, Baroque and Classical periods. Of the 549 books, articles and dissertations listed, only 17 are for the Renaissance flute.

Several articles on various aspects of Renaissance flutes and flute playing were published in the 1970s and 1980s, including Anne Smith, ‘Die Renaissancequerflöte und ihre Musik’, *BJbHM*, 2 (1978), 9-76, which is the first survey of instruction books and repertoire for the Renaissance flute and flute consort; Jane Bowers, “Fläüiste Traverseinne” and “Flute d’Allemagne”: the flute in France from the late middle ages up through 1702’, *RMFC*, 19 (1979), 7-49; which focuses on players and makers in France; and Filadelfio Puglisi, who provided all-important studies of original instruments, first with two articles, ‘The Renaissance flutes of the Biblioteca Capitolare of Verona’, *GSSJ*, 32 (1979), 24-37, and ‘A survey of surviving Renaissance flutes’, *GSSJ*, 41 (1988), 67-82. More recently, Filadelfio Puglisi, *The*

Renaissance Transverse Flutes in Italy (Florence, 1995), is a full-length study of all the surviving flutes in Italian collections.

Philippe Alain-Dupré has contributed several recent and valuable studies of original instruments, makers and pitches. Alain-Dupré 's articles include 'Renaissance and Early Baroque Flutes, an Update on Surviving Instruments, Pitches and Consort Groupings', *GSI*, 57 (2004), 53-62, and 'Proportions of Renaissance Tenor Flutes and the Relationship of the Verona Flutes to Foot-length Standards', *GSI*, 59 (2006), 21-27. His book, *Les Flûtes du Rafi* (Courlay, 2000), is a study of the instrument makers Michaud and Claude Rafi and their instruments. Boaz Berney, 'Renaissance Transverse Flutes: A Re-examination of the Surviving Instruments' *Musicque de Joye*, ed. David Lasocki (Utrecht, 2005), attempts to match makers' marks with specific names of makers and workshops, but he weakens his argument with the observation that almost every mark has several variants which hinder the establishment of a clear connection. Berney also briefly discusses aspects of pitch and scaling.

Important repertoire studies include: H.J. Moser, *Das Liederbuch des Arnt von Aich* (Kassel, 1930), an edition and study of the earliest German music published for flutes and recorders; Peter van Heyghen, 'The Recorder Consort in the Sixteenth Century: Dealing with the Embarrassment of Riches', *Musicque de Joye*, ed. David Lasocki (Utrecht, 2005), primarily a study of recorder music but with a good discussion of the flute pieces in Aich's collection; and Howard Mayer Brown, 'Notes (and Transposing Notes) on the Renaissance Flute in the Early Sixteenth Century', *JAMIS*, 12 (1986), 5-39. Brown's article attempts to illuminate transposition practices for flute consort, focusing on the earliest transposition instructions for flute, Martin Agricola's *Musica instrumentalis deudsch* (1529/45) and Brown's own and somewhat controversial assertion of the relationship of Agricola's instructions to the earliest music published for flutes and recorders in France, Pierre Attaignant's two chanson collections of 1533.

My aim in this thesis is to provide an integrated study, informed by practice, of original instruments, historical sources, music and playing techniques. No such all-encompassing study has been done before.

Chapter 1, 'The Instrument', offers a short background on the design features and early history of the transverse flute, followed by a study of surviving original flutes and names for the flute, in an attempt to unravel the difficult and often confusing area of nomenclature.

Chapter 2, 'The Swiss Flute', is a detailed study of the Swiss flute and its partner, the drum – the 'Swiss pair' – played by Swiss and German soldiers on the battlefield and later at the courts of Europe. The military history of the Renaissance flute pre-dates and then parallels its 'classical' use as a consort instrument. A distinction between so-called 'military' flutes and 'consort' flutes is nearly impossible to make, since so little concrete evidence survives; however, I have raised some questions and made some observations regarding likely differences in playing styles and techniques which may have existed between them.

Chapter 3 focusses primarily on the consort flute in Germany and France because it was in these two countries where all of the consort music and the two principal instruction books for consort flutes were published: Martin Agricola, *Musica instrumentalis deudsch* (Wittenburg, 1529 and 1545), and Philibert Jambe de Fer, *Epitome musicale* (Lyon, 1556). The flute consort is also in evidence in England and Italy, and additional material has been presented, where relevant, from these countries. I have documented the use of the transverse flute through pictures, inventories, court records, account books, music and treatises to support the thesis that the flute consort enjoyed its greatest popularity between *ca.* 1520 and *ca.* 1560.

Chapter 4 attempts to develop a pedagogy for the Renaissance flute. It is a personal interpretation of the pedagogical sources and technical advice given by early writers. These sources are not without contradiction and often lack detail. I have supplemented sixteenth-century writers' instructions with sources from the seventeenth century, to provide a comprehensive study of all aspects of Renaissance flute technique. Into the mix I have added my own advice and opinions, based on my years of studying, playing and teaching. The aim is to provide a modern-day *vade mecum* for the Renaissance flute.

Two appendices complete the study: Appendix 1 includes facsimile reproductions of all the known fingering charts for Renaissance flutes, dating from between 1529 and 1636. Appendix 2 is a modern edition of the complete chansons for flute consort which were published by Pierre Attaignant in Paris in 1533. No complete edition is otherwise available, and its inclusion serves to illustrate my discussions of repertoire and technique and provides access to the music for modern performers.

Chapter 1. The Instrument

Notwithstanding the rude construction of the early flutes and their extremely limited capabilities, the unrivalled charm of the tone peculiar to the instrument must always have been present in some degree, and to this great point of excellence, combined with the power of the skilful player to rectify imperfect notes, we may consider that the flute owed its popularity for so many years. It is not improbable that owing to the power above mentioned, the early flute, though actually one of the most imperfect of wind-instruments in its construction, was more perfect in performance than any of its contemporaries.

Richard Rockstro, *A Treatise on the Flute* (1890)

Chapter 1.1

A Brief Introduction to the Renaissance Flute

The instrument now known as the ‘Renaissance flute’ is a cylindrically-bored, one-piece, keyless wooden transverse flute, known to have been in use in European art music during the sixteenth and early seventeenth centuries. This type of flute has a very long history. Rare examples of transverse flutes are depicted in Etruscan and Roman art of the 2nd and 3rd centuries BC, and in Europe via Byzantium from the 10th and 11th centuries.¹ It was used across the periods we call Medieval, Renaissance and early Baroque. From all appearances the Renaissance flute differs little from the cylindrical flutes found in pre-sixteenth-century iconographical sources, but no pre-Renaissance instruments survive from which to make a more accurate evaluation. The simple keyless flute continued to be played as a military and folk instrument after the development of the one-keyed Baroque flute *ca.* 1670. The term ‘Renaissance flute’ must therefore be understood in its wider sense, to refer not only to the instrument but to its use in art music – approximately 1500-1650.

Throughout the period of its main use, the Renaissance flute was remarkably consistent in its physical design, exhibiting few changes in its essential features.² This suggests that the instrument suited the musical requirements that were made upon it, and that players and makers felt no need to alter it. By comparison, the Baroque flute – which became popular at the French court of Louis XIV during the 1680s, and by 1700 was played throughout most of Europe – was subjected to alterations.³ It was designed around 1670 with a conical bore and a single key, but from the beginning, makers experimented with bores and finger-holes. The Baroque flute was first made in three pieces, but mutated to four pieces by about 1720, with *corps de rechange* to accommodate the various pitch standards in use, and by the 1750s experiments with key-work and elliptical embouchure holes were taking place.⁴ These changes were no

¹ Roman and Etruscan examples exist on tomb reliefs and coins, but it disappears from art works after the fall of Rome and only begins to reappear in the Byzantine art of the 10th and 11th centuries. See Howard Mayer Brown and Ardall Powell, ‘Flute’, *GMO*, for a concise history; for illustrations of medieval flutes, see Liane Elich, ‘Zur Ikonographie der Querflöte im Mittelalter’, *BJbHM*, 8 (1984), 197-211.

² Filadelfio Puglisi illustrates this fact with drawings and analysis in his pioneering studies of Renaissance flute design, ‘A survey of surviving Renaissance flutes’, *GSI*, 41 (1988), 67-82, and *The Renaissance Transverse Flutes in Italy* (Florence, 1995).

³ For the early history of the Baroque flute, its design and provenance, see Ardall Powell, *The Flute* (New Haven and London, 2002), 68-88.

⁴ The Berlin flute-maker Quantz remarked that he added a second key for d#, tuned differently from e), in 1726; see Johann Joachim Quantz, *Versuch*, 31. All references to Quantz, *Versuch* are from the

doubt a result of the requirements and specialized demands arising from the growth of orchestra, opera and stage music, which in turn affected the demands made on the flute, and makers were quick to meet the changing needs of musicians. By the end of the eighteenth century, the Baroque flute, barely one hundred years old, had undergone frequent and radical alterations. Ill. 1.1.1 compares several types of flutes of Renaissance, late seventeenth-century French Baroque and late eighteenth-century German design, showing the metamorphosis in the outward appearance of the instruments.

The General Design of the Renaissance Flute

It is important to review the design features of Renaissance flutes and the relevant studies of original surviving Renaissance flutes to gain an understanding of how the instrument was made and played, and how the design affects playing. Articles by Marcello Castellani, Rainer Weber, Filadelfio Puglisi, Philippe Allain-Dupre and Boaz Berney are particularly useful. They provide measurements and historical details of all the known extant flutes in museum collections.⁵ These articles have provided the foundation for the following discussion.

A historically accurate musical practice depends on the availability of historically acceptable replicas of Renaissance flutes. Such availability is not at all a matter of course, as it has come to be with Baroque flutes, where many modern makers have faithfully and successfully copied museum instruments. Few makers have turned their attention to Renaissance flutes, and even fewer have successfully reproduced instruments according to historic design principles.

translation by Edward R. Reilly, *On Playing the Flute* (London, 1966; 2nd ed., London, New York, NY, 1988; Rpt., London and Boston, MA, 2001). The 1752 *Versuch* was simultaneously published in French, *Essai d'une methode pour apprendre a jouer de la flute traversiere* (Berlin, 1752); facs. ed. Antoine Geoffroy-Dechaume and Pierre Sechet (Paris, 1975). English flute makers began to add keys in the 1750s. Bruce Haynes, *The Eloquent Oboe* (Oxford, 2001), 18, refers to a similar state of affairs for the design of the oboe in the eighteenth century, where changes rapidly were made to meet the needs of changing repertoire and usage.

⁵ Marcello Castellani, 'Two late-Renaissance transverse flutes', *GSI*, 25 (1972), 73-79; Rainer Weber, 'Some researches into pitch in the sixteenth century with particular reference to the instruments in the Accademia Filarmonica of Verona', *GSI*, 28 (1975), 7-10; John Henry Van Der Meer and Rainer Weber, *Catalogo degli Strumenti Musicali dell'Accademia Filarmonica di Verona* (Verona, 1982), 42-46; Filadelfio Puglisi, 'A survey of surviving Renaissance flutes', *GSI*, 41 (1988), 67-82 and *The Renaissance Transverse Flutes in Italy* (Florence, 1995); Philippe Allain-Dupré, 'Renaissance and Early Baroque Flutes, an Update on Surviving Instruments, Pitches and Consort Groupings', *GSI*, 57 (May 2004), 53-61 and 'Proportions of Renaissance Tenor Flutes and the Relationship of the Verona Flutes to Foot-length Standards' *GSI*, 59 (2006), 21-27; Boaz Berney, 'Renaissance Transverse Flutes: A Re-examination of the Surviving Instruments', *Musicque de Joye* (Utrecht, 2005), 61-76.



Renaissance Flute *ca.* 1580 (copy by Martin Wenner)



Hotteterre Flute *ca.* 1690 (copy by Alain and Stéphanie Weemaels)



Grenser Flute *ca.* 1780 (copy by Alain and Stéphanie Weemaels)

III. 1.1.1. Three flutes showing external design changes.

Inadequate modern copies do not respond or finger like the originals. For example, errors are made by makers in the tuning, because the Renaissance flute is mistakenly regarded as an imperfect ancestor of the Baroque flute, with an ‘out of tune’ scale of D major (on the tenor). The lowest note of the Renaissance flute is D, but the scale most often found in Renaissance flute music is not D major, but a modal Dorian scale with B \flat and F natural. Virgiliano’s fingering chart for *traversa* gives only fingerings for a scale with F and B \flat .⁶

F \sharp is a difficult note to play in tune; even considering the mean-tone scale with its low F \sharp , the fingering shown in all the tenor charts (12345) is 35 cents flat in the first octave, and 50 cents flat in the second octave. The tone is strong and the pitch is not easy to bring higher with a gentle sound. B natural is similarly too low – 25 cents flat in the second octave. Yet some modern makers have ignored this evidently intentional design feature, and attempt to tune the flat F \sharp higher by making the fifth hole larger. This enlargement is at the expense of a good F natural, and upsets the balance and the tuning of the scale (for more detailed discussion of finger hole tuning, see Ch. 4.7). Flutes were played primarily in the upper octave, yet there are modern copies which are voiced to favour the low octave, giving a rich, almost ‘Baroque’ sound at the expense of the high octave, which is shrill, coarse and inflexible.

The apparent simplicity of Renaissance flute technology belies a subtle and refined design which has proved elusive to reproduce. Flutes are usually tapered gently from the mouth hole to the bottom finger hole, which means that the wall thickness is progressively less at each finger hole. The mouth hole and finger holes are extremely small and heavily undercut, giving a very easy response, but requiring great precision by the player in the management of

⁶ Aurelio Virgiliano, *Dol* (*ca.* 1600).

the embouchure and air stream to produce a clear and singing sound. Too many makers rely on finger holes and mouth holes which are cut larger than the originals, and without enough attention to the time-consuming undercutting which is necessary.

Standard Renaissance practice was to make wind instruments in three basic sizes pitched a fifth apart, with the same terminology as for vocal ranges: soprano, alto, tenor, bass. The alto and tenor parts share the same range in most consort music, and so the same size instrument is used for both parts. Because wind instruments are generally called by the lowest note they reproduce, when all finger holes are closed, the six-holed Renaissance flutes, for example, are called bass in G, alto/tenor in D and soprano in A. Recorders, which have seven holes and go a tone lower, are called basset in F, alto/tenor in C and alto in G. For both flutes and recorders these are the standard consort sizes named in most sixteenth-century sources.

Hundreds of flutes can be documented in sixteenth-century inventories. Only a small number survive. But these surviving flutes show basic features which are remarkably consistent – comparing the surviving instruments (48 or so – the exact number depends on the amount of historical evidence required for accepting an instrument as ‘authentic’), their uniformity is striking. There appeared to be a common tradition of Renaissance flute making which Filadelfio Puglisi has referred to as the ‘Platonic’ ideal; I take this to be related to the philosophy of ideal forms, which early makers adhered to without compromise.⁷ The evidence for such a common tradition allows us to make a list of design features which are present on originals and therefore desirable in modern replicas. A replica having all such physical features would be historically correct in its design (leaving aside the critical consideration of sound and response for the moment). Certain characteristics observable in iconography, theoretical descriptions and surviving flutes are particular to it, and allow us to describe a ‘Renaissance flute’.

The Physical Characteristics of the Renaissance Flute

The following list puts forward the attributes of a Renaissance flute, being the most common features which define the flute as ‘Renaissance’:

1. It is a consort instrument in three sizes, soprano in A, alto and tenor of the same size in D, and bass in G. The basic features are illustrated in Martin Agricola’s drawing of a consort of

⁷ Filadelfio Puglisi, ‘A Survey of Renaissance Flutes’, *GSJ*, 41 (1988), 76; Platonic concepts still hold sway – Roger Deakin, *Wildwood: A Journey Through Trees* (London, 2007), 156, suggests that there is ‘more than a hint’ of Platonic thought in the creations of the contemporary wood sculptor, David Nash of Capel Rhiw: ‘he is a strong believer in the notion of ideal forms, returning again and again to the sphere, the pyramid and the cube’.

flutes, *MID* (1529) (see Ill. 3.2.2): a cylindrical outline, small round mouth hole, the placement of the plug just above the mouth hole, and six finger holes.

2. The inside bore is cylindrical, with at most some minor local corrections for octave tuning in some originals (this affects only octaves d'/d''-g'/g'', not enough to allow a'' with baroque fingering). The very deep and narrow cylindrical bore which the Renaissance flute requires is an easy operation, even on a primitive lathe.⁸

3. Wall thickness is controlled by external tapering of the diameter, in other words, the outside bore is conical. The thickest point is at the embouchure hole, where the wall is between 4 and 4.5 mm thick. It tapers rapidly from this point to finger hole 1, then gradually decreases to finger hole 6, where it is the thinnest, no more than 2-2.5 mm. This subtle external tapering is present on nearly all originals and greatly affects the sound emission at each finger hole. A few flutes do not exhibit this external tapering. Some writers believe this feature to indicate that they are military flutes, but there is no sure way to distinguish military flutes from art flutes until the seventeenth century, when a few instruments in Graz can be identified as military flutes, and writers Praetorius and Mersenne indicate that 'Swiss flutes' had developed some clear differences of pitch and fingering.⁹

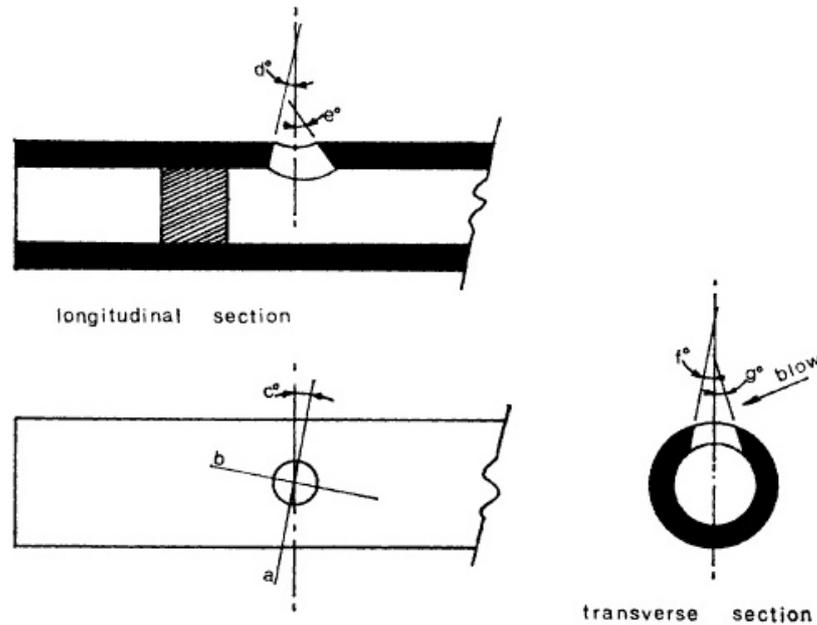
4. The embouchure hole is slightly oval and usually rotated clockwise, with the major axis measuring between 7.9-8.6 mm on originals. This opening is much smaller than on Baroque flutes. Martin Wenner has pointed out that some original instruments in the Accademia Filarmonica, Verona show a symmetry of the undercutting on the inside of the bore which indicates that the embouchure hole was designed to allow for both left- and right-handed playing positions.¹⁰ Both right and left-handed playing positions are found in pictures. The size of the hole and undercutting are crucial for the sound – a few tenths of a millimetre below or above the range above drastically alters the sound and flexibility for the worse. Modern

⁸ The earliest treatise which deals with this is Joseph Moxon, *Mechanical Exercises or the Doctrine of Handiwork* (London, 1678). The craft of turning water pipes out of wood on a lathe was known since Medieval times.

⁹ For the Graz flutes see Gerhard Stradner, *Die Musikinstrumente in Steiermärkischen Landeszeughaus in Graz* (Graz, 1976). For seventeenth-century data on Swiss flutes, see Michael Praetorius, *SM II* (1619), trans. Blumenfeld (New York, 1962), 22 and 35; Marin Mersenne, *HU* (1636), 244-45. For modern discussions of so-called 'military' flutes, see Ardal Powell, *The Flute*, 27-33 and Boaz Berney, 'Renaissance Transverse Flutes: a Re-examination of the Surviving Instruments', *Musicque de Joye*, ed. David Lasocki (Utrecht, 2005), 64-67.

¹⁰ Martin Wenner, lecture-demonstration given at Strasbourg Conservatoire, Strasbourg, France, 16 May, 2009.

copies suffer from being either too small, resulting in a thin and lifeless sound, or too large, making a coarse and inflexible sound. Undercutting (the enlarging of a hole on the interior of the bore for purposes of tuning and sound emission) is moderate, leaving distinct rims on the inside of the chimney. Ill. 1.1.2. shows the size, rotation and undercutting angles of a typical embouchure hole. The mouth hole is always in a straight line with the finger holes, even on one-piece basses, not turned inward as advocated by eighteenth century writers for the Baroque flute such as Quantz.



Ill. 1.1.2. The embouchure hole, showing the precise rim and interior angles.¹¹

5. Six finger holes are arranged in two groups of three (○○○ ○○○). Each group is more or less equally spaced, to allow for right or left-handed playing. The distance between holes 2-3 and 5-6 requires a significant stretch of the hands, noticeable on tenors and more pronounced on basses. The external diameter does not exceed 7.0 mm on any hole, no doubt to aid in covering the holes more easily with the fingers, given the stretches involved. However, the holes exhibit deep undercutting on the inside of the bore in order to correct tuning and improve the emission of sound.¹² Modern Renaissance flutes often have finger holes which are too large and with not enough undercutting – a fiddly job which must be accomplished by many hours of hand work. Finger holes which are too large on the outside result in less successful cross-fingered notes, and loss of flexibility for tuning and tone control.

¹¹ Diagram from Filadelfio Puglisi, 'The Renaissance Flutes of the Biblioteca Capitolare of Verona: the Structure of a *Pifaro*', *GSI*, 32 (1979), 33.

¹² See Arthur Benade, *Fundamentals of Musical Acoustics* (New York and London, 1976), 449-455, for discussion of finger hole sizes, their relationship to sound emission, and the ratio between the power of sound and sizes of holes on flutes.

The first finger hole is in the acoustical middle of the flute, exactly half-way between the cork and the bottom end of the flute; opening or closing it has no effect on the second harmonic of the fundamental. In other words, the overblown octave d'' can theoretically be fingered in either of the following ways: 123 456 or 23 456 (nearly all fingering charts show the second way, probably because opening the hole aids slightly in the speaking quality of the octave. See Ch. 4.3).

6. Unlike most other Renaissance winds, the flute is keyless. It seems that this was a deliberate choice, since key technology was known for shawms, recorders, crumhorns and curtals, and is clearly visible in fifteenth- and sixteenth-century pictures. But these instruments had thicker walls which could support the weight of pins, springs and the keys themselves. Flute makers shunned even local thickening to support a key for E \flat , even though it meant that E \flat was obtainable only by half-shading the bottom (6th) hole. This imperfection was remedied when the wholly new, thicker conical-bore Baroque flute made its appearance during the second half of the seventeenth century, and a seventh hole covered by a key was added to the flute to enable E \flat /D \sharp .

7. The ratio of the bore diameter to speaking length, measured by dividing the sounding length by the internal diameter, is between 30 and 33 on tenors, the slenderer the better for octave tuning and a good high register.¹³ This is an optimum ratio for the tone and response. Basses suffer in this respect, with a ratio of about 28 on most basses, which adversely affects the range, restricting basses to around two octaves; higher notes are simply not reliable.¹⁴

8. The most common wood on surviving instruments is boxwood. The second most common is maple, and fruitwoods such as plum are also found. Inventories describe flutes made of ebony and glass, or decorated with filigree of metal such as silver and brass, but there are no surviving instruments in these materials.¹⁵

Today the supply of boxwood is limited, and supply may also have been a problem in the Renaissance; surviving bass flutes in particular are less frequently made of boxwood, and

¹³ Filadelfio Puglisi, 'A Survey of Surviving Renaissance Flutes', *GSI*, 41 (1988), 70-71.

¹⁴ But see Arthur Benade, *Fundamentals*, 497-99, where he shows that the position of the cork also influences the ease with which high notes can be produced.

¹⁵ Among the many examples in inventories of Renaissance flutes see those of Henry VIII (1542 and 1547), Raimond Fugger (1566) and the court of Bad-Württemberg, Stuttgart (1589), for flutes made of ebony, glass (or 'painted to look like glass'), maple, boxwood, decorated with silver or brass, etc. The most comprehensive list of inventories is in David Lasocki, 'A Listing of Inventories and Purchases of Flutes, Recorders, Flageolets and Tabor Pipes, 1388-1630', *Musicque de Joye*, ed. Davide Lasocki (Utrecht, 2005); for Henry VIII, see 434, 442, for Fugger, see 453-4, for Stuttgart, see 468 and 474-78.

when they are, the wood is often of low quality, full of knots (for example, the basses in the AFV). The survival of boxwood flutes over maple ones may have to do not so much with a preference for boxwood by original makers, but more with the preference for maple in the modern woodworm's diet. Clear proof of this is to be seen in the surviving instruments of the BCV, where original boxwood flutes lay undisturbed beside maple flutes which are eaten through (and continue to be chewed) by active woodworms.

It is difficult to ascribe differences in sound to types of wood, and the role that the material plays in determining the tone quality has long been argued amongst acousticians, makers, listeners and players.¹⁶ It may well be that roughness or smoothness of grain, hardness or softness, polish and porosity all contribute to the response. Of the woods mentioned above, boxwood is the least porous and thus capable of great smoothness and polish in the bore. Players' responses (perhaps subjective) to playing consorts of fruitwood instruments such as plum is that they produce a sound that is softer-edged than boxwood, while maple, a lighter and more porous wood, results in a more resonant feel and brighter sound.

9. Tenors are in one piece without decorative turning. A single exception is a French flute made by Lissieu, now in Vienna, Kunsthistorisches Museum (no. 31). This is a late instrument, dating from *ca.* 1670, which has Baroque features – made in two pieces with ornamental turnings at the joint of the headpiece and at the foot – but still with a 'Renaissance' cylindrical inside bore.¹⁷ Three surviving basses are made in one piece, also without decorative turning.¹⁸ Most surviving basses are in two pieces and have rings of horn, silver or brass at the joint for strength. On one bass, probably a seventeenth-century instrument, concentric rings are carved into the head joint and secured with a brass ring to strengthen the joint.¹⁹

10. Most fingering charts were notated at eight-foot pitch, however, flutes normally played an octave higher than notated pitch. The basic range was two octaves, sounding d'-d''' on the tenor, a'-a''' on soprano, and g-g'' on the bass. The charts and discussions by Jambe de Fer, Agricola, Virgiliano, Praetorius and Mersenne are in agreement that the range of the tenor

¹⁶ For a discussion of wood characteristics see John W. Coltman, 'Effect of Material on Flute Tone Quality', *The Journal of the Acoustical Society of America*, 49, no. 2 (July 1970), 520-523.

¹⁷ For discussion about the Lissieu flute see Jane Bowers, 'New Light on the Development of the Transverse Flute between about 1650-1770', *JAMIS*, 3 (1977), 5-56; for further observations about this flute see Ch. 1.3 below.

¹⁸ For details of these flutes see the inventory of flutes in Philippe Alain-Dupré, 'Renaissance and Early Baroque Flutes, an Update on Surviving Instruments', *GSI*, 57 (2004), 54-5.

¹⁹ Bass joints are pictured and described in Filadelfio Puglisi, 'The Renaissance flutes of the Biblioteca Capitolare', *GSI*, 32 (1979), 34-5 and plate VII.

could be increased to eighteen or nineteen notes (up to g''' or a''') by skilled players. Ambiguities and differences amongst the fingering charts are discussed fully in Ch. 4.4.

Instruction Books and Fingering Charts

Only two instruction books were published for the Renaissance flute during the sixteenth century, one German and one French: Martin Agricola, *Musica instrumentalis deudsch* (Wittenberg, 1529; revised edition 1545), and Philibert Jambe de Fer, *L'Epitome musical* (Lyons, 1556). These two books provide valuable information about most aspects of Renaissance flute playing techniques: the make-up of a consort, range, fingering, transposition, articulation and use of breath. Two seventeenth-century printed sources (again, one German and one French), Michael Praetorius, *Syntagma musicum II* (Wolfenbüttel, 1619) and Marin Mersenne, *Harmonie Universelle* (Paris, 1636) cover important aspects of flute playing, such as range, fingering, transposition, the make-up of a consort. A number of other sixteenth and seventeenth sources treat one or more aspects of flute playing. A complete list of sources for Renaissance flute technique is in Ch. 4.1. No single source is fully comprehensive, some are contradictory, but all are necessary for piecing together a pedagogical method for the Renaissance flute.

To provide a convenient reference point for discussion, I have compiled a basic two-octave fingering chart which shows the fingerings in common use for the D tenor (Table 1.1.1) For original charts, see Appendix 1, where facsimiles of all the known sixteenth- and seventeenth-century fingering charts are reproduced. To accompany my discussion of fingerings (Ch. 4.4), I have compiled a fully chromatic fingering chart for each of the three sizes of flutes from all of the original sources, with commentary to aid in interpreting them, in Table 4.4.1.

Table 1.1.1. A basic fingering chart for the tenor flute in D

First Octave	Second Octave	Third Octave
d' ●●● ●●●	d'' ○●● ●●●	d''' ○●● ●●●
e _b ' ●●● ●●○	e _b '' ●●● ●●○	e _b ''' ●●○ ○●●
e' ●●● ●●○	e'' ●●● ●●○	e''' ●●○ ○●○ / ●●○ ○●●
f' ●●● ○●●	f'' ●●● ○●●	f''' ●○ ○●○ / ●○ ○●○
f _# ' ●●● ○●○	f _# '' ●●● ○●○	f _# ''' no fingering
g' ●●● ○○(●)	g'' ●●● ○○(●)	g''' ○○● ●●●
g _# ' ●●○ ○○○	g _# '' ●●○ ○○○ / ●●○ ○○○	g _# ''' no fingering
a' ●●○ ○○○	a'' ●●○ ●●●	a''' ○●● ●●●
b _b ' ●○● ●○● / ●●● ○○○	b _b '' ●○● ●●●	
b' ●○○ ○●●	b'' ●○○ ●●●	
c'' ○○● ●●● / ○●○ ○●●	c''' ○○● ●●●	
c _# '' [○○○ ○○●]	c _# ''' ○○○ ○●●	

Chapter 1.2

The Beginnings of the Consort Principle

The idea of making instruments in families and playing them together in sets, or consorts, is ‘one of the hallmarks of the Renaissance’.²⁰ But this principle was not always in evidence. There is ‘no sign’ of the consort principle in the early Middle Ages, as Peter Holman pointed out, and although pictures show instruments in many sizes, these different sizes were unstandardized, and the instruments were mostly played solo.²¹ These are features which are observable for Medieval flutes, and, as it will be shown in the following discussion, particularly for military flutes, not only from their first appearance in the fifteenth century but also throughout their use in later periods.

The term ‘consort’ had multiple meanings in the sixteenth century; it was commonly used to refer to players in a mixed ensemble as well as to describe families of like instruments. Instruments were usually kept together in ‘chests’ or ‘cases’. A mixed ‘chest’ of particularly vast proportions, housing multiple consorts of instruments, is described in the inventory of the Bassano instruments held at the Bavarian Court in Munich:

Verzeichnis der Instrument Truhen, so der Bassani brueder gemacht haben, mit gar schönen un guetten Instrumenten, so für einen yeden grossen Herrn und Potentaten taughlich wern und ist gemelte Truhen Inwendig durchaus mit rottem Tuch gefuetert, und die Instrument volgender gestalt darein geordnet... Alle dise Instrument khan mann in gemldter Truhen allenthaben Hintragen, wo mann will, so wol seind sy Zusammen gericht...und kahn von disen 45 Instrumenten neunerley Musikh gemacht, und volgendts alle miteinander auf dem gemeinem Tonum der Orgel und zusammen gericht werdern.

Inventory of the instrument chest, which the Bassano brothers made, with very beautiful and good instruments, such as will be suitable for every great Lord and potentate, and the said chest is lined inside throughout with red cloth, and the instruments are ordered in the following manner...One can transport all

²⁰ Herbert Myers, ‘The Idea of “Consort” in the Sixteenth Century’, *Musicque de Joye*, ed. David Lasocki (Utrecht, 2005), 31; for a convenient general history of instruments supported by a generous number of pictures, see David Munrow, *Instruments of the Middle Ages and Renaissance* (Oxford, 1976).

²¹ Peter Holman, *Four and Twenty Fiddlers* (Oxford, 1993), 4-5; Holman was the first writer to provide an overview of the beginnings and early development of instrumental consorts, see 1-31.

these instruments everywhere in the said chest, as one desires, as they are arranged together so well...and from these 45 instruments 9 kinds of music can be made, and thus are all tuned together at common organ pitch and are ordered together.²²

Five separate families of instruments were carefully ordered inside the chest, including sets of eight shawms, seven ‘pipes’ (probably also shawms), seven cornetts with one ivory flute, 12 crumhorns, and nine recorders. Although it is unclear what the ‘nine kinds of music’ were exactly, the families of instruments were tuned to play together, probably in both like and mixed groups. Since the term ‘consort’ has become ubiquitous in modern usage to mean a family of like instruments, I will adopt it in my discussions when referring to families of flutes, recorders and instruments.²³

Instruments such as bagpipes, hurdy-gurdies and fiddles made use of drones with which to self-accompany monophonic tunes. But as monophony gave way to polyphony in the late fourteenth and early fifteenth centuries, many instruments followed suit, developing into families of three or four sizes pitched a fifth apart, which enabled instrumentalists to perform vocal polyphony. The earliest polyphonic secular music was most usually composed in three parts of varying distribution of voices, whilst the beginning of the sixteenth century saw a change to four-part writing, with SATB as a standard distribution.

Tracing just when and where the development of instrumental consorts took place prior to 1500 is not an easy task. Almost no instruments survive from before about 1500. Literary, archival and iconographical sources are ambiguous and incomplete, and musical manuscripts – even those with untexted music – do not give information about whether or not instruments were intended to take part.²⁴ But from the few scattered references which do exist, it appears that the consort principle began with shawms. Two sizes of shawm which played as a duo were known by the early 1400s, and were joined by the slide trumpet – later replaced by the trombone – to form the three-part *alta capella* which established itself as the pre-eminent professional consort through-out Europe in the fifteenth century.²⁵ Early fifteenth-century references to polyphony played by the instruments of the *alta capella* include *posaunen* (trombones) playing ‘together in three parts, as one ordinarily sings’ at the Council of Constance of 1416, and a motet played by shawms at the wedding of Charles the Bold in

²² David Lasocki, ‘A Listing of Inventories’, 457-59.

²³ For more on this issue, see Herbert Myers, ‘The Idea of “Consort” in the Sixteenth Century’, 35.

²⁴ Howard Mayer Brown, ‘Instruments’, *Performance Practice: Music Before Sixteen Hundred*, ed. Howard Mayer Brown and Stanley Sadie (New York, 1989), 22-3.

²⁵ For the early history of the *alta capella*, see Keith Polk, ‘Wind Bands of Medieval Flemish Cities’, *BWQ*, 1 (1966), 93-113.

1468.²⁶ Recorders and *douchaines* (soft capped reed instruments with cylindrical bore and a range of nine notes) were made in families by the third quarter of the fifteenth century, followed by crumhorns and bowed strings by about 1500, and the family principle was in full bloom for most instruments by the early sixteenth century.²⁷

Why Was the Transverse Flute Not Developed as a Consort Instrument in the Middle Ages and Early Renaissance?

During a period when other wind instruments were developing into families, flutes not only did not follow this line of development, they disappeared altogether in the early fifteenth century, an enigma remarked upon by Keith Polk, who notes that the flute's disappearance is 'one of the inexplicable mysteries of late Medieval instrumental music'.²⁸ I will attempt a hypothesis to explain the flute's disappearance in the following discussion.

No flutes survive from the Middle Ages, but pictures show that the flute was known and played as far back as the eleventh century. One of the earliest depictions is on an intricately carved ivory casket lid from Byzantium, *ca.* 1000 in the collection of the Victoria and Albert Museum, London, which portrays flute and harp players accompanying dancing. Fourteenth-century pictures from France, Spain and Germany illustrate a single flute of approximately tenor size, used both as a soft instrument in company with fiddles, harps and lutes (bearing in mind that these mixed ensembles probably played monophonically), and as a loud instrument playing in duo with a drum.²⁹ Ill. 1.2.1 provides a typical example of the flute portrayed in company with soft instruments, here a fiddle and singer from the Manesse manuscript. The flute is remarkably similar to the Chinese bamboo *Di* which has the mouth-hole towards the middle of the instrument.³⁰

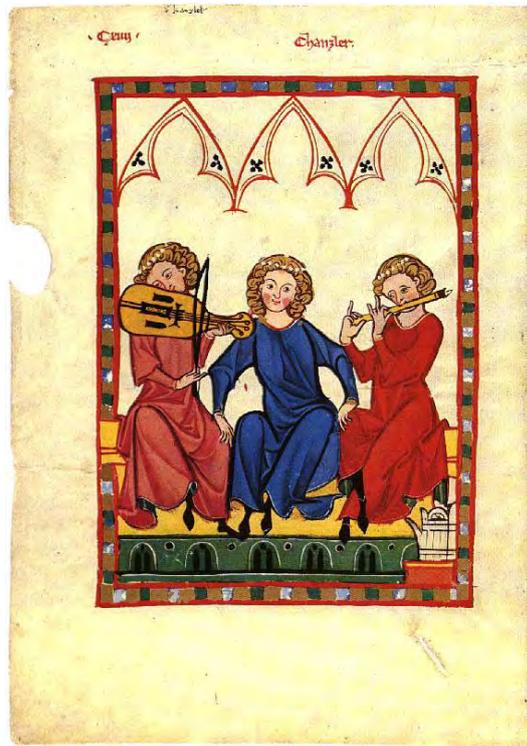
²⁶ Keith Polk, 'Instrumental Music in the Urban Centers of Renaissance Germany', *Early Music History*, 7 (1987), 172-3, and Holman, *Four and Twenty Fiddlers*, 5-6.

²⁷ Inventories and literary descriptions document the early history of instrument families; for flutes and recorders see the entries in Lasocki, 'Inventories'. For a history and definition of the *douchaine* in this period see Howard Mayer Brown, 'Wind-Cap Instruments', *GMO*.

²⁸ Keith Polk, *German Instrumental Music*, 41.

²⁹ For representative pictures *ca.* 1100-1500 see Powell, *The Flute*, 'Shepherds, monks and soldiers', 7-26. For fourteenth-century pictures of the flute with the drum, see Dagmar Hoffman-Axthelm, 'Zu Ikonographie und Bedeutungsgeschichte von Flöte und Trommel in Mittelalter und Renaissance', *BJfHM*, 7 (1983).

³⁰ See T.C. Lai and Robert Mok, *The Jade Flute* (Hong Kong, 1981), 75 for a description and picture of the *Di*, 'An evening of entertainment with Han Hsi-tsai' by Ku Hung-Chung.



Ill. 1.2.1. 'Der Kanzler', flautist, fiddle player and singer, Manesse ms., Germany, ca. 1340.

Another particularly clear illustration of the Medieval flute is from the compendium of instruments in the Spanish *Cantigas De Santa Maria* from the late thirteenth or early fourteenth century; two flute players appear to be playing together, or one is teaching the other. The flautist on the right plays an instrument of light coloured wood, which could be bamboo, and one plays a darker one. Both flutes appear to be made in one cylindrical piece.



Ill. 1.2.2. Two flautists, 'Cantigas de Santa Maria' ms., Madrid, Spain, ca. 1300.

Jane Bowers cites 1411 as the latest fifteenth-century reference to transverse flutes in France.³¹ Two further references to transverse flutes from about this time are also to be noted, both from Spain: an inventory at the court of Aragon in 1410 lists ‘1 alta travessada’ (one long transverse flute),³² and a painting dating from *ca.* 1400 at the church of Santa Maria del Puig, Pollensa depicts angel musicians playing a transverse flute and a *rabab*.³³

A comparison of pictures of Medieval flutes with surviving flutes from the sixteenth century reveals a few basic differences which suggests that Medieval flutes may not have been well suited to playing polyphony, and thus fell out of use. Surviving Renaissance consort flutes are designed with a narrow bore and small finger holes, with a range of nearly three octaves on tenors, and a light and agile tone quality which blends well with other instruments, especially with strings. These flutes are quite different to the pictures of ones which existed from the eleventh to fifteenth centuries. Pictures show Medieval flutes of approximately tenor size to be wider in bore and with larger finger holes than their Renaissance counterparts. These Medieval flutes look similar to the Indian *Bansuri* and Chinese *Di* played today, which are large-bored flutes made of bamboo, with a strong, vibrant tone, a restricted upper range – due to the wide bore – and large finger holes which adversely affect the tuning and tone quality of cross-fingered notes but allow for flexible pitch bending.

Conclusions

Medieval large-bore flutes were probably too coarse in sound, tuning and agility to compete in mixed ensembles of soft instruments or to play complex polyphonic parts in all modes, and with chromatic inflections. Renaissance flutes have a refined sound, with tonal flexibility for nuance and dynamics, and better control over tuning. The two-and-a-half octave range of the tenor – larger than most any other Renaissance wind instrument – makes it able to play soprano, alto and tenor parts (as noted above, flutes always played an octave higher than written). This enabled performance of some polyphonic repertoire for three voices on a ‘consort’ of three tenors. The all-important bass size was necessary for the performance of the ‘standard’ four-voice ensemble of soprano, alto, tenor and bass which became the norm during the first decades of the sixteenth century. But the bass flute in ‘G’ is not in evidence until *ca.* 1520. The obvious physical problems of making and playing bass flutes must have made their development difficult and problematic, and impeded the development of a full consort.

³¹ Jane Bowers, “‘Fläüste Traverseinne’ and “Flute d’Allemagne’’: the Flute in France from the late Middle Ages up through 1702’, *RMFC*, 19 (1979), 14-16, cites transverse flutes in French illuminated manuscripts between 1400 and 1411. See also Howard Mayer Brown, ‘Instruments’, *Performance Practice: Music Before Sixteen Hundred* (New York, 1989), 176-77.

³² David Lasocki, ‘A listing of inventories’, 420.

³³ Reproduced in Ian Woodfield, *The Early History of the Viol* (Cambridge, 1984), 35.

Chapter 1.3

Surviving Renaissance Flutes

Introduction

Accounts of musical events, court records of musicians, music and pictures provide literally hundreds of references to Renaissance flutes and flute makers between about 1506 and 1670. Judging from the documentation, the flute was a common presence in European courts and cities, played by both professionals and amateurs, indoors and out, for chamber music, dancing, processions, ceremonies, and military exercises. However, out of the many hundreds of flutes which must have existed, only around 50 survive in museums and private collections. This means that a large number were discarded. I have no doubt that this was due in part to wear and tear on these fragile sticks of wood, but I believe it was also due to obsolescence. Renaissance flutes, with their one-piece construction, could not be altered in their pitch or tonal quality. The lack of a key made the flute not quite convincingly chromatic (E \flat had to be fingered by half-shading the bottom hole). The tone was light and soft, and the dynamic range was limited, not suited to the new ‘affective’ style emerging in Italy in the seventeenth century. Francesca Poggi, former curator of the musical instruments in the Accademia Filarmonica, Verona, confirmed that when the entire instrument collection of the AFV was offered for sale in 1635, the stringed instruments and keyboards were sold, but no one wanted the marvellous flutes; they remained unsold, and are, fortunately for us, still intact in the collection.¹

Surviving Flutes Identified by Filadelfio Puglisi

The number and whereabouts of surviving originals changes with time; some privately owned ones have changed hands, new instruments have turned up, others are lost or stolen. Filadelfio Puglisi identified 43 surviving flutes in 1988.² His list is reproduced below (Table 1.3.1). He listed only complete instruments and those he considered to be authentic by reasons of historical documentation and makers’ marks – which he called ‘firemarks’ because they are literally burned in to the wood, leaving the mark as a raised shape against the burned out background. Firemarks were and still are extremely troublesome to reproduce and therefore are unlikely to be faked.

¹ Francesca Poggi, pers. comm., May 19, 2006.

² Filadelfio Puglisi, ‘A Survey of Surviving Renaissance Flutes’, *GSJ*, 41 (1988), 67-82.

Puglisi's discussion of these flutes includes their provenance, measurements and defining features. One of the most important things he found is that although the inside bore is essentially cylindrical, almost all the tenors have a narrowing of the external diameter from below the mouth hole to just below the bottom (sixth) finger hole. This tapering allows subtle control over the sound and tuning by the maker. The seventeenth-century Graz flutes (nos. 34, 35) are the exception, with no external tapering, but these may have been made as military flutes.

Puglisi's information is detailed and it is unnecessary to repeat his information. I will make a few general comments about some important features concerning the pitches of these surviving flutes. Surviving flutes include both tenors and basses, with the exception of a single small soprano size which survived until the 1970s but has since disappeared (Brussels no. 1062). The largest group is made up of tenors, 24 flutes. This is not surprising since tenors are the most important size, having been used as both solo and consort instruments and having survived as a solo instrument in the seventeenth century after the flute consort had been abandoned.

Table 1.3.1. Filadelfio Puglisi, 'Checklist of Renaissance Flutes'³

Location	No.	Catalogue No.	Mark	Speaking length (centre of mouthhole mm to bottom)	Provenance
Biblioteca Capitolare, Verona (B.C.V.)	1*	1	Crowned eagle	540	same
	2*	2	!! !!	545	„
	3*	3	!! !!	544	„
	4*	4	C. RAFI	549	„
	5*	5	AA	538	„
	6*	6	AA	540	„
	7*	7	!! !!	816	„
	8*	8	AA	795	„
Accademia Filarmonica, Verona (A.F.V.)	9	13282	f	574	same
	10	13283	f	575	„
	11*	13284	f	575	„
	12	13285	f	576	„
	13	13286	erased	575	„
	14	13287	G. RAFI	640	„
	15	13276	f	855	„
	16	13279	f	851	„
	17*	13277	f	855	„
	18	13278	anonymous	807	„
Museo Civico, Bologna	19	not inventoried	C. RAFI	575	same
	20	not inventoried	B. VASEL	817	„

³ Reproduced from Filadelfio Puglisi, 'A Survey', 79-80.

Table 1.3.1. cont., Filadelfio Puglisi, 'Checklist of Renaissance Flutes'

Location	No.	Catalogue No.	Mark	Speaking length (centre of mouthhole mm to bottom)	Provenance
Conservatorio di Musica, Milano	21	6752	f	854	same
Museo degli Strumenti Musicali, Roma	22	2788	M. RAFI	860	Verona
	23	2789	C. RAFI	577	"
	24	2790	anonymous	573	"
	25	2791	anonymous	573	"
Landesfürstlicheburg Museum, Meran	26*	6857	§	755	same
Musej Muzykalnych Instrumentov Teatra, Muzyki i Kinematografii, Leningrad	27	437			Snoeck collection, Gand
	28	438			
Oberösterreichisches Landes-Museum, Linz	29	Mu3	N	759	Kremsmünster
Kunst-historisches Museum, Vienna	30	185	!! !!	491	Ambras – Innsbruck
	31	186	anonymous	574	Catajo – Padova
	32	187	LISSIEU	526	
	33	GDMF 88	1501 >>	904	Vienna
Landeszeughaus, Graz	34	M1	§	691	same
	35	M2	§	530	"
Musikinstrumentenmuseum, Berlin	36	2663		507	same
Historisches Museum, Basel	37	1907-8	!! !!	542	same
Rosenbaum, New York	38*		IA.NE	764	London
Musée Instrumental, Brussels	39	1062	anonymous	317	Padova-Venice (Correr)
	40	1064	!! !!	573	"
	41	1065	!! !!	570	"
	42	1066	C. RAFI	615	"
	43	2695	H. VITS	848	Snoeck, Gand

Surviving Flutes Identified by Philippe Allain-Dupré

Philippe Allain-Dupré updated Puglisi's list to 'around fifty' in 2004, adding twelve instruments to Puglisi's check-list, but without assigning numbers to them.⁴ I have added 'PAD' numbers to Allain-Dupré's list (Table 1.3.2), to facilitate further discussion. All of these were considered by Puglisi to be problematic, and therefore he did not include them as surviving instruments.

Table 1.3.2. Additional Renaissance flutes identified by Philippe Alain-Dupré

Maker	PAD no.	Location	Stamp	Sounding length (mm)	Remarks by Allain-Dupré
Mahillon	1	B-Brussels: 1093		407	Reproduction of lost fife, Graz
?	2	A-Vienna: SAM 1028	H	418	<i>Schweitzerpfeiff</i> [?], from Schloss Altenklingen
Anon	3	B-Brussels: 1063		429	Descant, g, a'=400 stolen 1978
Anon	4	R-St Petersburg 463		?	'Dum vixi tacui mortua voce cano/1601'
H[urlacher]F	5	D-Nuremberg: MIR 280	pine cone/F.H.	531	2-pt 17 th c. flute, pinecone=Augsburg?
Anon	6	NL-Amsterdam: Rijksmuseum NG NM 7692	~/+	535.5	'Nova Zembra' expedition, 1596 (probably military)
Anon	7	D-Berlin: 5422		566	a'=410, one-piece tenor, ivory
Anon	8	I-Bologna: Museo Civico 1833		626?	Cut in two and shortened
Anon	9	A-Vienna: SAM 207 (was Catajo 218)		720?	a'=430?, Bassanello by Schlosser
Anon	10	I-Verona: Acc. Fil 13280		827?	a'=415?, body only, bass, holes 3, 6 double for rh/lh playing
Bassano?	11	B-Brussels: 1088	!!	853?	a'=410?, headjoint, bass for P40-41
[Rafi]	12	I-Verona: Acc. Fil 13281	Griffin in a shield	964?	a'=360?, body only, bass

⁴ See Philippe Allain-Dupré, 'Renaissance and Early Baroque Flutes: an Update on Surviving Instruments, Pitches and Consort Groupings', *GSJ*, 57 (2004), 53-61.

Several of the flutes identified by Allain-Dupré are of particular interest and warrant further discussion. The three soprano flutes which I have numbered as PAD 1, 2, and 3, are problematic. PAD 1 is not an original, but a copy of a 'lost fife' made by the curator of the Brussels museum, Victor Mahillon. It is a soprano size, with a sounding length of 407 mm (see above), but cannot be considered as a surviving original. PAD 2 is also problematic. It is also a soprano flute, labelled by Allain-Dupré as a *Schweitzerpfeiff*. Originally located at Schloss Altenklingen in Switzerland, it is now in the collection of the Kunsthistorisches Museum, Vienna (SAM 1028). It was discovered clinging to the inside of a case made to hold four flutes, and is in extremely poor condition, paper thin, and full of cracks, really only a partially preserved flute. Its condition makes it an unreliable specimen.⁵

PAD 3 was stolen from the Brussels collection in 1978. Filadelfio Puglisi examined it prior to that date, and pronounced that its 'rough workmanship, absence of a firemark and unplayable condition' did not allow elaboration.⁶

For the St. Petersburg flutes, P-27, P-28 Allain-Dupré records that 'data is missing'; he gives an 'overall measurement' of 600 mm for P-27, and a sounding length of 493 mm for P-28. PAD 4 is probably not a Renaissance flute. The museum's catalog offers the following description of the PAD 4 flute:

Transverse flute with engraved inscription *Dum vixi tacui mortua voce cano/1601*. The instrument is in four joints, of walnut, dark brown colour, richly decorated by carving, inverted conical bore, seven open holes of which one has a closed key, length 61.4 cm.⁷

In spite of the engraved date of '1601', the entry above describes features which can only be associated with Baroque flutes – four joints, inverted conical bore and a single key. It certainly is not a Renaissance flute, and probably dates from much later than 1601, or is a fake, and so it should be deleted from Allain-Dupré's list.

PAD 6, known as the 'Nova Zembla' flute, is described by Allain-Dupré as 'probably military'. It was found during an archeological excavation in 1871 of the remains of the Dutch ship, the 'Jacob van Heemskerke'. The ship and its crew, piloted by the Dutch explorer Willem Barents, were trapped in the ice off the northern tip of the Arctic Russian island of Novaya Zemlya (translated as 'Nova Zembla' in Dutch and English) in 1596, during an expedition to

⁵ Rudolph Tutz, in his unpublished paper given at the Renaissance Flute Days, Basel, Switzerland, 8 September, 2002, described his attempted reconstruction of the flute as being in g' at a=440.

⁶ Puglisi, 'A Survey', 74.

⁷ *ПРОФЕССИОНАЛЬНЫЕ МУЗЫКАЛЬНЫЕ ИНСТРУМЕНТЫ* (Leningrad, 1972), no. 463, 55. Thanks to Andrew Parrott for providing me access to a copy of the catalog and to Alan Lumsden for translating this entry. Allain-Dupré has reproduced the inscription in his remarks, see PAD 4, above.

search for a northeast polar passage across the Kara Sea. Forced to overwinter at Ice Haven, the ship itself was crushed by ice, but in the spring of 1597 the crew refitted one of the ship's boats and made a spectacular 1600-mile journey across ice and open sea to the Kola Peninsula.⁸

The 'Nova Zembla' flute, now in the Rijksmuseum, Amsterdam, was preserved by the Arctic climate in remarkably good condition. It differs from other flutes in several significant respects: it exhibits none of the conical variations on the external bore which are a characteristic feature of most surviving tenors (this may be due to a few hundred years of being deep-frozen). The pitch is D at $a' = 440$, a somewhat higher pitch than most surviving flutes (bearing in mind that the bores of originals have shrunk, causing a rise in pitch, and the freezing conditions would have caused even more drastic shrinkage). According to Ardal Powell, the walls are much thinner, and its finger holes are larger, than other flutes, enabling it to 'play easily both F \sharp and F natural, B natural and B \flat , and its tone is brighter overall' (presumably he is speaking of a modern copy, since the original is broken, not in playing condition).⁹ Most consort flutes favour F natural and B \flat , with F \sharp being significantly flat. A modern copy in my possession, made by Alain Weemaels, suggests that the original was a sophisticated and well-crafted instrument made by a knowledgeable craftsman. The maker's mark, a caret and cross, is otherwise unknown. It is, as Powell suggests, significantly lighter and brighter in tone and response than 'consort flutes', possibly made to be played for dancing or other monophonic entertainment. Allain-Dupré's assertion that this was 'probably a military flute' is not verifiable. The Novaya Zemlya expedition was not a military one but an exploration, and there is no particular reason to ascribe military associations for this flute. Flutes and other instruments were known to be used aboard ships; for example, tabor pipes and drums, a shawm-like instrument (possibly a *doucaine*) and a small fiddle were recovered from Henry VIII's military flagship 'Mary Rose' when it was raised from the Solent in 1982.¹⁰

Four incomplete instruments were included by Allain-Dupré, which I have numbered as PAD 9, 10, 11, 12. Although Puglisi did not include them in his list, these are important to consider. The bass flute PAD 10 has double third and sixth holes. This is the only surviving instrument with double holes. On recorders a double bottom finger hole is quite commonly found on surviving sixteenth-century instruments to allow it to be held with right hand upper-most, or with left hand upper-most. According to the Venetian recorder player and teacher

⁸ For an account, see Barry Lopez, *Arctic Dreams* (New York, 1986/rpt London, 1999), 22-4 and 323-5; Lopez cites the first-hand chronicles of the adventure by Gerrit de Veer, *The True and Perfect Description of Three Voyages, so strange and woonderfull, that the like has never been heard of before...*[1597].

⁹ See Powell, *The Flute*, 48.

¹⁰ The instruments were catalogued by the Mary Rose Trust and are preserved and on display in the Mary Rose Museum, Portsmouth, England; see also the discussion by Frances Palmer, 'The Musical Instruments on the 'Mary Rose'', *EM* 11 (1983), 53-59.

Sylvestro Ganassi, the unused hole was filled with wax. Although it is known from pictures that flutes were played held both to the right and to the left, a change of playing position does not necessitate double holes in the same way it does on the recorder. The double holes on PAD 10 are in a straight line, and are likely there to enable subtle adjustments in the tuning, but the instrument is lacking its head piece, so it is not possible to evaluate it further.

The incomplete ‘Rafi’ bass, PAD 12, AFV 13281, is missing the head joint and reconstructed by Rainer Weber. It is the longest surviving instrument and matches the pitch of the perfectly preserved Rafi tenor P-14 also in the Verona collection (AFV no. 13287), which Puglisi identified as the longest tenor flute surviving, at the extremely low pitch of around $a' = 360/365$. We will never know the precise circumstances of use for such low-pitched flutes.¹¹

We may be able to pinpoint when and where the Rafi flutes were purchased from a document now in the archives of the AFV, which commissioned one of their members to travel to Lyons to buy a pair of flutes in 1546:

Et se redusse la compagnia alli nove marzo 1546 per il comandamento de sopra dove fu proposto de tor un fagoto et una dolzana...Item fu dato commission a Alesandro Priame de mandar a Lion a tor una copia de faifer.¹²

And the company met on 9 March, 1546 for the purpose of discussing the above order and it was proposed to acquire a *fagoto* and a *dolzano*...at the same time Alesandro Priame was commissioned to be sent to Lyons to procure a pair of *faifer* (transverse flutes).

Although the document does not give the name of the Lyonnaise maker, Rafi is likely. The Rafi workshop was highly valued and their instruments were sold throughout Europe at that time. No other Rafi flutes are known to have belonged to the AFV collection, which has remained intact since 1543.

¹¹ Michael Praetorius, *Die Organographia* (1619), 15-16, trans. Blumenfeld (New York, 1962), 16, remarks that wind instruments were ‘formerly’ pitched a minor third below (‘eine tertiam minorem tieffer’) German chamber pitch in England and still in use in the Netherlands, and for full ensembles in some Catholic chapels in Germany and Italy. German chamber pitch *ca.* 1600 has been shown by Bruce Haynes, ‘Pitch Standards in the Baroque and Classical Periods’, Ph.D. diss. (University of Montreal, 1995), 143-46, to be about $a' = 460$; a minor third below is about $a' = 392$, $a' = 360$ is another semi-tone below that.

¹² This document in the Ferrara archives, shelf mark c. 15v., was brought to my attention in 1979 by the curator of musical instruments at the AFV, Dr. Enrico Paganuzzi; it is also cited by Allain-Dupré, *Rafi* (Courlay, 2000), 59.

Dating of Original Flutes

The simple one-piece construction of surviving tenors renders most originals quite uniform in appearance, and pictures do not distinguish any unusual characteristics. There are a few dated references to makers which give some valuable clues. In 1535 Sylvestro Ganassi illustrated recorders with the ‘trefoil’ and single Gothic ‘A’ maker’s marks.¹³ These marks are also found on some flutes.

A unique mark ‘1501/A’ is stamped on a one-piece boxwood bass now in Vienna (Gesellschaft der Musikfreunde No. 88); the interpretation of this mark is controversial. The ‘A’ mark seems to have been used by members of the Nuremberg family of wind makers, the Schnitzers.¹⁴ William Waterhouse documented the use of the ‘A’ mark by various members of the Schnitzer family during the later sixteenth century, but he also proved that the mark was appropriated illegally by other makers.¹⁵

Some writers have suggested that the number is a date. If so, the maker would have to have been the eldest member of the family, Albrecht Schnitzer (fl. 1490-1525), since his son Hans, the next known maker to have used the ‘A’ sign, was not born until 1506. Several factors mitigate against the mark as a date. If it was made in 1501, it pre-dates the documentable presence of bass flutes by some twenty years (see Ch. 2.2 and 3.2 for my arguments that the earliest evidence for bass flutes is *ca.* 1520). Furthermore, it is highly unusual for wind instruments to have date marks – no other flutes have such a mark.

Basses are more varied in appearance than tenors due to the two-piece construction which allows for some design features on the joint between the head and the body. Reinforcement rings are necessary on basses owing to the strain placed on the joint from the opposing pressure of the player’s lips and the outward pushing of the lower hand. The reinforcement rings on surviving basses are made of metal, horn, or turned wood.

Several instruments identified by Puglisi include various raised designs and turnings on the reinforced joints between the head and the body (see Ill. 1.3.1). These turnings may well represent a small measure of experimentation, and are the only concessions to an ‘individual’ approach to the design of Renaissance flutes, which Puglisi believes points to a seventeenth-century style of flute-making.¹⁶ The turnings on P29 are the most refined, and somewhat akin to the ‘furniture-leg’ style turnings on three-piece flutes known to come from the late-seventeenth-century workshop of the Hotteterre family of flute makers, who were also furniture

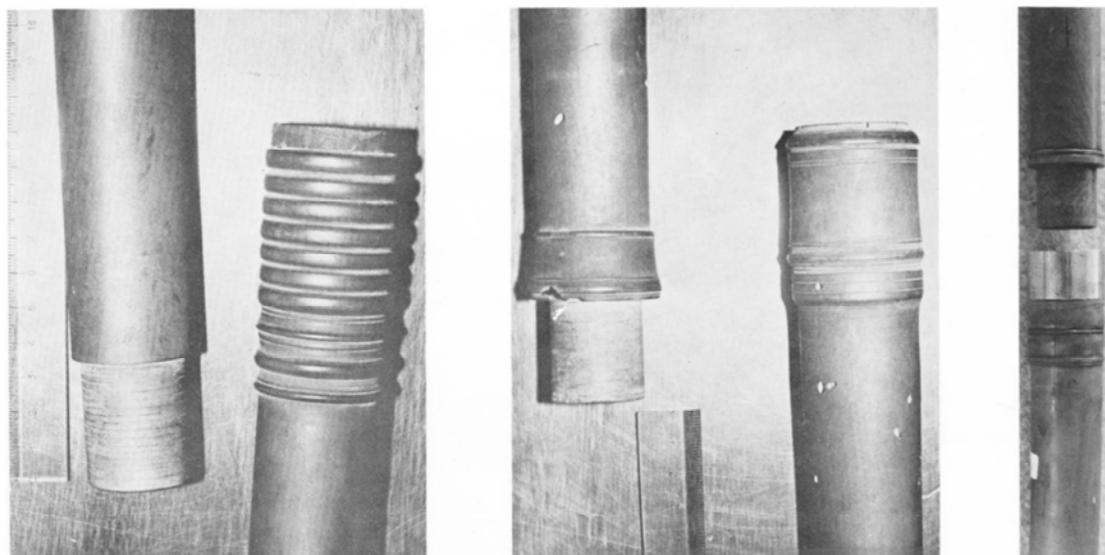
¹³ Ganassi’s illustrations are reproduced in *Il Fontegara*, ed. Hildemarie Peter (Berlin, 1959), 94.

¹⁴ Ekkehart Nickel, *Der Holzblasinstrumentenbau in der Freien Reichsstadt Nuremberg* (Munich, 1971), 56; Boaz Berney, ‘Renaissance Transverse Flutes’, 64.

¹⁵ William Waterhouse, *The New Langwill Index: A Dictionary of Musical Wind Instrument Makers and Inventors* (London, 1993), 359-60.

¹⁶ Filadelfio Puglisi, ‘A Survey of Renaissance Flutes’, *GSI*, 41 (1988), 75-6 and Plate XIV.

makers by trade (see the Hotteterre flute, Ill. 1.1.1). A systematic survey of the earliest Baroque flutes and a comparison to the turnings on Renaissance basses might reveal more critical data and enable a more precise dating of basses.



Ill. 1.3.1. Bass flutes P7, P8, P29, showing the raised turnings on the head-joints.

Inventories provide some data on the dates and number of instruments in individual collections. Flutes were often present in vast quantities – some were probably military or ceremonial flutes, others were identified as consort flutes, which would have been used in chamber music and in chapels. David Lasocki's listing of instrument inventories provides references to literally hundreds of flutes in sixteenth century inventories.¹⁷ A sampling of several important collections includes the following flutes: Henry VIII, 1547, London, 74 flutes; Raymund Fugger, junior, 1566, Augsburg, 40 flutes; Accademia Filarmonica, 1569, Verona, 17 flutes; Baden-Württemberg court, 1589, Stuttgart, over 200 flutes.

The majority of flutes are described as belonging together in cases, and are grouped together in inventories by type of wood, or by pitch. It is the factor of pitch which surely accounts for such large numbers of flutes in some collections. Chapel, chamber and ceremonial pitches were not compatible, and changed over time, and because flutes were made in one piece their pitch could not be altered. This necessitated entirely separate consorts of flutes for every change of pitch. Evidence for this comes from a contract made between Jacomo Bassano and three musicians of the Doge of Venice in 1559 for *phifari tenor de tutti toni* (tenor flutes at all the pitches) and *phifari bassi de tutti i toni* (bass flutes at all the pitches). The 1589 inventory

¹⁷ Flutes in all the known European inventories are listed in David Lasocki, 'A Listing of Inventories' (Utrecht, 2005), 419-512.

of the Baden-Württemberg court at Stuttgart lists, amongst hundreds of *zwerchpfeiffen*, the following:¹⁸

- ‘A case of four boxwood flutes, three tenors and a bass, made in Antwerp; they are not in *Chorton*, but rather a tone lower.’
- ‘A case of three tenor flutes and a bass...which are not in *Chorton*, but a tone higher.’

Pitches of Surviving Flutes

An assessment of the pitch of Renaissance flutes is a fairly reliable operation, because tenors are made in one piece, therefore the original pitch cannot be altered easily. It must be borne in mind, however, that exact original pitches of surviving flutes cannot be described entirely accurately, because they may vary according to bore shrinkage and other time-related factors. Another factor which causes pitch assessment to fluctuate is room temperature – players know this from the experience of playing in cold churches, which causes flutes to play flat. Puglisi has made some calculations to represent the differences in principle, and found that temperature can alter the pitch by as much as a semi-tone (noting that breath temperature invalidates his figures for actual experiments). For example, a pitch calibrated at $a' = 440$ at a room temperature of 20 centigrade is $a' = 430$ at a temperature of 10 centigrade and $a' = 460$ at a temperature of 47 centigrade).¹⁹

An approximate idea of the pitches of surviving flutes can be determined by measuring the sounding lengths. This is because the simple, cylindrical bore, which is extremely consistent on surviving originals, allows calculation of the proportion between pitch and sounding length. Filadelfio Puglisi first identified the function of the sounding length (measured from the cork just above the mouth hole to the bottom end of the flute) as a more reliable way of determining the pitch of Renaissance flutes than simple measurement of its length.²⁰

Puglisi measured forty-three surviving tenor and bass flutes, and found that these demonstrate an almost continuous succession of sizes from about two feet to just over three feet

¹⁸ David Lasocki, ‘A Listing of Inventories’ (Utrecht, 2005), 450-51, 475-77.

¹⁹ This data is from unpublished material made available to me by Filadelfio Puglisi in 1987.

²⁰ Filadelfio Puglisi, ‘A Survey of Renaissance Flutes’, 67-82. Boaz Berney calculated pitches around $a' = 460$ for six flutes which do not survive, which he based solely on the measurements of the tubes in a surviving case; see his contribution to Herbert Myers with Boaz Berney and Adrian Brown, ‘An Important Case Study: The Augsburg *Futteral*’, *Musicque de Joye*, ed. David Lasocki (Utrecht, 2005), 518-9. As Puglisi and Dupré have illustrated in their more scientifically based studies, measuring the total length is an unreliable way of determining pitches of transverse flutes.

(soprano flutes were not included, because data is unreliable for incomplete or damaged instruments).²¹ Puglisi pointed out that it is necessary to consider where ‘tenors’ end and ‘basses’ begin – an instrument can be called a tenor if a playable bass flute can be constructed a fifth below it (see discussion above). He cited the tenor flute no. 13287 in AFV as the longest tenor in existence, related to the AFV bass no. 13281, which is unfortunately missing its head joint. It has been restored by Rainer Weber.²² This bass is the longest flute reachable by human hands. The Merano flute (Museo Civico no. 6857), on the other hand, must be considered a bass. It could not be a tenor, since an instrument a fifth below it would have to have a speaking length of about four feet – impossible to play.

Although the flute lengths given in Puglisi’s chart seem to be in a random and continuous progression, two pitch ‘clusters’ are determinable, with a striking predominance of tenors and basses at $\pm a' = 410$ for twelve tenors (out of the surviving 24) and six basses (of the surviving 19), and a second group at $\pm a' = 430$ for six tenors and three basses.²³

Puglisi’s study, along with Philippe Allain-Dupré’s update of Puglisi’s data, and especially Allain-Dupré’s brilliant study on proportions of Renaissance flutes, provide the foundation of our present knowledge about pitches and measurements of original instruments.²⁴ Allain-Dupré concurs with Puglisi that calculating the pitch from the length of the complete tube is not a reliable approach, and he cites the problem which arises from the variation in the distance between the lowest tone hole and the end of the flute amongst flutes playing at the same (average) pitch (for evidence of this, see graph below).²⁵

A detailed chart of pitches was made by Philippe Allain-Dupré (reproduced as Table 1.3.4) which gives the sounding lengths and estimated pitches of all the surviving tenor flutes thus far identified (not including so-called ‘military’ ones). He has shown that the calculation of pitch in relationship to sounding length is possible for any Renaissance tenor flute through

²¹ His chart and pitch calculations are in Puglisi, ‘A Survey’, 71.

²² See Rainer Weber, ‘Die Instrumentensammlung der Accademia Filarmonica in Verona und Probleme ihrer Restaurierung’, *Tibia* 6, no. 2 (1981), 313-19.

²³ Puglisi, ‘A Survey’, 71; the two pitch clusters are identified as percentages of surviving originals by Boaz Berney, ‘Renaissance Transverse Flutes: A Re-examination of the Surviving Instruments’ *Musicque de Joye*, ed. David Lasocki (Utrecht, 2005), 68. Berney assigns a pitch of $a' = 408$ to the lower ones (38%), but maintains $a' = 430$ for the higher (20%).

²⁴ Philippe Allain-Dupré, ‘Renaissance and Early Baroque Flutes: an Update on Surviving Instruments, Pitches and Consort Groupings’, *GSI*, 57 (2004), 53-62; Philippe Alain-Dupré, ‘Proportions of Renaissance Tenor Flutes and the Relationship of Verona Flutes to Foot-Length Standards’, *GSI*, 59 (2006), 21-27.

²⁵ Philippe Alain-Dupré, ‘Proportions’, 22-3.

the use of a non-linear equation used by physicists to calculate the pitch of cylindrical pipes.²⁶ A close idea of the original pitch can therefore be estimated even if an instrument is incomplete or unplayable.

The two pitch clusters identified for flutes are related to standard pitch centres for other Renaissance wind and stringed instruments. Bruce Haynes defined the pitch around $a' = 405$ to 413 as *tuono chorista*, which was the common standard throughout Europe for use in church with singers, and the pitch of mute cornetts.²⁷ It was a tone lower than the standard pitch for instrumental music, *mezzo punto*, around $a' = 460$ to 470. Most surviving curved cornetts and recorders are at this high pitch, and a few flutes also. The middle pitch and the second most common for surviving flutes, around $a' = 430$ to 435, was *tutto punto*. This pitch can be identified on some surviving Italian organs.

Diverging pitches came about because it was not always the practice for all kinds of instruments to play together. Praetorius describes this state of affairs, and the difficulties it posed:

At the outset it is to be made clear that the pitch of organs and other musical instruments frequently varies widely. This is because in earlier times it was not the practise to play all kinds of instruments together in ensemble, and thus instrument makers built wind instruments quite differently, tuning some high and others low; for certain instruments, such as the cornett, shawm and discant violin sound fresher and better when constructed to a higher pitch, while trombones, bassoons, bassanelli, bumbardes and bass viols sound the more grave and splendid the lower they are pitched. Thus considerable difficulty is caused the director of music when organs, harpsichords and wind instruments are not tuned to the same pitch.²⁸

²⁶ The numerical formulae are fully explained by Allain-Dupré, who in turn acknowledges his indebtedness to the graphs given by Peter Spohr, *Transverse Flutes Down the Centuries from all over the World* (Frankfurt, 1991), 85.

²⁷ For a thorough and ground-breaking study of these Renaissance pitch centres, see Bruce Haynes, *A History of Performing Pitch: The Story of A* (Lanham, Md, 2002); pitch data on flutes is in Appendix 3; see also Bruce Haynes, 'Pitch Standards in the Baroque and Classical Periods' Ph. D. diss. (University of Montreal, 1995); discussion of Renaissance flute pitches is in Appendix 3-1, 429-33; his research is valuable for its thoroughness and definition of the multitude of pitches in use during the Renaissance and Baroque periods, but unfortunately both sources contain numerous mistakes regarding the pitches of flutes, and are at variance with both Puglisi's and Allain-Dupré's findings.

²⁸ For the original German, see Michael Praetorius, *SM II* (1619), 14-15; trans. Harold Blumenfeld (New York, 1962), 14.

Flutes at $a' = 410$ may have been required to transpose up a tone on occasion to play with instruments at $a' = 460$.²⁹ This has given rise to the idea proposed by some modern writers of considering flutes to be pitched in C (for tenors) and F (for basses).³⁰ This idea is at variance with all of the early instruction books, which uniformly consider the lowest notes to be d' for tenors and g for basses.

Makers' Marks and Workshops

Makers' marks can point to a family name or workshop, and a rough time-period. But these marks are not always present and the dates of known makers' workshops are not always precisely known. Some workshops continued after the death of a maker, or the marks were taken over by other makers, as in the case of the Schnitzer 'A' mark discussed above.

There are not many marks found amongst the surviving Renaissance flutes. Puglisi identified three kinds of firemarks: symbols, letters or monograms, and full or abridged names.³¹ The ones found on extant original flutes are identified in Table 1.3.3.

²⁹ Herbert Myers, 'Renaissance flute', *A Performer's Guide to Renaissance Music*, ed. Jeffrey Kite-Powell (New York, 1994), 61, suggests that flute parts must 'usually be transposed up a tone', but this probably overstates the practice.

³⁰ Rainer Weber, 'Some Researches into Pitch in the Sixteenth Century with Particular Reference to the Instruments in the Accademia Filarmonica, Verona', *GSJ*, 28 (1975), 8-9; and Bernard Thomas, 'The Renaissance Flute', *EM*, 3 (1975), 7.

³¹ Puglisi, 'A Survey' (1988), 70.

Table 1.3.3. Makers' marks on surviving flutes

Makers' Mark	Flute (P and PAD numbers)
Symbols:	
!!	(AD 11)
!! !!	(P 2, 3, 7, 30, 37, 40, 41)
\$	(P 26, 34, 35)
^/+	(A-D 6)
♣	(P 9-13, 15-17, 21)
lv	(P29)
Griffin in a shield	(PAD 12)
Crowned eagle	(P1)
Letters or monograms:	
H	(PAD 2)
A or AA	(P 5, 6, 8, 25,
F.H./pinecone	(PAD 5)
IA.NE./6-point star	(P8)
1501/A	(P33)
Names:	
H. VITS	(P43)
B. VASEL	(P20)
C. RAFI	(P4, 19, 23, 42, PAD 12)
G. (?) RAFI	(P14)
M. RAFI	(P22)
LISSIEV	(P32)

Through common firemarks it is possible to identify 'families' of flutes. Valuable data on these marks collected by William Waterhouse, Maggie Kilbey and David Lasocki makes it possible to speculate about dates and places of origin for some surviving flutes.³² Surviving

³² William Waterhouse, *The New Langwill Index: A Dictionary of Musical Wind Instrument Makers and Inventors* (London, 1993); David Lasocki with Roger Prior, *The Bassanos: Venetian Musicians and*

flutes made at different pitches from the same makers' workshops indicate that some flutes were made to order at whatever pitch was needed for a particular situation or combination of instruments.

Only makers whose names appear as part of the firemark can be named with a degree of certainty. These include the nine instruments listed above: Rafi (for which there are several variant firemarks), Vits, Vasel and Lissieu. For those instruments known only by symbols or monograms, it is preferable to identify flutes by these marks, rather than to make assumptions, often ill-founded, about the names or exact provenance of the makers.

Rafi

The Rafi marks identify members of a flute and recorder making workshop that was responsible for a number of especially beautiful surviving instruments. The different RAFI marks identified above indicate that the Rafi were a family of makers – Georges Tricou has shown that the name spelled variously Rafi, Rapy, Raffin, Raphin, Rapin, or Ruffin was fairly common in Lyons in the sixteenth century.³³ The Rafi workshop, father and sons, from which some of the most beautiful instruments come, is known to have been building flutes between 1506-1553.

Michaud Rafi first appears in the city archives in 1506 as a *fleuster* (this term can also mean 'recorder'; the Rafi workshop is known to have made both instruments). Michaud's son Claude is first listed, as both *joueur de fluste* and *fleusteur* in 1515. There was a third son, Pierre (fl. 1528-9), about whom nothing more is known.³⁴ After Michaud's death in 1524 Claude maintained the workshop; he died in 1553, after which the workshop was closed down. Assuming that no other makers by the name of Rafi come to light, we can date the surviving Rafi flutes between *ca.* 1506-1553.

Eleven instruments from the Rafi workshop survive, four recorders and seven flutes.³⁵ These must represent only a fraction of their output, given that the workshop was in existence for nearly fifty years. Of the seven surviving flutes, those signed with 'C Rafi' (P 4, 14, 19, 23, 42 and A-D 12) presumably were made by Claude. The bass flute in Rome, P22, signed 'M RAFI' is one of the oldest extant flutes, if it was indeed made by Michaud.

Instrument makers in England, 1531-1665 (Aldershot, 1995); Maggie Kilbey, 'A Check-list of Woodwind Instruments Marked !!', *GSI*, 52 (1999), 243-80.

³³ G. Tricou, 'Claude Rafi, Fleustier Lyonnais', *La Revue Musicale de Lyon* (1903), 56.

³⁴ see Georges Tricou, 'Claude Rafi, Fleustier', *Documents sur la musique à Lyon au XVIe siècle* (Lyons, 1899/RGeneva, 1974), 43-48.

³⁵ Documented in Filadelfio Puglisi, 'The Renaissance Flutes of the Biblioteca Capitolare of Verona', *GSI*, 32 (1979), 36-7; Philippe Allain-Dupré, *Rafi*, 58-61, and Allain-Dupré, 'Renaissance and Early Baroque Flutes, and Update on Surviving Instruments', *GSI*, 47 (2004), 54-5.

Their instruments are identifiable from the Rafi name stamped into the wood, over a shield with a lion rampant – the lion may refer to the city of Lyons. Several different initials and symbols precede the name Rafi:

C♣ RAFI – three tenor flutes (1066 Brussels, 3288 Bologna and 4 BCV)

C. . RAFI – one tenor flute (713 Rome), one tenor and one basset recorder (10 and 11 Bologna)

G • RAFI³⁶ – one tenor flute (13287 AFV) and the lower joint of a matching bass (AFV 13281); the makers' mark on the bass joint is only the shield with a lion; found also two unusual cylindrical tenor recorders (100 Eisenach and 318 Schloss Sigmaringen)

M • RAFI – bass flute (712 Rome) in one piece

Rafi flutes and recorders were highly prized by collectors well into the seventeenth century. The Italian nobleman Manfredo Settala (1600-80) published a detailed catalogue of his instrument collection in 1666, including flutes made by 'the illustrious craftsman, G Rafi'.³⁷

Trefoil, or Three-Leaf Clover

Nine instruments are preserved with the trefoil mark (P 9-13, 15-17, 21), eight of these remain in the AFV. These flutes have been attributed by Boaz Berney to the Rauch family of makers, of south German origin.³⁸ This identification is not wholly verifiable, however. Friederich von Huene has shown that there are two distinct kinds of trefoil mark, one with left stem and thin leaves (found on the flutes) and the other right stem and thick leaves (on some recorders), which he believes belong to different makers.³⁹ Marcello Castellani believes that the flutes with this mark which are included in the inventories dating from *ca.* 1570-1600 of the AFV are of Veronese origin.⁴⁰ Filadelfio Puglisi has determined that the trefoil flutes in BCV are of

³⁶ Identified as 'G' by Marcello Castellani, 'Two Late-Renaissance Transverse Flutes', *GSI*, 25 (1972), 79, and Filadelfio Puglisi, 'The Renaissance Flutes', 26; Philippe Alain-Dupré, *Rafi*, 62, believes this mark can also be interpreted as 'CI'.

³⁷ Filadelfio Puglisi erroneously assumes from Settala's catalogue that Rafi flutes were still being made in the seventeenth century; see Filadelfio Puglisi, 'Signor Settala's "armonia di flauti"', *EM*, 9 (1981), 320-324. On Settala's collection, see Nancy Hadden, 'Some Observations on Pitch: Settala's Flutes', *Renaissance Flute Circle Newsletter* 2, no. 2 (May 1989), 5-7; and Maurice Byrne, 'Instruments by Claude Rafi in the Collection of Manfredo Settala', *GSI*, 18 (1965), 26-7.

³⁸ Boaz Berney, 'Renaissance Transverse Flutes', 63.

³⁹ Friedrich Von Huene, 'Makers' Marks from Renaissance and Baroque Woodwinds', *GSI*, 27 (1974), 35 shows the two different kinds of trefoil.

⁴⁰ Marcello Castellani, 'Two Late-Renaissance Transverse Flutes', 73-9.

seventeenth century origin. We are left with inconclusive evidence about the provenance of these flutes.

‘!! !!’

David Lasocki has argued convincingly that instruments with the double rabbit’s foot marks ‘!! !!’ belong to the Bassano workshop – whether made in their Venetian workshop or after members of the family moved to London.⁴¹ English court records show that five members of the Bassano family arrived in London from Venice in 1540.⁴² Members of the English Bassano dynasty were famous throughout Europe for making wind instruments of the highest quality, many of which were exported from England to European courts, including a chest of 45 different wind instrument consorts which was made for the Bavarian Court at Munich in 1571 (see quote, Ch.1.2).

The ‘!! !!’ flutes acquired by the BCV in 1631 (P2, 3, 7) include two tenors and a bass pitched at $a' = 430$; presumably they were made as a set. Other flutes marked !! !! are P30, pitch $a' = 470$, P40-41, pitch $a' = 405$, and P37, pitch $a' = 430$.

‘A’ and ‘AA’

The single and double ‘A’ marks have been associated with the workshop of Schnitzer, an extended family of Nuremberg makers beginning with Albrecht *ca.* 1500.⁴³ The workshop was maintained by his sons throughout the sixteenth century. The problematic one-piece bass in Vienna (P33), uniquely stamped ‘1501/A’, is already discussed above. ‘AA’ is stamped on two tenors and a bass now in the BCV (P 5,6 and 8) which may have been made as a set, since they are both in maple, at the same pitch of $a' = 430$; Puglisi believes they are of early seventeenth-century origin.⁴⁴ Another instrument with the mark ‘A’ (P25) is one of two leather-covered tenors in Rome, at a pitch of $a' = 405$; no other flutes are covered with leather, and nothing is known of their provenance. Perhaps the leather was intended to protect the thin wooden tube. This is suggested by a payment notice for the hire of musicians during the celebrations of St.

⁴¹ David Lasocki, ‘The Anglo-Venetian Bassano Family as Instrument Makers and Repairers’, *GSJ*, 38 (1985), 112-32, and ‘The Bassano’s Maker’s Mark Revisited’, *GSJ*, 66 (1993), 114-19.

⁴² See David Lasocki ‘The Anglo-Venetian Bassano Family’, 120-2; Peter Holman, *Four and Twenty Fiddlers*, 38-40, 120.

⁴³ See Ekkehart Nickel, *Der Holzblasinstrumentenbau*, 56.

⁴⁴ Filadelfio Puglisi, *I flauti traversi rinascimentale in Italia* (Florence, 1988), 17, suggests this date, based on archival evidence for the acquisition of the flutes by the Biblioteca Capitolare in 1631.

Michael in Paris, 24 August, 1569, which promised to hire cornets and violins in good weather, or transverse flutes and trombones if it rained.⁴⁵

Lissieu

P32 carries the maker's stamp, 'LISSIEV', a maker about whom little is known – not even his first name. The only contemporary reference to him is by Charles-Emmanuel Borjon in 1672, who refers to 'le sieur Lissieux', as having been established at Lyons for some years.⁴⁶ Lissieu (1625-1695) worked at the court of Louis XIV; several of his musettes survive. The only surviving flute made by Lissieu is noteworthy for being made in two pieces, with 'Baroque' turnings at the joint and foot (Ill. 1.3.2).⁴⁷



Ill. 1.3.2. Copy of the Lissieu flute by Filadelfio Puglisi⁴⁸

Jane Bowers dates the Lissieu flute from the third quarter of the seventeenth century, calling it a 'transitional instrument'. However, because of the cylindrical bore and absence of keywork, I would define it as a Renaissance flute, in spite of Baroque external features. It is thus the latest Renaissance-type flute extant, made well after the introduction at the French court of the Baroque one-keyed flute. It plays at a high pitch of $a' = 460+$, more than a minor third higher than $a' = 392$ – the pitch of most surviving late-seventeenth-century French Baroque flutes. Bruce Haynes documented the low pitch as *ton de chambre*, while the high pitch in France was *ton d'Ecurie*, belonging to the instruments of the Grand Ecurie (including violins, *hautbois*, *fiffres Suisse*, hunting horns and the like) which were used for hunting, ceremonies and military exercises.⁴⁹ The high-pitched Lissieu flute may therefore have been made for the *fiffres Suisse* of the Ecurie perhaps to be used as a loud outdoor instrument (for more on the use of flutes in the Ecurie see Ch. 3.3).

⁴⁵ François Lesure, 'La facture instrumentale à Paris au seizième siècle', *GSI*, 7 (1954), 28.

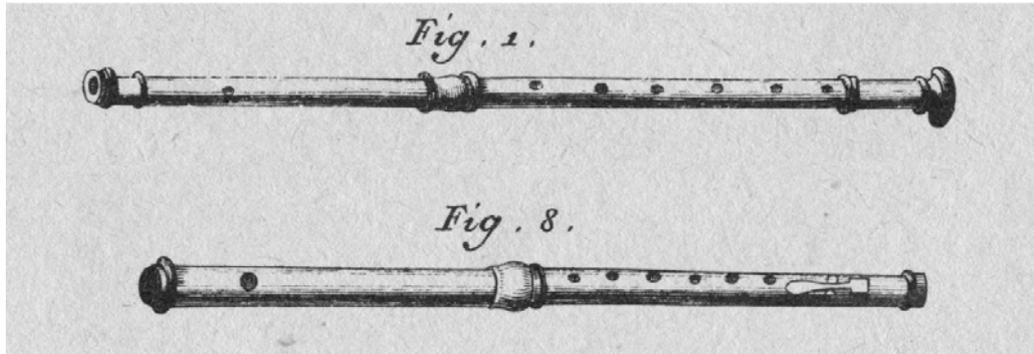
⁴⁶ Charles-Emmanuel Borjon, *Traite de la musette* (Lyons, 1672), 6.

⁴⁷ Michael Praetorius, *SM, II* (1619), trans. Blumenfeld (New York, 1962), 34-5, suggested a two-piece construction for recorders and 'dulceflutes' (transverse recorders).

⁴⁸ <http://www.renaissanceflute.com/lissieu.html>.

⁴⁹ Bruce Haynes, *A History of Performing Pitch: The Story of A* (Lanham, Md, 2002), 123.

Eighteenth-century drawings from Denis Diderot's *Encyclopedie* offer further documentation that flutes of both types existed side by side and had different roles: in Ill. 1.3.3 below, a flute nearly identical to the Lissieu flute is identified as *Fifre Suisse* (fig. 1), and is clearly distinguished from a three-piece one-keyed Baroque flute identified as *dessus de flûte traversiere* (fig. 8).⁵⁰



Ill. 1.3.3. Diderot, *Encyclopedie*, fig. 1, 'Fifre Suisse'; and fig. 8, 'dessus de flûte traversiere'.

Conclusions

In spite of the careful measuring and preservation of surviving instruments, our understanding of original flutes is limited. Old instruments are rare, fragile and often not in playable (or measurable) condition. Museums generally do not allow instruments to be played, even those which are in good condition. Musicians, historians and flute players suffer from this strangely unenlightened approach, where musical instruments are locked in glass cases and have no voice at all. Even the collection of the AFV, for many years exceptional in allowing careful playing of all the instruments, has succumbed to this 'no playing' policy; since 2007 the instruments are no longer allowed to be played (I was extremely lucky to have played all of them in 1979, 1988 and 2006).

A cynical view might be that modern copies of museum originals have no hope of being exact reproductions. In spite of good makers' best intentions, the wood, the workshop conditions, tools, oils and virtually all aspects of making are different, and all we can hope to achieve is a good modern instrument modelled closely on originals, which plays well but is not identically copied from any original.

⁵⁰ The drawings of instruments from Denis Diderot's *Encyclopédie* were compiled over a number of years during the mid-eighteenth century; an anonymous – and unacknowledged – set of these drawings was collected together and translated by Helen Tullberg, *The Manufacture of Musical Instruments* (Chippenham, Wiltshire, 1975); Ill. 1.3.3 has been reproduced from p. 198 of Tullberg's book.

There is a more positive way of thinking about this, which is that in some respects faithful modern copies may be closer in condition to the surviving original instruments when they were new than the originals themselves now are. This may be explained by the fact that often original flutes have been over-played, or subjected to hundreds of years of neglectful storage, causing the bore to be warped, rough, or eaten by woodworm, or with the holes undercut or rounded by tools or use. Good modern copies are made of new and properly cured wood, the edges of finger and embouchure holes are sharp, clean and new, the bore is cylindrical, clean and not warped; these features may mean that a well-made modern copy may be closer in sound, feel and response to that of an instrument newly made in the sixteenth century.

Table 1.3.4. Philippe Allain-Dupré, graph of tenor flute pitches, giving sounding lengths and total lengths.

	Flute and location <i>(hypothetical flutes which are not historical data are shown in Italics)</i>	Stamp	Sounding length (mm) SL=	Total length (mm) TL=	Ratio TL/SL	CV=312	CV=313	CV=314
						Estimated Pitch (Hz) a'=	Estimated Pitch (Hz) a'=	Estimated Pitch (Hz) a'=
	A-Vienna: SAM 174 (was A185)	!!!	491	577	1.18	477	478	480(BB)
	R-St Petersburg: 438 ex Snoeck		493	578	1.17	475	476	478
Cornet- Thon or Mezzo punto	A-Vienna: SAM 176 (was C187)	LISSIEV	505	601	1.19	463	465	466
	D-Berlin: 2663 ex Snoeck		511	609	1.19	458	459	461
	R-St Petersburg 437 ex Snoeck		513	600	1.17	456	458	459
	<i>Mersenne, Harmonie Universelle (1636)</i>		522	605	1.16	448	450	451
440 Hz	<i>Modern prototype</i>		530			442(PAD)	443	444
	NL-Amsterdam: Rijksmuseum NG NM 7692	^/+	535.5	638.5	1.19	437	438	440
Chor Thon + 1/2 ton or tutto punto	I-Verona: Biblioteca Capitolare 5	AA	538.5	630	1.17	435	436	437
	I-Verona: Biblioteca Capitolare 6	AA	540	628	1.16	433	435	436
	I-Verona: Biblioteca Capitolare 1	crowned eagle	540	629	1.16	433	435	436
	I-Verona: Biblioteca Capitolare 3	!!!	544.5	631	1.16	430	431	433
	I-Verona: Biblioteca Capitolare 2	!!!	545.5	632.5	1.16	429	430	432
	CH-Basel: HM 1907.1980	!!!	547	645	1.18	428	429	431
	I-Verona: Biblioteca Capitolare 4	C.RAFI	549	648	1.18	426	428	429
Tenor/alt in d' at Chor Thon or Tuono Corista (one tone below Cornet Thon)	D-Berlin: 5422		566	650	1.15	413	415	416
	B-Brussels: 1065	!!!	569	664	1.17	411	413(DL)	414
	B-Brussels: 1064	!!!	572	664	1.17	409	410	412
	I-Rome: Museo dSM 0715 (was 2791)	A or AA	573	660.5	1.15	408	410	411
	I-Rome: Museo dSM 0714 (was 2790)		573.5	670.5	1.17	408	409	411
	A-Vienna: SAM 175 was C[atajo] 186		573.5	671.5	1.17	408	409	411
	I-Verona: Acc. Filarmonica 13282	trefoil	574.5	658.5	1.15	407	409	410
	I-Verona: Acc. Filarmonica 13283	trefoil	575	684	1.19	407	408	410
	I-Verona: Acc. Filarmonica 13284	trefoil	575	683	1.19	407(PAD)	408	410
	I-Verona: Acc. Filarmonica 13285	trefoil	575	684	1.19	407(PAD)	408	410
	I-Verona: Acc. Filarmonica 13286	trefoil	575	684	1.19	407	408	410
	I-Bologna: Museo Civico 3288	C.RAFI	576	682.5	1.18	406(PAD)	408	409
	I-Rome: Museo dSM 0712 (was 2789)	C.RAFI	577	688	1.19	406	407	408
Deeper pitches	<i>Modern prototype in d at 392</i>		600			390	391	393
	B-Brussels 1066	C.RAFI	612	717	1.17	382(PAD)	384	385
	<i>Praetorius, Syntagma Musicum pl.IX</i>		630			371	373	374
	I-Verona: Acc. Filarmonica 13287	[CI?]RAFI	640.5	734.5	1.15	365	367	368

Chapter 1.4

Names for the Renaissance Transverse Flute

The various names by which the flute was known in the Renaissance are a cause of some confusion today. There was no standard name for the transverse flute, even within a single country. Modern parlance favours ‘Renaissance flute’, which is something of a misnomer, for reasons which will be discussed below. It is, however, the name by which the instrument is best known. For the purposes of this thesis I will use the terms ‘Renaissance flute’, ‘transverse flute’ or simply ‘flute’, for general discussion. Clarification will be given when necessary, for example, in discussions of the multiple names and instrument types in Swiss, German, French, Italian and other European sources, and to differentiate the transverse flute from the end-blown flute, not always differentiated in Renaissance sources. The end-blown flute was often called simply ‘flute’ in Renaissance Germany, France and Italy. The term ‘flute’ was also a collective noun for both types of flute, especially in France. In England, the end-blown ‘flute’ was called ‘recorder’ in the sixteenth century but changed to ‘flute’ in the late seventeenth century, after the arrival of the Baroque flute *ca.* 1680, which was known in England from the end-blown flute still used today – ‘recorder’. The ‘Baroque flute’ will always refer to the one-keyed instrument developed *ca.* 1670. These terms are sufficient to distinguish all types of instruments, both transverse and end-blown.

The cylindrical keyless transverse flute was in use during the Middle Ages and up to (and probably well into) the eighteenth century, by which time the one-keyed Baroque flute was established in art music, and the keyless flute was used solely as a military or ‘folk’ instrument. The term ‘Renaissance flute’, therefore, must take into account not only the instrument but also the period of music in which it was played. It is sometimes called ‘Renaissance traverso’ by modern writers but this is a rather odd conflation. The Italian term *flauto traverso* is found in eighteenth-century Italian, English and German usage; in the sixteenth century the feminine form *traversa* is found, but never *traverso* on its own (see the listings under ‘transverse flute’, p. 51-4 below). The earliest use I have found of the masculine form of the adjective *traverso* without the noun *flauto* is from the eighteenth-century German sonatas by Johannes Mattheson (Hamburg, 1720), *Der brauchbare Virtuoso... auf der Flute traversiere*, where each individual sonata has the heading ‘violino overo traverso’.¹

¹ See Nancy Hadden, ‘In Search of the Sound of a *fiffara*’, *Musicque de Joye*, ed. David Lasocki (Utrecht, 2005), 187.

All the names by which the flute was known in the fifteenth and sixteenth centuries will be considered in the discussion which follows, in an effort to trace historical and linguistic paths and differences and to establish some routes and links in the history of its use.

I have identified five of the most common terms for the Renaissance transverse flute in the sixteenth century as ‘flute’, ‘transverse flute’, ‘pipe’, ‘Swiss flute’ and ‘German flute’ in Table 1.4.1, which gives the modern English names in the left-hand column and the related terms in other languages, to facilitate comparison.

One more term, *zufolo*, needs to be mentioned here, which should not be counted among the terms to describe transverse flutes. It is a generic word, which, according to several late-sixteenth century and early seventeenth-century sources meant any whistle or pipe, and in Italy was commonly the name for the three-holed pipe.²

Table 1.4.1. Five of the most common names for the transverse flute

Name	German	French	Italian	English	Other
Pipe	<i>pfeiff</i>	<i>phiffre</i>	<i>fiffaro,</i> <i>fifola</i>	<i>phyphe</i>	-- --
Flute	<i>flöte</i> <i>flette</i>	<i>fleuste</i>	<i>flauto</i> (=recorder)	flute	-- --
Transverse Flute	<i>zwerchpfeiff</i> <i>querpfeiff</i>	<i>traverseinne</i>	<i>traversa</i>	-- --	<i>travessada</i> (Sp) <i>dwars-fluit</i> (Dutch)
Swiss flute	<i>Schweitzer-</i> <i>pfeiff</i>	<i>phiffre Suisse</i> <i>fiffre Suisse</i>	-- --	-- --	-- --
German flute	-- --	<i>fleuste allemant</i> <i>flûte allemande</i>	<i>flauto</i> <i>d’alemagna</i>	<i>Flute</i> <i>d’Almagne</i> (not before 1700)	<i>flauta, pifano</i> <i>alemania</i> (Sp)

² See Graham Strahle, *An Early Music Dictionary: Musical Terms from British Sources, 1500-1740* (Cambridge, 1995), 418: ‘Zuffolo’: 1598, Florio, Italian, ‘zuffo’ a whistle, pipe; ‘zuffolare’, to whistle, pipe. Florio, 1611: ‘zuffolo’, any whistle or pipe. Ardal Powell, *The Flute*, 30, describes the *zufolo* as a fife, citing documents dating from 1468 relating to Italian military instruments, but military flutes did not make their way into Italy until *ca.* 1500 during the Italian campaigns of Charles VIII. Gianni Lazzari, ‘L’uso militare del flauto a tre buchi e tamburo’, *SIFTS*, 3,1 (1998), 15-32, has shown the Italian military *zufolo* to be a three-holed pipe played with a small drum.

Following are all the known names for the transverse flute, and a short description of the geographical areas of use.

Schwegel

The term *Schwegel* was attached to both transverse flutes and to three-hole pipes. Early literary references to *Schwegel* are numerous, but they are also often vague. It is not possible to identify which instrument is meant, for example, in Hugo von Trimberg's epic poem, 'Der Renner', ca. 1300, where *Swegeln* appear along with other musical instruments such as harps, fiddles and shawms:

Herpfen, rotten und geigen
 Wil süsse andaht, zuht und sweigen,
 Urleuge wil toben und schrien,
 Buden, swegeln, und schalmien.³

Sebastian Virdung, on the other hand, leaves no doubt about the instrument he refers to as *Schwegel* in his instruction book for instruments, *MG* (Basel, 1511).⁴ He illustrates a three-hole pipe, labelled *Schwegel*, along with a transverse flute, labelled *Zwerchpfeiff* (see Ill. 3.1.2 below). Both instruments were played with a drum, which may be one reason for the same terminology being used interchangeably. The three-hole pipe and drum were played simultaneously by the same player, which helps to distinguish it from the flute players and drummers listed as separate players in some sources.

The earliest-known source which identifies a transverse flute as *Schwegel* is the twelfth-century manuscript *Hortus Deliciarum*, compiled by the Benedictine Abbess Herrad von Landsberg of Hohenburg Sainte-Odile in Alsace. Sirens playing a transverse flute and a

³ Hugo von Trimberg, 'Der Renner', ca. 1300, l. 5914-7; this and other early literary etymologies of *Schwegel* are identified in Jacob Grimm, *Deutsches Wörterbuch* (http://germazope.uni-trier.de:8080/Projekte/WBB2009/DWB/wbgui_py?lemid=GA00001). Thanks to Dr. Stephen Rose for pointing out this reference source. In the discussion following, and in my table of names for the flute (Table 1.4.1), I have included only references to *Schwegel* which refer without any doubt to the transverse flute; I have not included the numerous vague literary references such as those identified in Jacob Grimm's *Wörterbuch*.

⁴ Beth Bullard, *Musica getutsch: a Treatise on Musical Instruments (1511) by Sebastian Virdung*, (Cambridge and New York, 1993); for Virdung's *Schwegel* see p. 180.

harp are illustrated.⁵ The term given for the flute in the text is the German-Gothic word *swegel*, derived from the word *tibia* which translates as ‘shin bone’.

The city of Basel engaged *schwegel* players and drummers (separate players) for town processions and festive occasions as early as 1374. The Augsburg city records of 1514 list players of *swögelpfeiffen* and *trummenschlahern* (a similar reference in the same source, but from 1506, lists *pfeiffen* and *trummenschlahern*).⁶ Arnt von Aich calls for consorts of *schwegelen und fletten* (flutes and recorders) on the title page of his *Hubscher lieder*, a collection of German songs in four parts, published anonymously and without a date in Cologne ca. 1519; some pieces had already appeared in Augsburg sources around 1510.⁷ *Schwegel* was the term used to describe transverse flutes in Bavarian and Swiss inventory sources from Augsburg, Nuremberg, Bern and Munich in the 1540s and as late as 1571.⁸ Other references are in Table 1.3.1. The term *Schwegel* seems to have been peculiar to Switzerland and Bavaria. It is still used today in parts of Switzerland and Austria to describe the wooden transverse flute played there.

‘Flute’

The most basic term, ‘flute’, is encountered in all languages and in many different spellings: *fleit, flette, flöte* in German, *fleuste, flûte* in French, *flauto* in Italian. English sources used only the simple term ‘flute’ to distinguish the transverse flute from the end-blown flute, which they called *recorder*, a specific term unique to English usage and still in use today. The term ‘flute’ and its European equivalents will be encountered throughout the following chapters. These are the most ambiguous, since they were freely applied not only to the transverse flute, but also to the end-blown flute, and it is not always easy to decide which instrument is meant. Unqualified

⁵ Reproduced in Raymond Meylan, *The Flute* (London, 1988), 44. The Herrad manuscript was destroyed by fire in Strasbourg in 1870, but copies of the illustrations were preserved in Albert Marignan, *Étude sur le manuscrit de l’Hortus deliciarum* (Strasbourg, 1910; rpt. 1977); see also Rosalie Green, ed., *Hortus deliciarum/Herrad of Hohenbourg* (London, 1979). Both sirens and flutes have long been symbols of lasciviousness and seduction.

⁶ Augsburg ms. BB, fol. 26’ and fol. 24’, is cited in Keith Polk, *German Instrumental Music*, 255, as one of the richest sources of documentation of city and court musicians in southern Germany.

⁷ RISM [1519]⁵; a facsimile edition is published by Bernt Becker (Cologne, 1997). For a modern edition with preface and critical notes see Hans Joachim Moser and Eduard Bernoulli, eds., *Das Liederbuch des Arnt von Aich* (Kassel, 1930). Moser cites the Augsburg concordances. See Ch. 3.2 below for further discussion of the music.

⁸ David Lasocki, ‘A Listing of Inventories’, *Musicque de Joye*, ed. David Lasocki (Utrecht, 2005), 433, 458. *Schwegel* was also the term used to describe the three-hole pipe by Sebastian Virdung, *Musica getutscht* (Basel, 1511).

references to ‘flute’ in sources in northern European inventories from the fifteenth century usually – but by no means always – meant the end-blown instrument.⁹ A ‘flute’ in the company of drums, found from about 1470 onwards, most likely is the transverse flute. The royal *privilege* granted to the Parisian publisher Pierre Attaignant in 1531 authorized him to print music for ‘lutes, flutes and organs’. The general term *fleustes* in French sources referred to both recorders and transverse flutes. Attaignant published *Chansons à deux, chose delectable aux fleustes* in 1535 (now lost).¹⁰ But his two books of four-part chansons published in 1533 differentiate clearly between those for recorders as *fleustes a neuf trous* and those for transverse flutes as *fleustes allemant* (see Ch. 3.3 for discussion of these collections).

‘Transverse Flute’

The adjective ‘transverse’ is an unequivocal indication that the instrument intended was the cross-blown flute and not the end-blown flute. The earliest use of the term was in thirteenth- and fourteenth-century France, Flanders and Burgundy; *flahute traversaine* (also *flaüiste traverseinne* and *fleute traverseinne*) distinguished the transverse flute from the recorder, called simply *flahut*, *flaüiste* or *fleute*. For example, the French poet-musician Guillaume de Machaut (d. 1377) clearly differentiated the two instruments in his narrative poem *La Prise d’Alexandrie*:

...tabours, flaüistes traverseinnes,	Drums, transverse flutes,
Demi doussainnes et flaüistes,	Soft shawms and flutes,
Dont droit joues quant tu flaüistes ... ¹¹	which are played straight when you flute...

A similar distinction is found in the lament on Machaut’s death written by Eustache Deschamps (d. 1406), set to music by F. Andrieu:

⁹ Keith Polk, ‘The Recorder in Fifteenth-century Consorts’, *Musicque de Joye*, ed. David Lasocki (Utrecht, 2005), 17 and 25-6, identified some late fifteenth-century northern European inventories which used the term *fleuste* ambiguously, probably including both flutes and recorders, but it is now impossible to distinguish which is which; early sixteenth-century court and city records from Paris and Lyons used the term *flûte* interchangeably to mean the transverse flute or recorder.

¹⁰ Daniel Hertz, *Pierre Attaignant, Royal Printer of Music* (Berkeley, 1969), #67, 279, reproduced a facsimile of the original advertisement for this collection from Conrad Gesner, *Pandectarum* (Zurich, 1548), fol. 85.

¹¹ Guillaume de Machaut, *La Prise d’Alexandrie*, ed. M.I. de Mas Latrie (Geneva, 1877), lines 1157-59, quoted in Jane Bowers, ‘The French Flute School from 1700-1760’, Ph. D. diss. (University of California, Berkeley, 1971), 2-4.

...Rubebes, leuths, vielles, symphonie,	Rebecs, lutes, fiddles, symphony,
Psalterions, trestous instrumens coys,	Psaltery, and all the instruments,
Rothes, guiterne, flaustes, chalemie,	Rotas, guiterne, recorders, shawm,
Traversaines, et vous, nymphes de boys...	transverse flutes, and you wood- nymphs...
Et le choro n'y ait nul qui replique,	And in chorus
Faictes devoir plourez, gentils Galois,	Weep, gentle Gauls,
La mort Machaut le noble <i>rhetoriquer</i> . ¹²	The death of Machaut, noble <i>rhetoriquer</i> .

Here the flute was grouped with other soft instruments, but the flute was also grouped with loud instruments. Machaut listed the flute with the drum in his *Prise d'Alexandrie* and the artist Jehan de Grise depicted flutes outdoors playing with drums; thus it seems clear that late fourteenth-century France knew the flute as both a loud outdoor instrument and a soft indoor instrument.

Strangely, the brilliantly straightforward term *traverseinne* is not encountered again in France after the fourteenth century, but it was taken up in German speaking lands from early in the sixteenth century as *zwerchpfeiff* or *querpfeiff*, literally 'cross-flute'.¹³ The Italians used *traversa* from about 1530.

'Pipe' and 'Fife'

The German term *Pfeiffer* is 'one of those troublesome words that can be both specific and general', according to Keith Polk, who pointed out that it often referred to a shawm player, and by the fifteenth century, to professional players who played a variety of wind instruments (and when employed by German cities, were called *Stadtpfeiffer*).¹⁴ The term *Pfeiff* is a similarly vague word meaning 'pipe' which can refer to any wind instrument, but sometimes was used for the transverse flute, just as a 'fiddler' can be a player of almost any instrument in sixteenth-century English. The English equivalents *fife*, *pype* or *phyfe*, the French *phiffre* or *fiffre* and the Italian *fiffaro* and *piffaro* had the same meaning and were interchangeable, whether spelled

¹² Marquis de Queux de Saint-Hilaire, ed., *Oeuvres complètes de Eustache Deschamps*, 1 (Paris, 1878), 245-46. Andrieu's ballade, *Armes, amours/O flour des flours*, is in *French Secular Compositions of the Fourteenth Century*, ed. Willi Apel, *Corpus Mensurabilis Musicae*, 44/1 (Paris, 1970).

¹³ Virdung used 'zwerchpfeiff', in *MG* (1511); Agricola, *MID* (1529) used 'querpfeiffe'.

¹⁴ Keith Polk, 'The Trombone, the Slide Trumpet, and the Ensemble Tradition of the Early Renaissance', *EM*, 17 (1989), 389-97; Polk documents the term 'stadtpfeiffer', first encountered about 1350, and in general use by about 1380.

with initial letters ‘f’, ‘p’ or ‘ph’ – no difference of meaning should be inferred.¹⁵ Often a prefix was added to the basic German word *Pfeiff*: *Schweitzerpfeiff* (Swiss flute), *Querpfeiff* (cross flute), *Zwerchpfeiff* (transverse flute) as a more specific way of identifying the transverse flute.

The use of the terms *fife* and *flute* in their various languages were also interchangeable, suggesting that there was no fundamental difference between the instruments.¹⁶ The terms are not in themselves enough to distinguish a difference between military and civilian instruments in the sixteenth century, as some modern writers and instrument makers have suggested. The term ‘fife’ occurs first in a French description of 1489, where *tambourins, fifres et trompettes* played at a wedding feast. In 1510, Maximilian I’s chief flautist Antony of Dornstadt called himself *Pfeiffer*. But William Byrd labels a section of his keyboard piece ‘The Battle’ (*Lady Nevells Book*, 1591), based on military signals, as ‘the flute and the droome’. French sources regularly exchanged the terms *fleuste* and *fiffre* for instruments of both the chamber and the military *Ecurie* (see Ch. 2.3 and 3.3).

The Italian *piffaro*, *fiffaro* and *fiffara* are found in sources from the sixteenth and seventeenth centuries. *Piffaro* in its general sense could mean a shawm, but all three terms are found in north Italian inventories most definitely referring to transverse flutes.¹⁷ In the *Vespers* of 1610, Claudio Monteverdi labelled the first flute part *fifaro* and the second flute part *pifaro*; from the range and musical context it is clear that both parts were meant for transverse flutes.¹⁸ Monteverdi’s concerted madrigal *A quest’olmo* (Book Seven, 1619) is scored for five singers, two violins and two flutes or recorders labelled *flautino o fifara*. The German composer Heinrich Schütz labelled the flute parts *fiffari* in his sacred motet, *Anima mea liquefacta est*, published in his Venetian *Symphoniae Sacrae* I (1629). It is scored for two tenor voices, two

¹⁵ This interchangeability of ‘f’, ‘p’ and ‘ph’ is found today in Indo-European languages. Christopher Welch, *Six Lectures on the Recorder* (London, 1911/Rpt ed. Edgar Hunt, 1961), 232, lists further English variant spellings, also see Graham Strahle, *An Early Music Dictionary, Musical Terms from British Sources, 1500-1740* (Cambridge, 1995), 146.

¹⁶ Also noted by Jane Bowers, ‘“Fläüste traverseinne”’, 18-19, and Herbert Myers, ‘The Idea of “Consort”’, 52.

¹⁷ See examples cited by Filadelfio Puglisi, ‘The Renaissance Flutes of the Biblioteca Capitolare of Verona: the Structure of a ‘Pifaro’, *GSJ*, 32 (1979), 24-37, and Marcello Castellani, ‘A 1593 Veronese Inventory’, *GSJ*, 25 (1973), 15-24.

¹⁸ See Nancy Hadden ‘The Renaissance Flute in the Seventeenth Century’, *From Renaissance to Baroque*, eds. Jo Wainwright and Peter Holman (Hampshire, 2005), 121, and Jeffrey Kurtzman, *The Monteverdi Vespers of 1610: Music, Context, Performance* (Oxford, 1999), 417-18.

fiffari and basso continuo.¹⁹ A number of surviving sixteenth-century Italian organs were made with a *fiffara* stop which imitated the sound of the transverse flute.²⁰

‘Swiss Flute’

In France the *Phiffre Suisse*, Swiss players of flutes in the French army of Charles VIII, were first recorded in 1489.²¹ French references to Swiss flutes were common in court and military records thereafter. The German equivalent *Schweitzerpfeiff* (Swiss flute), was first used in the German treatise *Musica instrumentalis deudsch* written by the theorist and music teacher Martin Agricola, published in 1529.²² Agricola’s choice of the term ‘Swiss flute’ in the context of a German method book for teaching schoolboys and amateurs is curious, but a probable explanation lies in the origins of the flute’s earliest use and dissemination in Germany by Swiss soldiers. Michael Praetorius, writing nearly one hundred years later, in 1614, distinguished a pair of soprano and tenor *Schweitzerpfeiffen* as separate from consort flutes, which he labels *Querpfeiffen*. Poland and Bohemia also adopted the term ‘Swiss flute’ (for examples, see p. 51). The flute and drum duo associated with Swiss mercenary soldiers has given rise to the term ‘Swiss pair’ by Keith Polk; the term is not found in early sources, but is an apt and useful one.²³ I will use the term ‘Swiss pair’ as a convenient way of identifying this military duo in further discussions of the military flute and drum.

‘German Flute’

Flutes designated as ‘German’ are documented in French chapel performances as early as 1504, for example, in court chapel records of Philip the Fair in Burgundy, where ‘certaines joueurs de flutes alemans’ are recorded.²⁴ There is no further evidence of exactly what their role was, and the reference to ‘flutes’ is ambiguous. It may be read as ‘certain German players

¹⁹ The flute parts have the alternative suggestion of *cornettini*. Bruce Dickey has recorded and documented the use of *cornetti muti* for this piece, see *Quel Lascivissimo Cornetto*, Bruce Dickey, cornett, with Doron Sherwin, cornett, and Tragicomedia (Accent 10073, 2007).

²⁰ See Nancy Hadden, ‘In Search of the Sound of a *fiffara*’, *Musicque de Joye* (Utrecht, 2005), 195-8.

²¹ Bowers, ‘“Fläüste traverseinne”’, 18, cites the 1489 reference as the earliest use of the term *fifre* in France.

²² Martin Agricola, *MID* (1545).

²³ Keith Polk, *German Instrumental Music of the Late Middle Ages*, 41, 75, 102. In a personal communication, Polk made no claim for having invented the term, but he is the first to use it in scholarly writing.

²⁴ See Georges Van Doorslaer, ‘La chapelle musicale de Philippe le Beau’, *Revue belge d’archéologie et d’histoire de l’art*, 4 (1934), 41; Keith Polk, ‘The Recorder in Fifteenth-century Consorts’, 25.

of flutes' (= recorders ?), or 'players of German flutes', a more likely meaning for *flutes alemans*. The term 'German flute' must have begun as a direct reference to its early association with German and Swiss soldiers, who introduced the instrument at the French court in 1489.

In 1514 the first unambiguous description of an instrument called 'German flute' appeared in France as *fleuste dallemant*, in the inventory of Charlotte d'Albret (see Ch. 3.3 for full discussion of this inventory). The term remained in common use in France well into the eighteenth century, and was used briefly in northern Italy (*flauti alemagni*) when the transverse flute was first introduced to the courts of Ferrara and Florence, *ca.* 1529. Not until the 1680s did the English adopt the 'continental' term 'German flute', from which time the recorder became known in England as a 'flute'.²⁵

The variations in terminology are bewildering and confusing. In Switzerland the flute was never called a 'Swiss flute', but a *schwegel*, *zwerchpfeiff* or simply *flette*. In Germany, it was never a 'German flute'. Such apparent linguistic anomalies can be viewed as perfectly normal (in the same way, what we call a 'Danish pastry' is known as 'Vienna bread' in Scandinavia, or the particular sausage known only outside of Germany is called a 'frankfurter'). John Florio's international dictionary, *World of Words*, first published in 1598, confirms an overlap of terms in the following entries:

<i>Pifara</i>	a flute, a pipe, a fife, a recorder
<i>Piferoni</i>	all manner of great winde instruments, also musitions
<i>Fifara</i>	as <i>Pifara</i>
<i>Flauto</i>	a flute, a player upon a flute ²⁶

²⁵The two earliest English sources to use the term 'German flute' are James Talbot's manuscript, compiled *ca.* 1685-1701, and John Eccles, *The Judgement of Paris*, 1701; see Nancy Hadden, 'The German Flute in Eighteenth-Century England', *Early Music Performer*, 7 (October 2000), 9-11.

²⁶ John Florio, *World of Words* (1598); Florio's definitions also show the interchangeable use of both 'p' and 'f' as the initial letter; see also Graham Strahle, *An Early Music Dictionary, Musical Terms from British Sources, 1500-1740* (Cambridge, 1995), 146.

Table 1.4.2. Names of transverse flutes

Name	Date	Place	Description/original source ²⁷
Schwegel			
<i>Swegel</i>	12th c.	Alsace	<i>Hortus Deliciarum</i>
<i>Schwegelen</i>	1512/19	Augsburg/Cologne	Arnt von Aich, <i>Hübscher lieder</i>
<i>Swögelpfeiffen und trummenschlahern</i>	1514	Augsburg	Manuscript BB, f. 26' (city accounts)
<i>Schwegel</i>	ca. 1519	Germany	Arnt von Aich <i>Liederbuch</i> (Augsburg/Cologne)
<i>Schwegeln</i>	1540	Augsburg	Inventory of the city instruments
<i>Schwägeln</i>	1541	Bern	City accounts of the <i>stettpfeiffen</i>
<i>Schwegl</i>	1571	Munich	Bassano instruments, inventory belonging to Jakob Fugger, superintendent of music at the Bavarian court
<i>Schwegel</i>	16th c.	Germany, Switzerland	Organ pipes
<i>Schwegelpfeifen</i>	1609	Hechingen	Inventory of the <i>Kapelle</i>
Pipe/Fife (= transverse flute)			
<i>Piffaro/Pifferi</i>	15th c	Italy	Lorenzo de Medici, 5 pifferi
<i>Pfeiffen und trummenschlahern</i>	1506	Augsburg	Manuscript BB, f. 24' (city accounts)
<i>Flotenpfeiffen</i>	1508-12	Nuremberg	Payment to '8 flotenpfeiffen unsern <i>statpfeiffen</i> '
<i>Pfeiff</i>	ca. 1510		<i>Triumphzug</i> , Maximilian I
<i>phayfer da sonar da campo</i>	1543	Verona	Accademia Incatenata
<i>Piffre</i>	1544	Paris	Inventory of Mathurin de la Noue, <i>facteur, fleustier</i>
<i>fiffari, fifarj da Campo</i>	1544	Verona	Joint inventory, Accademia Incatena and AFV
<i>Fiffaro</i>	1544	Italy	AFV inventory
<i>Faifer</i>	1546	Verona	AFV order to Lyons

²⁷ For complete references of inventories, city accounts and payment records, see David Lasocki, 'A Listing of Inventories', *Musicque de Joye*, ed. David Lasocki (Utrecht, 2005), 419-512. For other obvious references from literature, music, or treatises, I have kept entries concise here; most are referred to elsewhere in the relevant chapters of this thesis.

Name	Date	Place	Description/original source
<i>Fifola</i>	1546/74	Rome	G. Cardan, manuscript, <i>De Musica</i>
<i>Phiphes</i>	1547	London Westminster	Inventory, Henry VIII
<i>Fife</i>	1547	London Westminster	Inventory, Henry VIII
<i>faifer</i>	1548	Verona	AFV instrument purchase
<i>Pifferi</i>	1548	Italy	With 2 drums, Swiss Guard Vatican inventory records
<i>Fiffari</i>	1548	Italy	AFV instrument purchase
<i>Fiffari</i>	1557	Venice	Inventory of Natale Tromboni
<i>phifari</i>	1559	Venice	Contract between Jacomo Bassano and 3 pifferi of the Doge
<i>faifer/fifari</i>	1559	Verona	Inventory, Accademia alla Vittoria
<i>fye (and drum)</i>	1561	London Temple	Banquet for Queen Elizabeth I
<i>Fifari</i>	1562	Verona	AFV inventory
<i>Pfeiffen (veldt Pfeiffer)</i>	1566	Augsburg	Fugger inventory
<i>fiffari da Campo</i>	1569	Verona	AFV inventory
<i>Feldtpfeiffen und Velltdrumeln</i>	1578	Graz	Steiermärkisches Landeszeughaus inventory
<i>Feldtpfeiffen</i>	1578-83	Graz	Landeszeughaus payment records
<i>Feldpfeiffen</i>	1578-83	Austria	Graz Landeszeughaus payment records
<i>fiffari, fiffarino</i>	1580	Verona	AFV inventory
	1585	Italy	AFV inventory
<i>fifaro/pifaro</i>	1610	Venice	Monteverdi Vespers
<i>fifaro</i>	1619	Italy	Monteverdi madrigal, book VII, 'Ah quest'olmo'
<i>fiffara</i>	16th c.	Italy, Austria	Organ pipes with tremolo
<i>fiffaro</i>	1629	Venice	Heinrich Schutz 'Anima mea'
		Germany	Praetorius 'Er hantuns, Herr'
<i>Fifferi</i>	1585	Verona	AFV inventory
<i>fiffari</i>	1592	Genoa	Inventory of instruments ordered by the Senate of the city
<i>piffari</i>	1593	Verona	AFV inventory
<i>pfeiffen</i>	1594	Graz	Landeszeughaus, inventory of cases

Name	Date	Place	Description/original source
<i>fifola</i>	1620	Milan	Francesco Rognoni, <i>Selva di varii passaggii</i>
<i>fiffaro</i>	1628	Verona	AFV inventory
<i>fiffaro</i>	1629	Venice	Heinrich Schütz, <i>Anima mea liquefacta est</i>
<i>pfeiffen</i>	1629	Graz	Landeszeughaus inventory
Swiss flute			
<i>Phiffres Suisses</i>	1489	France	King Charles VIII hires Swiss flutes for his army
?? <i>Swiss pair</i>	1513-14	Mechelen	Inventory, Stadsarchiv, Stadsrekeningen, f. 221v.
<i>Schweitzerpfeiff</i>	1529	Wittenburg	Agricola, <i>Musica instrumentalis deudsch</i>
<i>Schweitzerpfeiff</i>	1545	Wittenburg	Agricola, <i>Musica instrumentalis deudsch</i>
<i>Fistulis Helvetianis</i>	1547	Vilnius, Poland	purchase from Nuremberg
<i>Schweitzerpfeiff</i>	1570	Weimar	Hofkapelle inventory, 'Alte schweitzerpfeiffen'
<i>Schweitzerpfeiff</i>	1577	Krakow, Poland	Augsburg merchant, Jacob Ellendi Augustani, inventory
<i>Piszczalek szwajcarskich</i>	1599	Krakow, Poland	Krakow, city inventory, (Swiss Pipes)
<i>Schweitzerpfeiff</i>	1619	Wolfenbittel	Praetorius, <i>Syntagma musicum</i>
Transverse flute/flute			
<i>flahutes traversaines</i>	ca. 1285	France	Adenet le Roi, <i>Cleomades</i>
<i>flaüstes traversiennes</i>	1369	France	Guillaume de Machaut, <i>La Prise d'Alexandrie</i>
<i>flahutes traversaines</i>	1377	France	Eustache Deschamps, lament on the death of Machaut
<i>flautes alta travessada</i>	1410	Aragon	Court inventory, E: Bc, ms.971
<i>flotes (=recorders?)</i>	1492	London court	Henry VII, one of the 'shakbusshes' played 'flotes'
<i>flute</i>	ca. 1500	Florence	carnival song, 'Lanzi'
<i>zwerchpfeiff</i>	1511	Basel	Virdung, <i>Musica getutscht</i>
<i>querpfeiff</i>	1529	Wittenburg	Agricola, <i>Musica instrumentalis deudsch</i>
<i>Flette</i>	ca. 1536	Switzerland	Johannes Frisius fingering chart
<i>zwerchpfeiff</i>	1544	Germany	Georg Forster song books

Name	Date	Place	Description/original source
<i>zwerchpfeiff</i>	1538	Nuremberg	Maathes Schnitzer workshop inventory
<i>querpfeifen</i>	1538	Leipzig	City inventory, <i>Stadtpeifer</i>
<i>zwerchpfeiffen</i>	1539	Nuremberg	City council order to Schnitzer for instruments
<i>traversa</i>	1539	Florence	1539 <i>Intermedii, Chi ne la tolt' oime</i> by Corteccia
<i>fluyte(s)</i>	1540	London	New court flute consort a3 formed at court of Henry VIII, replaced rebecs
<i>zwerchpfeiffen</i>	1540	Augsburg	Inventory of the city instruments
<i>zwergpfeiffen</i>	1541	Nuremberg	Letter from Neuschel (maker) to Duke Albrecht for order of instruments
<i>flutes</i>	1542	London Westminster	Inventory of goods of Henry VIII
<i>querpfeiff</i>	1545	Wittenburg	Agricola, <i>Musica instrumentalis deudsch</i>
<i>flutes</i>	1547	Windsor	Inventory of estate of Henry VIII
<i>traversa</i>	1548	Florence and Lyons	Wedding of Catherine de Medici and Henry II
<i>querpfeifen</i>	1555	Leipzig	City inventory of instruments
<i>traversa</i>	1564	Florence	Inventory of the Duke, Wardrobe
<i>zwerchpfeiffen</i>	1566	Augsburg	Inventory of Raymund Fugger, junior
<i>flutes</i>	1573	City of London	May Day, the town waites and the Quene's
<i>zwerchpfeiffen</i>	1573	Wolfenbüttel	Letter, Duke Heinrich Julius to monastery
<i>flauti traversi</i>	1573	Siena	Palace inventory
<i>traversa</i>	1574	Florence	Gran Duke Cosimo de Medici inventory
<i>zwerchpfeiffen</i>	1575	Nuremberg	Martin Pauman, <i>stadtpeiffer</i>
<i>zwerchpfeiffen</i>	1576	Stuttgart	Baden-Württemberg Court inventory
<i>zwerchpfeiffen</i>	1577	Graz	Kunstammer Karl von Steiermark, inventory
<i>zwerchpfeiff</i>	1578	Strasbourg	Tobias Stimmer, woodcut and verses
<i>zwerchpfeiffen</i>	1581	Stuttgart	Baden-Württemberg Court inventory

Name	Date	Place	Description/original source
<i>zwerchpfeiffen</i>	1582	Karlsruhe	Baden-Baden Hofkapelle inventory
<i>qwehrpfeiffen</i>	1582	Berlin	Kurbrandenburgische Hofkapelle inventory
<i>flute</i>	1583	Kenilworth Castle	Inventory of the Earl of Leicester's possessions
<i>zwerchpfeiffen</i>	1583	Weikersheim	Count of Hohenlohe inventory
<i>dwerpypen</i>	1585	Bremen	<i>Stadtpfeifer</i> instrument inventory
<i>flute</i>	1587	London	Christ's Hospital music curriculum
<i>zwerchpfeiffen</i>	1587	Graz	Stiftskirche (collegiate church) inventory
<i>zwerchpfeiffen</i>	1589	Stuttgart	Inventory of the Hofkapelle
<i>zwerchpfeiffen</i>	1590	Graz	Archduke Karl von Steiermark, inventory of instruments in Castle Allmar and Capellmeister's house
<i>querpfeiffen</i>	1593	Dresden	Inventory, Königlich Sächsische Hofkapelle
<i>zwerckpfeiffen</i>	1593	Sonderhausen	Inventory of sale of instruments to Leipzig
<i>traversa</i>	ca. 1600	Rome	Aurelio Virgiliano, manuscript, <i>Il Dolcimelo</i>
<i>zwerchpfeiffen</i>	1596	Innsbruck	Schloss Ambras inventory
<i>flute</i>	1599	London	Thomas Morley, <i>Consort Lessons</i>
<i>flauti traversi</i>	1602	Siena	Palace inventory
<i>flewtes</i>	1603	Hengrave, Newmarket	Musicians chamber, inventory of Thomas Kytson
<i>querpfeiffen</i>	1605	Leipzig	City purchase
<i>zwerchpfeiffen</i>	1606	Kremsmünster	Hans Feichtinger, made for convent
<i>querpfeiffer</i>	1607	Stralsund, Germany	City inventory
<i>zwerchpfeiffen</i>	1609	Nuremberg	City inventory
<i>flute</i>	ca. 1609	London	Rosseter ms., English consort lessons
<i>postrannj pýsstály</i>	1610	Český Krumlov	Inventory of Rozmberk Court band (transverse flutes)
<i>zwerchpfeiffen</i>	1613	Kassel	Inventory, Landgräfllich-Hessische Hofkapelle
<i>traversa</i>	1623-4	Wolfenbüttel	Daniel Selich <i>Opus novum</i>

Name	Date	Place	Description/original source
<i>traversa</i>	1614-19	Leipzig, Dresden, Kassel	Heinrich Schütz motets: SWV 47, SWV 48, SWV 475, SWV 477
<i>traversa</i>	1614	Florence	Antonio Brunelli, <i>Varii Eserciti</i>
<i>flute</i>	1617	Norwich	Inventory, Edward Jefferies, Norwich Waits
<i>querpfeiff, querflöte</i>	1619	Wolfenbüttel	Michael Praetorius, <i>Syntagma musicum II</i>
<i>traversa</i>	1619	Wolfenbüttel	Michael Praetorius, <i>Syntagma musicum II</i>
<i>traversa</i>	1626	Leipzig	Johann Michael Schein, <i>Kleine Geistliches Motetten</i>
<i>traversa</i>	1637	Leipzig	Tobias Michael, <i>Musicalischer Seelenlust II</i>
<i>flute</i>	1620	Chester	Inventory of Robert Hesketh
<i>traversa</i>	1622	Florence	Court inventory, Lorenzo Allegri, keeper
<i>flutes</i>	1625	Greenwich	Will of John Hussey
<i>fflute</i>	1625	Norwich	Inventory of Susan Jefferies kitchen
<i>zwergpfeiffen</i>	1625	Neisse	Inventory, Archduke of Habsburg, bishop of Breslau and Brixen
<i>querpfeiffen</i>	1629	Dresden	Inventory, Court of Dresden, in the wind room
<i>flutes</i>	1630	London court	Inventory, His Majesties Musique of winde instruments
<i>traversa</i>	<i>ca.</i> 1670-75	Leipzig	Sebastian Knüpfer 'Ach herr, strafe mich nicht'
<i>dwars-fluit</i>	<i>ca.</i> 1640	Amsterdam, Holland	Jacob Van Eyck, <i>Fluyten Lust-hof</i>
<i>flutes</i>	1674	London	Locke's <i>Psyche</i> ; 'warlike music', with trumpets, flutes and kettledrums
German flute			
<i>fleustes d'aleman</i>	1504	Burgundy	Chapel musicians for Philip the Good
<i>fleuste d'Allemain</i>	1514	Valentinois	Inventory, Charlotte d'Albret, Duchesse de Valentinois
<i>Flauti alemani</i>	1529	Ferrara	Este court banquet, Messisbugo cookbook

Name	Date	Place	Description/original source
<i>Flauti alemani</i>	1530	Florence	Este archives, request for instruments
<i>fleuste dallemant</i>	1533	Paris	Attaignant, <i>Vingt et sept chansons musicales a4</i>
<i>fleuste dallemant</i>	1533	Paris	Attaignant, <i>Chansons musicales a4</i>
<i>fleuste dallemant</i>	1535	Brussels	Inventory, Court of Mary of Hungary
<i>fleuste dallemant</i>	1535	Lyons	Rabelais, <i>Gargantua</i>
<i>fleustes d'allumens</i>	1544	Paris	Inventory of Mathurin de la Noue, <i>facteur, fleustier</i>
<i>flauti d'Alamagna</i>	1548	Florence and Lyons	Wedding of Catherine de Medici and Henry II
<i>flute d'alemant</i>	1551	Paris	Inventory of Ph. De la Canessière, <i>facteur</i>
<i>flustes d'allemens</i>	1553	Paris	Inventory of Estienne Loré <i>joueur d'instruments</i>
<i>fleuste d'Alleman</i>	1556	Lyons	Jambe de Fer, <i>Epitome musicale</i>
<i>fluttes d'alemans</i>	1557	Paris	Inventory of Nicolas Robillard <i>joueur d'instruments</i>
<i>flûte d'Allemande</i>	1558	Lyons	Simon Gorlier, 'Tabulature de flûte allemande' (lost)
<i>pifanos de Alemania</i>	1559	Madrid, Spain	Inventory of Queen Mary of Hungary
<i>Flautas de Alemania</i>	1559	Spain	Inventory of Queen Mary of Hungary
<i>Fluste d'allement</i>	1570	Paris	Inventory of G. Masuel, <i>joueur d'instruments</i>
<i>flueste d'alement</i>	1575	Paris	Inventory, wife of Nicolas le Breton, <i>joueur</i>
<i>flustes d'allemans</i>	1581	Paris	Inventory, Sulpice Bellamy, <i>joueur</i>
<i>flutes d'Alleman</i>	1621	Paris	Inventory Jean Vuillart, council of the King
<i>flutes d'Alleman</i>	1622	Paris	Inventory Jacques Michel, <i>fifre et tambour de la chambre du roi</i>
<i>flutes d'Alleman</i>	1624	Paris	Inventory Philippe Le Vacher, <i>violon de la chambre du roi</i>
<i>flutte d'allemant</i>	ca. 1695	Oxford	James Talbot's manuscript
<i>flute D.Almagne</i>	1701	London	John Eccles, <i>Judgement of Paris</i>

Chapter 2. The Swiss Flute, Instrument of Soldiers, 1470-1520

Hedging tools are both swords and ploughshares. They are not so far removed from the halberds and pikes of the old battlefields, and it is easy to see how readily a peasant army could have been raised and armed.

Roger Deakin, *Wildwood: A Journey Through Trees* (2007)

Chapter 2.1

A Short History of the Swiss Military

According to the Swiss historian Wilhelm Oechsli, the Swiss were known as ‘a people in arms’, and maintained military superiority as mercenaries in Burgundy, France, Germany and Italy during the fifteenth century.¹ The superior reputation of the Swiss military can be traced as early as the first century. The Latin historian Tacitus (*ca. 57- ca.117*) said of the Swiss: ‘the Helvetians are a people of warriors, famous for the valour of their soldiers’.² During the Swiss struggles for independence, from the thirteenth to the fifteenth century, they became the most powerful and feared military force in Europe.³

The reasons why the Swiss developed such a strong army may lie with their social and economic struggles. The country was overpopulated, with a precarious economy and widespread poverty. From church and civic records – there was no official census before 1600 – the population of this small confederation is estimated to have been 600,000 in the mid-fifteenth century.⁴ In the fourteenth century, the plague had decreased the population, but by 1500 it had increased to 850,000, growing to one million in 1600. Inflation during the fifteenth and sixteenth centuries resulted in an ever larger number of the poor. There were few ways of earning a living apart from agriculture, and no real economic base (prior to the period of industrialization through hydro-electric power and subsequent production of watches and chocolate). Life expectancy of males was 21.2 years in 1600; such short lives may be partially explained by the fact that at age 14, boys were subject to Swiss military duty, and one of the most lucrative jobs was as a mercenary soldier.

The history of the Swiss mercenary army in Europe is well documented. We know how it was organized and controlled, its dissemination, alliances, battles, uniforms, flags and weapons. The Swiss cantons held important roles as allies with various countries. Swiss mercenary *Eidgenossen* – or comrades under oath – were ‘citizen-soldiers, bound by a spirit of opposition, and a state of resistance to the powers that were’;⁵ they were not particularly loyal,

¹ Wilhelm Oechsli, *History of Switzerland 1499-1914*, trans. Eden and Cedar Paul (Cambridge, 1922); see especially ch. 1, 1-31: ‘1499-1513’.

² Tacitus, *De origine et situ Germanorum*, trans. A. J. Church and W. F. Brodribb (London, 1877), 187.

³ The following discussion is based on material provided by J. Murray Luck, *History of Switzerland* (Palo Alto, 1985), 85-129.

⁴ For a penetrating discussion of populations and demographics during the early Renaissance, see Fernand Braudel, *Civilization and Capitalism 15th-18th Century*, I: *The Structures of Every Day Life*, trans. Sian Reynolds (London, 1985).

⁵ As defined by William Martin, *History of Switzerland*, trans. Grace Booth (London, 1931), 59.

but went wherever they were paid. In the late fifteenth century the army numbered about 15,000 men, organized and controlled by the cantons, which authorized their enlistment and received commercial goods in return, such as corn, wheat and salt. The men emigrated to the wars in the summer and returned home in the winter with money and booty. The Zurich Reformation leader Ulrich Zwingli (1484-1531), who acted as a military chaplain despite openly opposing Swiss mercenary service in foreign wars, wrote a tribute to the Swiss soldiers' prowess, but it was also said that they were 'arrogant, deceitful, offensive and personally disgusting' in travel reports from the fifteenth and sixteenth centuries.⁶ In spite of such descriptions, the Swiss mercenaries were known and feared throughout Europe as the best soldiers available, even though they had no cavalry and little artillery – probably because they did not have the financial means to purchase them.

The Swiss troops retained their own regulations, flags, uniforms, German language and customs, and it was Swiss officers who gave the orders.⁷ Each canton had its own distinctive flag which was carried as an identifying marker (see, for example, the flag of Bern, Ill. 2.1.2). The flag of the Confederation, with its white cross on a red background, is familiar to us today as the flag of Switzerland. The white cross was also used as an emblem on uniforms.

Swiss chroniclers working principally in Bern, Lucerne and Zurich preserve detailed histories of the wars, with vividly drawn colour plates of battles and descriptions of weapons, uniforms, flags and musical instruments, including the flute and drum duo, the so-called 'Swiss pair'.⁸ Among the earliest signal instruments documented in the chronicles are animal horns, played by soldiers from the cantons of Lucerne, Uri and Unterwalden. A pair of animal horns can be seen in the battle of Arbedo (30 June, 1422); an illustration of military uniforms from Uri also features them.⁹ Trumpets (exclusive to the mounted cavalry), shawms and even bagpipes also functioned as military instruments during the fourteenth and fifteenth centuries. A frequently depicted precursor to the Swiss pair on the battlefield was the three-holed pipe and small tabor drum, played simultaneously by a single player. Gianni Lazzari documents the use of the pipe and tabor, especially in Italian foot regiments during the fourteenth and fifteenth

⁶ See Luck, *History of Switzerland*, 134. Oechsli, *History of Switzerland 1499-1914*, 7, described them as 'rude cow-milkers, but all of Europe feared their pikes and halberds.'

⁷ The following discussion of Swiss military uniforms, flags and weapons is based on information from George Gush, *Renaissance Armies 1480-1650* (Cambridge, 1982).

⁸ J. Murray Luck, *History of Switzerland* (Palo Alto, 1985), 111-121 gives a short overview of the major Swiss chronicles. For a discussion of the term 'Swiss pair' see Ch. 1.4.

⁹ See George Gush, *Renaissance Armies 1480-1650* (Cambridge, 1982), for illustration of soldiers from Uri playing animal horns; for chronicle illustrations of musical instruments see R. Nourrisson, 'Tambours, fifres et musique', *Colloque Les Gardes Suisses et leur Famille au XVII et XVIII siècles en région Parisienne Sté Historique de Rueil-Malmaison* (1988), 76.

centuries, a practice which continued in Tuscany even after the arrival of the Swiss pair in northern Italy during the Italian campaigns of the French army.¹⁰

Of all the chronicles it is especially the Bern chronicles, historical accounts of the canton of Bern and the wars with Burgundy, which document the use of the Swiss pair on the battle field. The first such chronicle appeared in 1325, with successive volumes appearing at regular intervals over the next two hundred years. The first to depict the Swiss pair (along with bagpipes, shawm and pipe and tabor), was Benedikt Tschachtlan's chronicle of 1470.¹¹ Tschachtlan's successor was Diebold Schilling (1403-86), a member of the Great Council of Bern and a participant in the Burgundian wars. Schilling was commissioned by the Council of Bern in 1476 to produce the most lavish and complete chronicles yet made, covering a complete history of the canton of Bern, the Swiss Confederation and the Burgundian wars.¹² Schilling's edition, in three volumes edited between 1476 and 1483, added 600 colour pictures, including numerous illustrations of the Swiss pair. It appears that this had become the main signal unit by this time, with bagpipes, shawms and pipe and tabor only occasionally portrayed – trumpets are still the main instrument of the mounted cavalry.¹³

The majority of Swiss mercenaries were foot soldiers, an important point related to the use of the Swiss pair to which I will return later in this chapter. They invented a tactic which relied neither on horses nor on artillery: a mobile rampart formation known as the Swiss pike square, which was in fact an enormous rectangle, forming an almost impenetrable phalanx of thousands of troops. The pike square is nearly as big as the wheat fields surrounding it in Ill. 2.1.1.

¹⁰ Gianni Lazzari reproduces pictures of military pipes and tabors from the fourteenth, fifteenth and sixteenth centuries, not only in Italy but in other European countries as well; see his 'L'uso Militare del Flauto a Tre Buchi e Tamburo', *SIFTS* 3, 1 (1998), 15-32.

¹¹ Benedikt Tschachtlan (1420-1493), *Berner Chronik* (Bern, 1470), Zurich, Zentralbibliothek, Ms. A 120; facs. Pascal Ladner (Lucerne, 1985-88).

¹² Diebold Schilling, *Berner Chronik*, Zentralbibliothek Zürich, Hs. Ms. A5; facs. Alfred A. Schmid (Luzern, 2005).

¹³ For illustrations of the Swiss pair from the Swiss chronicles see www.renaissanceflute.ch: 73, 133, 141, 170, 219.



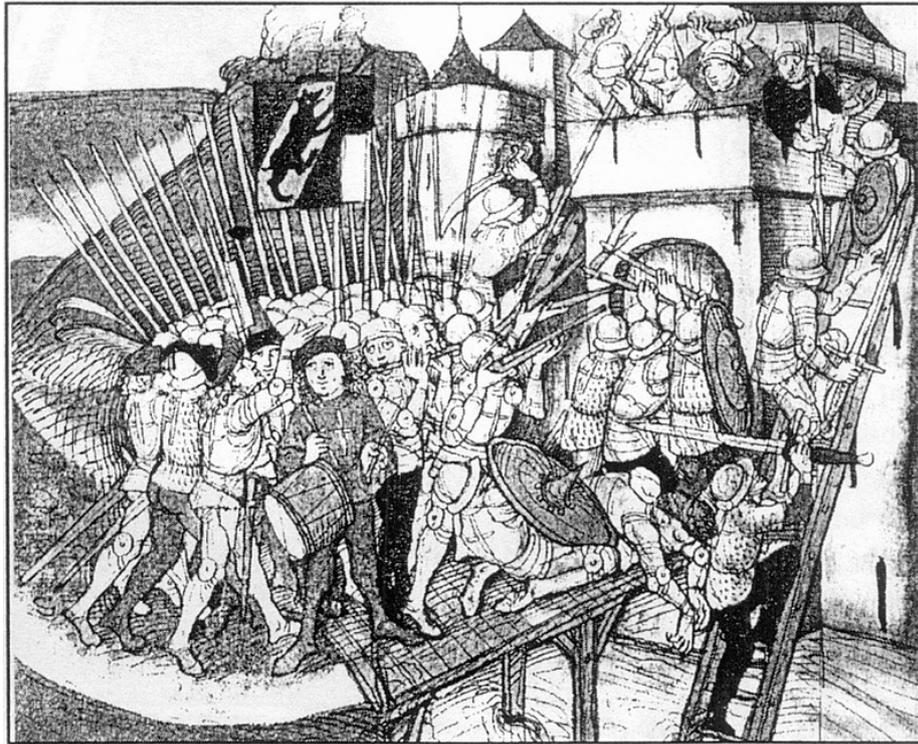
III. 2.1.1. The pike square depicted in *The Battle of Novara, 1513*.

The square was made up of several concentric ranks of soldiers, each layer carrying different types of weapons. The outside ranks were armed with pikes. Held head-high and forward, with the point inclined down, the pikes formed a formidable barrier to stop the mounted cavalry of the opposing army. Originally ten feet long, the pikes were enlarged to eighteen feet during the Italian Wars of the early sixteenth century. On the inside ranks were the halberdiers. The halberd was a nasty weapon invented by the Swiss, eight feet long, shaped with a curved blade used to pluck soldiers from their horses and a second hatchet blade with which to attack.¹⁴

At the heavily protected heart of the square or at the back of the flank is found the trio of Swiss flute, drum and standard-bearer; the trio acted together to identify the individual regiments with flags and audible signals. For example, in 2.1.2 below, a flute player and a drummer can be seen embedded in the midst of the pike formation, near to the standard-bearer – the banner clearly shows the distinctive flag of Bern, with its bear motif. A feature of this picture is that all the soldiers are marching in step together, a practice documented further in Schilling’s written account of 1476, where he reports that the troops stepped ‘precisely in time’ to the flute and drum in the battle of Morat against the Burgundian army of Charles the Bold.¹⁵

¹⁴ A Swiss halberd dating from late fifteenth or early sixteenth century is in the Tower of London, Royal Armouries collection.

¹⁵ Illustration after Dagmar Hoffman-Axthelm, ‘Zu Ikonographie und Bedeutungsgeschichte von Flöte und Trommel in Mittelalter un Renaissance’, *BjbHM*, 7 (1983), 89; this picture is also mentioned in Ardal Powell, *The Flute*, 27, and Luca Verzulli, ‘Le musiche militari per flauto e tamburo’, *SIFTS* 4, 2 (1999), 3-11.



Ill. 2.1.2. Diebold Schilling, 'Berner Chronik', 1484-85, flute and drum players with standard bearer in the pike square.

The Swiss pike square dominated the battlefields of Europe during the late fifteenth and early sixteenth centuries. Whether by sheer force of numbers, or because the soldiers travelled lighter and on foot, the Swiss pike square proved to be superior to the heavily-armoured mounted cavalries of most European armies. Although many of the soldiers were without armour, they were well protected by their weapons, and also with pot-helmets, half-armour and mail sleeves. From the 1490s, the *arquebuse* (a type of musket) was in limited use in skirmishing screens in front of the front ranks of pikes, and a few horse-mounted soldiers can also be seen in some pictures.

To summarize, the five members of the Swiss pike square were the pikeman, halberdier, standard bearer, flute player and drummer. These five are brought together in a drawing by the German illustrator Daniel Hopfer. The equal esteem and importance accorded to all five positions are emphasised by Hopfer's detailed and formal 'portrait' style.



Ill. 2.1.3. Daniel Hopfer, The five members of the Swiss pike square, 1525.

The Swiss Army in Europe

An alliance was made in 1453 between the Swiss and the French King Charles VII, and renewed in 1474 by King Louis XI. In 1476, Louis XI hired six thousand Swiss *Eidgenossen*; Swiss flute players and drummers must certainly have been amongst them.¹⁶ During the Burgundian wars of the 1470s, Charles the Bold's mounted cavalry, in heavy armour, was outmanoeuvred by the combined Swiss/French pike formations, first in 1474 at Herecourt, and again in 1476 at Bern and Morat.¹⁷ Charles the Bold was killed fighting the Swiss mercenaries at the Battle of Nancy on 5 January, 1477. But the Swiss paid a high price for their victories. There was corruption and general impoverishment in Switzerland after the Burgundian wars, though these were alleviated somewhat when the French King Charles VIII hired more Swiss troops. At the beginning of the Italian campaigns in 1489, Charles VIII inaugurated his own band of flutes and drums, the *phiffres et tabourins Suisses*. By 1500, the Swiss style of land warfare had swept the continent; the Swiss were enlisting in droves in foreign armies, and most of Europe had adopted the Swiss pike formation with its flutes and drums.¹⁸ The sound of the Swiss pair was heard far and wide in Europe. Gold flowed into Switzerland – war had become an important industry, and a principal source of income.

¹⁶ On the French use of Swiss mercenaries see Luck, *History of Switzerland*, 104-107, and William Martin, *History of Switzerland*, 73-75.

¹⁷ William Oechsli, *History of Switzerland 1499-1914*, 3-4.

¹⁸ See Miller and Embleton, *The Swiss at War, 1300-1500*, 28.

By the end of the fifteenth century the Swiss style of soldiering made its way into the armies of the Habsburg Emperor, Maximilian I, King of the Romans from 1486 and Holy Roman Emperor-elect from 1493 to his death in 1519. Maximilian I was a powerful ruler of one of the most venerable dynasties in Europe. Except for a brief period in the eighteenth century, Habsburgs occupied the throne of the Holy Roman Empire from 1273 to 1806. Maximilian, by skilfully arranged dynastic marriages, passed on an empire that included Austria, the Netherlands, Spain, Naples, Sicily, and the American colonies.¹⁹ His marriages to Mary of Burgundy in 1477 and Bianca Maria Sforza in 1493 brought him into contact with Burgundy and northern Italy, and he modelled his own court at Vienna on these two centres of Renaissance culture. He was a devoted patron of music, arts and learning. Upon becoming Holy Roman Emperor in 1493, Maximilian I established his own army on the Swiss model; these copy-cats were known as *Landsknechte*, who were young country lads enlisted as lowly mercenary foot-soldiers, entirely emulating the Swiss *Eidgenossen*.²⁰ Like the Swiss, Maximilian I ordered his troops to swear an oath of allegiance. They carried pikes and halberds, fought in Swiss pike square formation, and adopted the use of flutes and drums.

Extant military records of Maximilian I show the organization and pay scales of the troops, which were probably similar to those of the Swiss armies.²¹ Maximilian's troops were organized into ten regiments of 400 men each. Within each regiment, the colonel, as commander, was the highest paid at 400 guilders. Ordinary soldiers received 40 guilders, the chaplain was paid 12 guilders. Each regiment had two *Pfeiffer* (flute players) and two *Trommelschläger* (drummers), paid 4 guilders each – the same as the cook. The soldiers' camps also had their unpaid followers, including handymen, who could fix equipment; clergymen, to offer some spiritual guidance; and women, who provided nursing, laundry, fetching and carrying, and leisure activities of dancing, drinking and sexual favours. German line drawings and woodcuts showing flute-playing soldiers both on and off the field begin to appear in increasing numbers during the 1490s.²² By about 1500, the flute and its ubiquitous partner the drum were an essential part of German mercenary foot soldiers' equipment, playing

¹⁹ See Paula S. Fichtner, *The Habsburg Monarchy 1490-1848: Attributes of Empire* (London, 2003), for a history of the Habsburg empire. For a contemporary biography of Maximilian I, see *Der Weiss Kunig: Eine Erzählung von den Thaten Kaiser Maximilian des Ersten* (facsimile of the 1775 rpt., Leipzig, 2006); begun as an autobiography by Maximilian I, it was completed after his death by his secretary Marx Treitzsaurwein, with woodblock prints by Hans Burgkmaier, and first published in 1527.

²⁰ For more on the history of Maximilian's army see Douglas Miller, *The Landsknechte* (London, 1976), 3ff. The term *Landsknechte* dates from around 1470, to distinguish the ordinary foot soldiers from horse-mounted officers. They served both Maximilian I (1483-1519) and his grandson, Charles V (1519-1556).

²¹ The records shown here, dating from 1507, are from Douglas Miller, *The Landesknecchte*, 5-6.

²² Mary Rasmussen, 'The Case of Flutes in Holbein's 'The Ambassadors'' *EM*, 23 (1995), 114.

a major role in their daily life, not only on the battlefield but also as an accompaniment to marching, ceremonies and entertainment in the barracks, taverns, cities and courts throughout Europe.

The Swiss and German mercenaries maintained a burning hatred for each other, having found themselves often fighting on opposing sides. During the Swabian Wars of 1499, the Swiss met Maximilian I's *Landsknechte* at Dornach, where a decisive victory by the Swiss resulted in the conclusion of the Swiss wars of independence and the full establishment of the Swiss confederacy. During the Italian campaigns the German mercenaries joined forces with the French to fight the Italian-Swiss alliance. One of the most decisive battles was at Marignano in 1515, where the French-German alliance was victorious owing to a new reliance on artillery and firearms. The infantry proved inferior to the artillery, and Swiss military superiority began to unravel.²³ The Swiss pike square's domination was finally ended at the Battle of Bicocca in 1522. The growing power of firearms used by the Spanish and French armies proved the undoing of the pike square. During the remainder of the sixteenth century the Swiss units gained firearms, and by 1600 had guns and cannons in plenty, though not to the exclusion of the pikes and halberds. The flutes and drums were retained in the Swiss, French and German armies well into the seventeenth century.

During the period of the Italian campaigns in northern Italy, the Pontifical Swiss Guard in Rome developed a southern stronghold of Swiss mercenary soldiers.²⁴ An alliance between the Vatican and the Swiss army existed from 1495, when Charles VIII's Swiss troops, marching home from Naples, stopped in Rome to amuse themselves along the way home. Well aware of the Swiss mercenaries' prowess, Pope Julius II drafted some of these men to stay in Rome. The Swiss Guard was officially formed in 1506 by Pope Julius II, an elite band of one hundred and fifty Swiss soldiers acting as his official bodyguards. Flutes and drums were probably part of the Pope's entourage, although they are recorded in the Vatican rolls only from 1548.²⁵

The Swiss Guard was in place until the Sack of Rome in 1527, when an army of Spanish mercenaries and German *Landsknechte*, invaded St. Peter's with fateful consequences. The outnumbered Swiss were defeated to the cries of the Germans' 'Vivat Lutherus Pontifex', and graffiti of Martin Luther, leader of the German Reformation, and of Maximilian I's

²³ In Maximilian I's biography, *Der Weiss Kunig*, mention is made of his talent at handling heavy artillery; one cannon of three tons was called *Nachtigall* (the nightingale). See the discussion in Douglas Miller, *The Landsknechte*, 12-15. The Battle of Marignano is described in Luck, *History of Switzerland*, 132.

²⁴ For a full history of the Swiss Guard, see Robert Royal, *The Pope's Army: Five Hundred Years of the Papal Swiss Guard* (New York, 2006).

²⁵ This date is given by Ardal Powell, *The Flute*, 29.

successor, Emperor Charles V, were painted on the Vatican walls.²⁶ After the battle, two hundred *Landsknechte* replaced the Swiss Guard at the Vatican, fuelling the hatred which already existed between the Swiss and German mercenaries. It was the *Landsknechte* therefore, and not the Swiss, who would have been playing the flutes and drums first recorded in the Vatican rolls of 1548.

²⁶ For more on the Sack of Rome, see Robert Royal, *The Pope's Army*, 74-5; Royal also documents that Charles V's predecessor Maximilian I had wished to unite the papacy and his empire, with himself as ruler of both, in the early years of the sixteenth century; see 32-35.

Chapter 2.2

The Instruments and Music of the Swiss Pair

Drums and Flutes

The drum in Swiss and German pictures *ca.* 1476-90 is a small or medium-sized snared tabor similar to those used with the three-hole pipe. When used in duo with the flute it was played with two hard mallets. Around 1490 the size of the drum increased dramatically, still played with two sticks and usually pictured with a snare attached to the playing head.²⁷ The German musician and theorist Sebastian Virdung pictured and described just such a large snared field drum, which he said was used with soldiers' *zwerchpfeiffen*, or transverse flutes. He differentiated the field drum from kettledrums, which were played only with trumpets:

When the royal court summons soldiers to battle with trumpets, when trumpets are sounded at table, or when a prince rides into a city or marches into battle these [kettle] drums are enormous tubs of noise. Besides these, there are also other drums that are generally beaten to the music of *zwerchpfeiffen* like soldiers have.²⁸



Ill. 2.2.1. Sebastian Virdung, *MG* (1511), Field drums and kettle drums.

The sixteenth-century dancing master Thoinot Arbeau concurred that the drums used by German and French soldiers were large – a massive two-and-a-half feet in diameter and length – closed at each end with parchment skins bound with cords to keep them taut, with a

²⁷ This date is confirmed by early percussion specialist Michael Metzler, unpublished paper given at Basel, May 18, 2005.

²⁸ Beth Bullard, trans., *Musica getutscht: a Treatise on Musical Instruments (ca. 1511) by Sebastian Virdung* (Cambridge, 1993), 114.

snare on one skin, and making ‘a noise like thunder’.²⁹ Ill. 2.2.2, depicting the Swiss pair and standard bearer, shows just how huge these drums could be.



Ill. 2.2.2. Pieter Bruegel the Elder, *The Three Soldiers* (1558).

In fifteenth- and sixteenth-century pictures the flute played by soldiers was a simple, slim, wooden instrument made in one piece, with six finger holes and no keys; in its essential features it is not distinguishable from Renaissance consort flutes. This flute was well suited for use by foot soldiers, being light, easy to transport and relatively robust. Side blown, it could not knock out the teeth of the player (always a danger for horse-mounted trumpeters), and with its playing position close to the body, it could be drawn in easily.

Exact sizes of Swiss flutes are difficult to document, since pictures show variable lengths which are not standardized. Swiss flutes were played as monophonic instruments with drums, as depicted in these drawings, and standard sizes and pitches were not important. There seem to have been two basic sizes, roughly equivalent to soprano and tenor (nothing long enough to be called a bass is in evidence). Long, slim flutes are depicted by Hans Sebald Beham (1500-1550), *Pfeyffer* (Ill. 2.2.16), and Virgil Solis (1514-62) (Ill. 2.2.18). A shorter one is depicted by Hans Schaufelin (Augsburg 1513) (Ill. 2.2.5). Although short flutes would have been easier to carry around, a surprising number of pictures show flutes which are, like those in Beham, very long indeed.

The playing styles described for military flutes invariably refer to a characteristic loud and piercing sound. Arbeau described the *fiffre* used by the German and Swiss soldiers as having ‘six holes and a very narrow bore only the thickness of a pistol bullet’ which gave it ‘a

²⁹ Thoinot Arbeau, *Orchesography*, trans. Mary Evans (New York, 1966), 18-19.

shrill note to inspire the soldiers during battle'.³⁰ Shakespeare remarked on 'th'ear-piercing fife' in *Othello*.³¹ Similar to the European flute was the Chinese bamboo flute, the *hengchui*, a short soprano flute used in the military during the Han period (206 BC – 220 AD). It was said to have a 'piercing and coarse sound to terrify the enemy'.³² Anyone who has heard the flutes and drums of the Swiss *fastnacht* celebrations which take place each February in Basel, the fife and drum corps of Colonial Williamsburg in America, or the flutes of the Orange Parade in Northern Ireland can imagine just how early Swiss flutes must have penetrated the air.

Flutes and the drums are described in the fifteenth-century Florentine carnival song text, 'Canto di lanzi tamburini' by Carlo Lenzone (the music does not survive).³³ It is one of a number of so-called 'canti di lanzi', amusing character songs which poke fun at the German soldiers, written in dialect to imitate the German *Landsknechte* (the 'lanzi' in Italian) who were fighting in Italy from 1495 to around 1525. The music of the flutes and drums must have been audible to all who passed by in the streets of Florence, given that their quarters were in close proximity to the Piazza Padella.

Canto di lanzi tambourine:	Song of the soldier drummer-boys:
Lanzi maine tamburine,	Soldier drummer-boys
D'alte Magne eran fenute	Have come from across the mountains
Per sonar tambure e flute	To play the drum and flute
Dove star guerre e buon vine.	Wherever there is war and good wine.
Noi fedute in queste terre	In these lands we have seen
Tante belle nozze e feste,	So many beautiful weddings and celebrations,
Non soler cercar più guerre,	That we don't want to look for other wars,
Ma fermarci tutte in queste;	But rather, to a man, to stop at these;
E se buon vin dare a teste	And should good wine go to our heads,
Non lasciar mai centelline.	We never leave a drop undrunk.

³⁰ Arbeau, *Orchesography*, 38-39.

³¹ *Othello*, *The Moor of Venice*, Act III, Scene 3, where the fife is mentioned along with 'the spirit-stirring drum' and 'the royal banner', in other words, the triumvirate of flute, drum and standard bearer which was at the heart of the Swiss pike square.

³² Chuang Pen-li, 'Ch'hi, the Ancient Chinese Flute', *Bulletin of the Institute of Ethnology, Academia Sinica*, xix (1965), 139-203. See also Alan Thrasher, 'Di', *GMO*.

³³ Thirty *Canti di Lanzi* survive (twelve with music), providing musical clues about various aspects of the soldiers' lives, including the instruments they played. See Timothy McGee with Sylvia E. Mittler, 'Information on Instruments in Florentine Carnival songs', *EM*, 10 (1982), 452-461. The song-text and translation reproduced here is on p. 457 of McGee's discussion.

Noi portar grosse tambure,
 Perché rende suon maggiore,
 Fave grande, asciutte e dure
 Vi metteme a tutte l'ore,
 Che balzande fan romore
 D'armonie, quasi divine,

We carry large drums
 Because they give a loud sound,
 We put large, dry, hard beans
 In them at all times
 And bouncing about, they make
 A sound harmonious and nearly divine.

Ben'è fer, ch'al tempe molle
 Non ne rende nette il suone,
 Ma dinanzi allor si tolle
 E di dieter a discrezione;

It is quite true that in humid weather
 It doesn't give a clear sound,
 But then take from the front and apply
 At the back with discretion [tighten the
 binding];

Star ben destre le persone,
 Tirar corde e cintonline.

Those who work the thongs and cinctures
 Are very dextrous.

Noi afer le flute nostre
 Grosse, lunghe, e ben bucate;
 Belle donne, ve le mostre,
 Tutte dolze far sonate,
 Buon dinanzi e buon per late,
 Nel principio e nelle fine.

We have our flutes
 Which are large, long and well bored;
 Beautiful ladies, let us show them to you,
 They all play sweetly,
 Good in front as well as on the side,
 At the beginning and at the end.

Ben tener bisogen strette
 Mane al buche e al flute ancora,
 Se star molle, tenor nette,
 Ancho colen come gore,
 E non dar soun nette fuore,
 Come far nostre dottrine.

One should hold one's hands
 Close to both hole and flute,
 And if the tone is flat, keep it clean,
 Even if it should drip like a mill-course,
 And not produce a clear sound,
 As our training has taught us.

E si pur voi donne belle,
 Impanar sonar volete,
 Noi loggiar Piazza Padelle,
 Alle stufe là di drete,
 Dove scuole consuete
 Far' piacere a Florentine.

And if you too, beautiful ladies,
 Should wish to learn how to play,
 We are quartered in the Piazza Padella,
 Opposite the hot baths,
 Where the school in customary use
 Affords pleasure to Florentines.

Noi soler, che come amiche

We wish that you as friends

Non spendiate altri dinare,	Not spend money elsewhere,
Baste sol ch'al buche e al fiche	It is enough at the sign of the Hole and Stick
Dove nostre stanze stare,	Where we have our rooms,
Ne facciate spesse dare	And give often so as to allow
Da far trinche e centelline.	For drinking and sipping.

The text, with its intentional sexual puns, makes a number of references to the sound and playing techniques of the Swiss pair. The *tambure*, or drums with beans inside to make them rattle, correspond to Arbeau's description of drums which make 'a noise like thunder'. Tension is controlled by tightening the thongs 'to make the sound more clear'. The flutes are 'clear, sweet, loud, large, long, and well-bored.' The soldiers quartered at the Hole and Stick are concerned with both maintenance and sound production – no doubt a *double entendre* for sexual performance – 'if the tone is flat, keep it clean', to 'produce a clear sound as our training has taught us'.

Instrument Cases for Multiple Flutes

Around 1500 pictures began to depict soldiers carrying cases with nested tubes of equal or slightly differing (and somewhat haphazard) lengths hanging from belts or shoulders. From this we might conclude that the flute had developed as a consort, but evidence for this is lacking. Cases for multiple flutes, similar in design to those holding multiple swords or arrows, may have been carried to supply replacements – whether weapons or flutes – for items lost or damaged on the battlefield. Most pictures depicted soldiers as solitary flautists with a drummer. In the rare depictions where there was more than one flute player, they all play flutes of the same length (for example, in the *Triumphzug Maximilianus I*, see Ill. 2.2.4, 2.2.8).

Over 40 pictures of military flute cases date between *ca.* 1500-1550.³⁴ Not all case depictions are detailed enough to warrant discussion, but the prints and drawings illustrated below offer good views of the number and lengths of tubes. It is well to keep in mind that cases with several tubes of different lengths for housing multiple flutes do not necessarily indicate the lengths of flutes inside, and because the cases in pictures are firmly closed, we cannot know for certain what sizes, or even how many flutes the cases held. A single exception is the 1523 drawing by Urs Graf (Ill. 3.2.1), which depicts a case for four flutes and four soldiers playing them. This picture is the first to illustrate a flute consort – soprano, alto and

³⁴ A convenient source for viewing illustrations of military flute cases is www.renaissanceflute.ch; a number of pictures are also in Mary Rasmussen, 'The Case of Flutes in Holbein's *Ambassadors*', *EM*, 23 (1995), 114 ff.; and Ardal Powell, 'Military Flutes of the Sixteenth Century', unpublished paper read at the American Musical Instrument Society, Poughkeepsie, New York, 18 June, 1999. I am grateful to Ardal Powell for making his paper available to me.

tenor of the same size, and bass. In spite of the soldier-flautists, Graf's drawing stands outside the 'military' context of the Swiss pair, the reasons for which are made clear in the discussion in Ch. 3.2.

Illustrations of Soldiers with Flute Cases, ca. 1496-1550

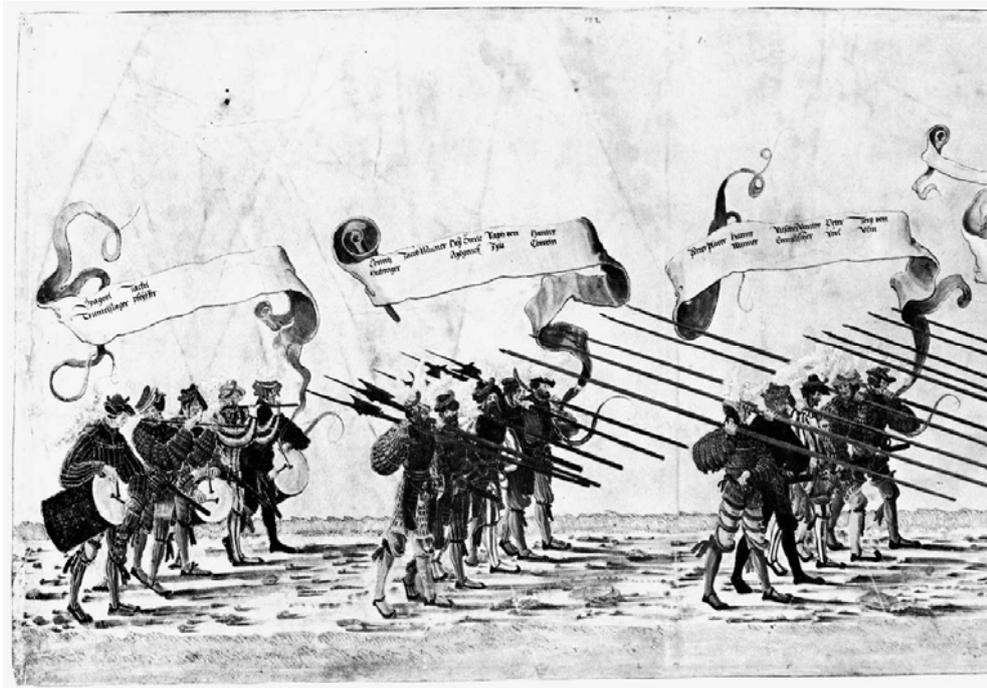
The following pictures (Ill. 2.2.3. to Ill. 2.2.20) are a representative selection which depict soldiers carrying cases for flutes. The pictures offer graphic examples of the types of cases and the number and sizes of tubes.



Ill. 2.2.3. Albrecht Dürer (1471-1528), *Die Freuden der Welt*, ca. 1497.³⁵

Swiss pair playing for dancers in a camp; the soldier may have a flute case with three or four tubes of equal length hanging from his belt, but the outlines are too abstract to identify it with certainty. It may be a case for weapons such as arrows or knives. If it is a flute case, it is the earliest example.

³⁵ Winkler, *Dürers Zeichnungen I*, 163; see also Christopher White, *Old Master Drawings from the Ashmolean Museum* (Oxford, 1992).



III. 2.2.4. Workshop of Albrecht Altdorfer, prototype for the *Triumphzug* for Maximilian I, ca. 1510.

Two Swiss flutes and three field drums. Black cases are just visible, hanging from the belts of the flautists, the length is approximately hip to knee.



III. 2.2.5. Hans Schäufelein (1483-1539), Swiss pair and drummer, Augsburg, 1513.³⁶

Signed and dated woodcut of two drummers and one Swiss flute (tenor, fingering 12 46), case with three tubes, two the same length and one shorter.

³⁶ M. Geisberg, *The German Single-leaf Woodcut, 1500-1550*, ed. W.L. Strauss (New York, 1974), no. 1102.



III. 2.2.6. Niklaus-Manuel Deudtsch (1484-1530), Female flautist, 1514/15.

Female 'military' flautist (possibly a reference to Athena as the goddess of war) with case, length hip to knee, three tubes visible.



III. 2.2.7. Albrecht Dürer, drawing for Maximilian I, 1517.

Flute case and field drum; three sizes of tubes are clearly visible.



Ill. 2.2.8. Hans Burgkmair, *Triumphzug Maximilianus I*, 1516-19.

Four Swiss flutes on horseback (accompanied by five field drummers, also on horseback, not shown). Three flautists are playing tenor flutes of equal length, two cases are visible, of two (or three?) lengths, waist to knee.



Ill. 2.2.9. Anonymous woodcut, Nuremberg, entry door for Maximilian I, 1512/17.

Pikes, halberds, drum, case of arrows; a flute case (behind the drum) shows three tubes visible.



Ill. 2.2.10. Jörg Breu (1475-1537), Augsburg, 1516, Swiss Pair in battle.

Swiss Pair in battle, tenor playing, case just visible at the flute player's waist (to the left of the drummer).



Ill. 2.2.11. Jacob Binck (1500-68), *Three Landsknechte*, 1525.

Signed drawing of a Swiss Pair, with another soldier in the background. The flautist is holding a flute under his left arm, and carries a flute case hip to calf for three flutes of equal length; a single flute is visible in the case.



Ill. 2.2.12. Daniel Hopfer (1493-1536), *Fünf Landsknechte*, Augsburg, 1525.³⁷

As pointed out in Ch. 2.1, Hopfer's picture is unusual for depicting all five of the members of the Swiss pike square – flautist, drummer, standard bearer, pikeman and halberdier. The flautist is playing a long tenor (fingering 13 46), the case is for four flutes, waist to calf, only two lengths are visible, top of case shows cap for four tubes, one of small diameter, three larger, of equal size.



Ill. 2.2.13. After Lucas van Leyden (1519), tapestry, *Dance of May*, Flanders, 1520-30.

Swiss Pair, case for three flutes of the same size.

³⁷ see R.A. Koch, 'Early German Masters: Hans Brosamer, the Hopfers', *The Illustrated Bartsch*, 17 (New York, 1981), plate 66, 143.



Ill. 2.2.14. Jacob Binck, three cherubs: Swiss pair and standard bearer, ca. 1520.³⁸

This is a fanciful rendition of cherub-soldiers; the case hanging from the belt of the cherub on the right appears to be for three flutes of equal length.



Ill. 2.2.15. Urs Graf (1485-1527), detail, flute playing soldiers, 1523.

This is a detail from Graf's drawing of four flute-playing soldiers, showing the soprano flute player as keeper of the case for four flutes. This is the earliest illustration of a complete consort of flutes, with a case which is long enough to hold the bass flute. This picture and its relationship to the flute consort is discussed fully in Ch. 3.2.

³⁸ See *The Illustrated Bartsch*, ed. Martha Wolff (New York, 1985), 23.



III. 2.2.16. Hans Sebald Beham (1500-1550), *Pfeffer* ca. 1520-30.³⁹

Soldier playing flute, with a case with four tubes of at least two different lengths.



III. 2.2.17. Nicolas Stoer (1523-73), *Soldatenzug*, Swiss pair.⁴⁰

Case, waist to knee, with two different sizes of tubes visible.

³⁹ M. Giesberg, *The German Single-leaf Woodcut, 1500-1550*, ed. W.L. Strauss (New York, 1974), no. 259.

⁴⁰ Giesberg, *The Single-leaf Woodcut*, no. 1374.



Ill. 2.2.18. Virgil Solis (1514-62), Swiss flute player viewed from behind, 1555.

Case with five tubes of different lengths, shoulder to hip, soldier playing a long tenor, left-handed, fingering 23 456.



Ill. 2.2.19. Virgil Solis, flute player and drummer, 1555.

Almost identical to fig. 2.2.18, tenor flute, right-handed, fingering 23 456, case over shoulder for five tubes, above shoulder to hip; large field drum.⁴¹

⁴¹ Ardal Powell, 'Military flutes', from an anonymous drawing in Leonhard Fronsperger's manual of military discipline, *Fünff Bücher, Von Kriegss Regiment und Ordnung* (Frankfurt, 1555).



III. 2.2.20. Hans Wandereisen (1519-48), flute player with sword and flute case.

The solitary flautist carries a sword and a flute case which appears to be covered with leather, with a metal clasp on the lid; three tubes of different lengths are clearly visible.⁴²

Discussion and Analysis of Flute Cases

The earliest clear example of soldiers carrying flutes and flute cases is in Fig. 2.2.4 above. This painting is one of a number of miniatures painted on vellum *ca.* 1510, which Herbert Myers has shown were made in preparation for the woodcuts by Hans Burgkmair for his *Triumphzug Maximilianus*, a series of musical pictures ordered by the Emperor Maximilian I in 1512 and executed between 1516 and 1519.⁴³ In the *Triumphzug* drawings, carts of musicians play

⁴² Geisberg, *The German Single-leaf Woodcut*, no. 1486.

⁴³ For discussion of the miniature paintings and their relationship to the Burgkmair woodcuts, see Herbert Myers, 'The Idea of "Consort" in the Sixteenth Century', *Musicque de Joye*, ed. David Lasocki (Utrecht, 2005), 49-53. The miniatures are in Österreichische Nationalbibliothek, Cod. 2835 and Min. 77; cited by Myers, fn. 78-79. For more on the Burgkmair woodcuts see: Rolf Dammann, 'Die Musik im Triumphzug Kaiser Maximilians I', *Archiv für Musikwissenschaft* 31, no. 4 (1974), 245-89; Uta Henning, *Musica Maximiliana: Die Musikgraphiken in den bibliophilen Unternehmungen Kaiser Maximilians I* (Neu-Ulm, 1987); Stanley Applebaum, trans., *The Triumph of Maximilian I* (New York, 1964).

instrument of all kinds, sometimes in far-fetched groupings which cannot possibly represent actual playing ensembles.⁴⁴ Leading the entire procession are four players of Swiss flutes and five drummers (Fig. 2.2.8 above), mounted – unusually – on horseback. Maximilian’s corps of Swiss flutes and drums regularly accompanied him on his travels, but they were normally foot soldiers, horses being associated only with trumpets and kettle-drums. Perhaps here they were meant to underline the splendour of the Emperor’s musical establishment. Three of the four flautists are playing, each fingering a Swiss flute of the same tenor size. Their leader is not playing; instead he carries a banner, blank in the drawing but apparently meant to contain a poem dictated by Maximilian in 1512 which survives in a separate source.⁴⁵ The banner text identifies him as ‘Anthony of Dornstätt’.

Ich Anthonj von Dornstet also genannt	I, Anthony of Dornstätt, so-called,
Hab gepfiffen in gar manige lanndt	Have played my <i>pfeiff</i> in many a country,
Dem gross streytparen Kaiser Maximilian	For the great and warlike Emperor Maximilian,
In viel herten streyten und Ritterlicher pan,	In many tough battles and knightly campaigns,
In kurzweyl, und ernst alzu geren, serious	In entertainment and very readily on occasions,
Darumb so pfeiff Ich disen Tryumpf auch mit Eren.	And for that reason in this Triumph with honour I play.
Ich hab gepfiffen oft und gern	I have played my <i>pfeiff</i> often and readily,
Nach rechter art mir gueten Eern	In the proper manner with great honour,
Dem Kaiser Maximilian	For Emperor Maximilian,
In kriegem Ritterlicher Pan	In wars of knightly style,
Zu schimpff vnd Ernst allzeit genaigt	In derision and all times in seriousness,
Wie solches der Tryumpf anzaigt.	As is shown by this Triumph.

⁴⁴ This point is discussed by Herbert Myers, ‘The Idea of “Consort”’, 49-53, and by Keith Polk, *German Instrumental Music*, 92-94.

⁴⁵ The original German verses are printed in www.renaissanceflute.ch. An English trans. of verse 1 is in Ardal Powell, *The Flute*, 30. For verse two see: A:Wn: Ms 2805. The translation above was made by Alfred Lehmann.

The poem is mere doggerel, but it corroborates the evidence presented in Ch. 2.1 by conveying that Swiss flutes were played not only in battle but also for serious occasions and for recreation. That they were trained to play in a particular way might be inferred from the ‘proper manner with great honour’.

Identical cases with four nested tubes of differing sizes hang from all four soldiers’ belts. If the cases were ‘standard issue’ in 1510, the practice of carrying them probably dates from slightly earlier, lending credibility to Durër’s drawing of 1496 (2.2.3) being a case for flutes. Anthony’s case for four flutes is the most clearly visible, hanging waist to knee, with tubes of three lengths: one small, two middle-sized of the same length, and one only slightly longer. It is tempting to think that a consort of flutes might be inside – indeed, there could be a treble in the short tube, two alto/tenors of equal length in the middle tubes. But the length of the longest tube is not long enough to hold a bass flute, and so it raises the question of what combination of flutes these soldiers were carrying. Some possible answers might be found by comparing the relative sizes of the tubes in the other pictures, which show the following combinations:

1. Three tubes of equal [tenor] length (5)
2. Three tubes of two equal [tenor] length, and one shorter (6)
3. Four tubes of three lengths, one short, two middle of equal size, and one longer, waist to knee (6)
4. Five tubes

In five pictures the lengths are not visible.

The lengths of the tubes delineate only the approximate shortest and longest lengths, but do not necessarily determine the lengths of the flutes inside. Cases for three tubes of equal length, for instance, can hold flutes of different sizes, or three of the same size. Some cases were capable of holding more than one size of flute, but it can be seen from the illustration that lengths of flutes were unsystematic and variable, and cases were not long enough for basses. The only definitive measurement is that of the longest tube, which, with the exception of Urs Graf’s illustration of 1523, is never longer than waist to just below the knee, not long enough to hold a one-piece bass flute of the type depicted by Graf (three one-piece bass flutes survive in museum collections; see Ch. 1.3).

By about 1520 the full consort of three sizes including the bass is known to have existed, both because by that date the first music for flute consort was published in Germany (discussed in Ch. 3.2) and because a full consort was depicted in 1523 by Urs Graf. Graf’s picture is exceptional for depicting a set of flutes in related sizes suitable for playing four-part polyphony in the standard voice distribution of soprano, alto, tenor and bass. Soldiers may or may not have been able to read music, but whether or not they were able to do so, it is unlikely that they would have had access to the written sources of polyphony which were circulating in European prints and manuscripts, or the means to buy them if they had. This

does not rule out some kind of improvised or memorized rudimentary ensemble playing, but performing sophisticated vocal polyphony in four-part consorts was probably unknown to them. We must look elsewhere for the development of the ‘consort principle’ for flutes.

The Music of the Swiss Pair

On the Battlefield

The combination of flute and large field drum provided the troops with spirit and discipline, and gave vital signals on the battlefield. The drum was probably the more important of the two, for it would have supplied strongly audible beats to keep them marching in time and on the same foot, without which there would have been pandemonium in the movement of the pike square. Two steps for every eight drum beats was the norm, explained by the French dancing master Thoinot Arbeau:

Our Frenchmen are instructed to make the squadrons march to certain rhythms...they must all march in unison, either quickly, moderately or slowly...the drum rhythm contains eight minims, the first five of which are beaten and struck. The first four of these with one stick only and the fifth with both sticks at once. The other three beats are silent.



During the time occupied by the five minims and three rests the soldier takes one pace, that is to say, on the first note he places his left foot on the ground, and during the succeeding three notes raises his right foot so as to bring it down on the fifth note. During the three rests, he raises his left foot to recommence another pace as before. Consequently, if the march continues for two thousand five hundred drum beats, the soldier will have covered a league.⁴⁶

⁴⁶ Arbeau, *Orchesography*, 20-21; rhythmic embellishments of the five basic sounding beats are recommended by Arbeau to make the sound ‘more pleasing’, see examples, 22-35; see also Miller, *The Landsknechte*, 38, who says there are three steps for every five drum beats. This indicates a faster coverage of territory to the same beat. Either way, it can be established that marching was a co-ordinated effort which relied on the drum beat.

The 'pace' was a standard unit of measure, said by geometers to be about five feet, but calculated by Arbeau to be only four feet for marching, because the foot completing the first pace is already in position for the second, and so on.

The flute provided signals which soldiers were expected to learn and memorize: 'Every souldier shall diligently observe and learne the distinct and different sounds, of Drums, Fifes and Trumpets, that he may know to answer and obey each of them in time of service.'⁴⁷ 'Sounds' has the specific meaning, even now in English usage, 'to give a call to arms, battle, etc.'⁴⁸ These 'sounds' were specific patterns serving as signals and warnings such as 'advance, retreat, attack', or what direction to take, much the same as hunting horn calls used during the hunt. British regulations published by Ralph Smith in 1557 explain specific fife signals for 'the marche, allarum, approche, assaulte, bataille, retreat, skirmishe, or any other challenge that of necessitie should be knowen.'⁴⁹ Arbeau confirms that carefully chosen signals also identified the individual units, which in the confusion and hubbub of a battle skirmish could mean the difference between life and death for a soldier searching for his comrades. Improvisation in this situation is out of the question.

the sounds serve as signal and warning to the soldiers, to break camp, to advance, to retreat, and gives them heart, daring and courage, both to attack the enemy and to defend themselves with vigour. Without them, the men would march in confusion and disorder, which would place them in peril of being defeated by the enemy.⁵⁰

Music off the Battlefield

Soldiers played flutes and drums during times of leisure, in the camps and taverns, for dancing and general merry-making. A drawing dating from the 1480s shows a very large drum being used as a gambling table.⁵¹ Albrecht Dürer's depiction of the Swiss pair playing outdoors for card-playing and dancing soldiers is illustrated and discussed above (see Ill. 2.2.3).

The late fifteenth-century Flemish theorist Johannes Tinctoris wrote: 'wind instruments could be heard day and night in the soldiers' camps and in the towns'.⁵² Although he does not

⁴⁷ Quoted from the Earl of Arundel and Surrey, *Lawes and Ordinances of Warre (1639)*, see Raoul Camus, *Military Music of the American Revolution*, ch. 1, 'European Antecedents', 16.

⁴⁸ *OED*, 'sounds'.

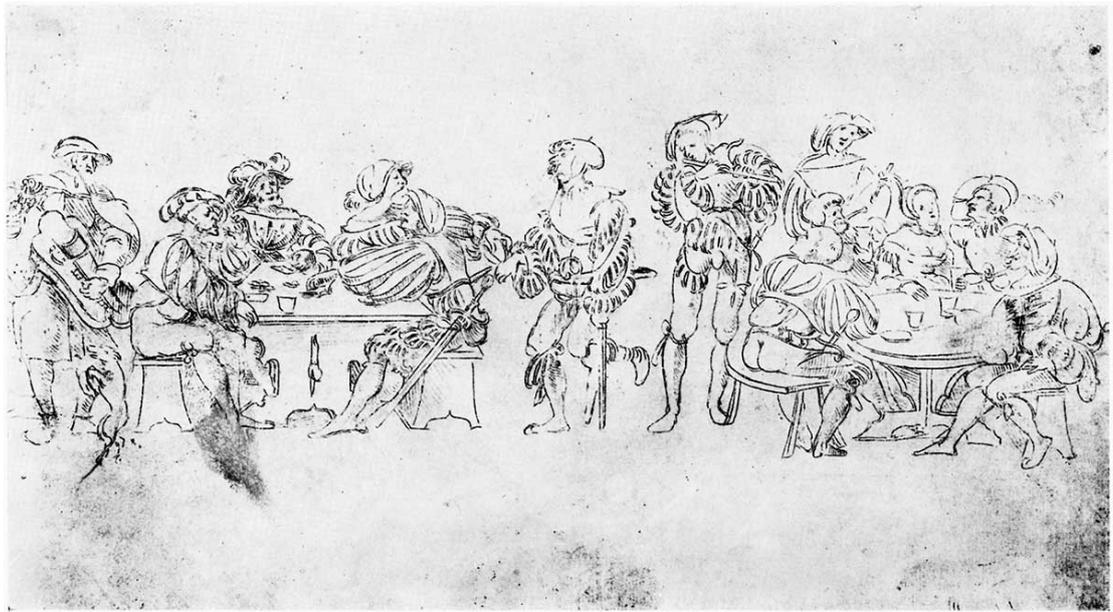
⁴⁹ Quoted in Edward H. Tarr, 'Military calls', *GMO*, 316.

⁵⁰ Arbeau, *Orchesography*, 20.

⁵¹ Depicted in Miller, *The Landesknecchte*, 40.

⁵² *De inventione et usu musicae* (1485), quoted in Isabel le Cazeaux, *French Music in the Fifteenth and Sixteenth Centuries* (Oxford, 1975), 142-3.

specifically name flutes, it is likely that they were among the wind instruments he heard. The French chronicler Georges Chastellain (1405-75) tells us that the Duke of Burgundy's forces sang and played 'the flute and other instruments' during the siege of Neuss, June 1474.⁵³ According to a sixteenth-century English source, *The Art of Warre*, by Ralph Smith, ca. 1557, the Swiss pair were responsible for signalling 'drinking up time', a practice which could explain the large number of paintings showing the Swiss pair playing in taverns, among which 2.2.21 is a representative example.⁵⁴



Ill. 2.2.21. Anonymous drawing (ca. 1510-20), *Zechende Landsknecht emit Dirnen*, showing the Swiss pair playing for dancers and prostitutes in a tavern.

Dancing outdoors to the accompaniment of the Swiss pair is another commonly depicted pastime. Soldiers are shown holding hands with the camp women and dancing in a line or circle. Perhaps they are dancing the *bransle*, which Arbeau describes as a circle or line dance: 'When you commence a *bransle* several others will join you ... and the last to arrive will take your left hand and it will thus become a round dance...he who leads the dance always remains in front when it is not a round dance'.⁵⁵

⁵³ André Pirro, *Histoire de la Musique de la Fin du XIVe Siècle à la Fin du XVIe* (Paris, 1940), 116-17.

⁵⁴ See H. G. Farmer, *The Rise and Development of Military Music* (London, 1912), 37, who quotes British regulations from Smith's *The art of warre*; the tavern drawing above is reproduced in Walter Salmen, *Musikleben im 16. Jahrhundert: Musikgeschichte in Bildern*, Band. 9 (Leipzig, 1976), 96-7.

⁵⁵ Arbeau, *Orchesography*, 130. For a discussion and examples of the various types of *bransles*, see Bernard Thomas, *The Attaignant Dance Prints V* (London, 1972); four-part arrangements of the tunes were published by Tylman Susato, *Danserye* (1551), Jacques Moderne, *Musique de Joye* (ca. 1540) and Pierre Attaignant, *Danceries* (1550).

A graphic and chilling reminder of the dual function of the Swiss pair as warriors and entertainers is illustrated in Ill. 2.2.22 below. This depicts a double revelry, celebrating the victory of the Swiss over the French in 1519, with circle dancing on the left, accompanied by the Swiss pair, and jubilant Swiss pike troops on the right, while the city burns in the background.



Ill. 2.2.22. Godefroy le Batave (fl.1515-26), *Departure of the Helvetians*, 1519, Paris or Blois.⁵⁶

⁵⁶ See François du Moulin, *Les Commentaires de la guerre gallique*, London British Library, Harley 6205, fol. 9v.

The Music of the Swiss Pair

The music played by the Swiss pair during their military campaigns falls into three categories: battle signals (which I have shown were memorized and not subject to improvisation of any kind, due to the importance of imparting precise instructions during battle); marches, which according to Arbeau were ‘improvised to please themselves’ but were probably based on memorized stock rhythms and melodic patterns; and dance music, for which there is ample pictorial evidence of the Swiss pair playing for dancing and entertainments in the humble settings of military camps and taverns.

Battle Signals

Military handbooks from England, Italy, Germany and France identified signals used for battle by flutes, drums, and trumpets.⁵⁷ These books do not preserve any notated music, but from the descriptions it is clear that the signals were carefully chosen and learned to convey specific commands on the field. Peter Whitehorne (1573) advised the captain that it is ‘with sounde of the trompette’ that ‘he shall cause the Souldiour to be advertised and taught to know’; Robert Barrick (1598) taught that the soldier was to learn the ‘severall soundes of the Drum whereby to obey to that which is commanded’.⁵⁸

In England, *Rules and Ordynances for the Warre*, 1544, published for the French campaigns, mentions ‘blowing of hornes or whisteling or great noyse...every horseman at the first blast of the trumpette shall sadle or cause to be saddled his horse, at the seconde to brydell, at the third to leape on his horse backe...’. A second set of rules in *The art of warre, ca. 1557*, for fifes and drums, mentioned calls for ‘marche’, ‘allarum’, ‘approche’, ‘assaulte’, ‘battaile’, ‘retreate’, and ‘skirmishe’.⁵⁹

Some military trumpet calls appear in Bendinelli’s *Tutte l’arte della trombetta* (1614) and in Mersenne’s *Harmonie universelle* (1636). These were simple calls based on the harmonic series, and although they are for trumpet, they are similar to the signals which were

⁵⁷ The books are described in ‘military calls’, *GMO* and several are discussed in Farmer, *The Rise and Development of Military Music*, 37-41. Luca Verzulli, ‘Il flauto traverse militare: I trattati’, *SIFTS* 2, 1 (1997), 3-11 lists some known battle signals; see also Dagmar Hoffman-Axthelm, ‘Zu Ikonographie und Bedeutungsgeschichte von Flöte und Trommel in Mittelalter und Renaissance’, *BJfHM*, 7 (1983), 84-118.

⁵⁸ ‘Military calls’, *GMO*.

⁵⁹ William Garrard, *The Arte of Warre* (1591 ed.), accessed from Early English Books On Line (EEBO; STC/11625).

Phif-fres souf-fles phi-fres souf-fles trap - pes ta - - bours,tour- nes,viv-res fai-tes vos
 tours phif-fres souf - fles frap-pes ta - bours poul ses jou - es,tour-nes viv-res fai-tes vos tours phif-fres souf -
 fles frap pes ta - bours,tour-nes viv-res fai-tes vos tours,phif-fres souf-fles souf - fles jou-es pat-tes tours jours...

Ex. 2.2.2. Clément Janequin, ‘La guerre’ (Paris, Pierre Attaignant, 1528), bars 44-58.

Of particular interest is a section in which the voices imitate each other in thirds on the syllables *fre re le le lan fran* and *fa ri ra ra* (see Ex. 2.2.3). This close and simple imitation could be a remnant of military flutes playing simple imitative signals, when more than one flute was present on the field. The syllables Janequin uses seem to have been chosen deliberately to imitate flute playing; they are similar to the articulation syllables recommended by Arbeau for playing his military march on the flute, and the articulation syllables described by sixteenth-century wind instrument instruction books by Dalla Casa, Rognono and others (see Ch. 4.8).

Fan fre re le le lan fan fre re le le lan fan fan fan
 6
 fa ri ra ri fa ri ra fa ri ra ra fa ri ra ra fa ri ra ra...

Ex. 2.2.3. Clément Janequin, ‘La guerre’ (Paris, Pierre Attaignant, 1528), b. 1-10.

Janequin’s chanson engendered a number of imitations. A few representative examples are: Tomaso Cimello’s villanesca a3, ‘Venimo tre soldati’ (also called ‘battaglia alla villanesca’), 1545, which is a parody of Janequin’s chanson, scored for high voices,⁶² and a number of battle pavans for four-part instrumental ensemble.⁶³ Jacques Moderne’s *Musicque de Joye* (Lyons ca. 1544) includes the battle pavan, and lists ‘flutes’ on the title page among the suitable instruments for performing the dances: *Musicque de Joye. Appropriée tant a la voix humaine, que pour apprendre a sonner Espinetes, Violons et Fleustes. Avec basses dances,*

⁶² The music is edited by Donna Cardamone, *RRMR* (2001) *Collected Secular Works of Cimello*; for discussion see Donna Cardamone, *The Canzone Villanesca alla Napolitana* (Ann Arbor), 148-151.

⁶³ Howard Mayer Brown, *IMPBS*, 503, lists all the known sixteenth-century instrumental ‘battle’ pieces, many of which are for plucked instruments. Luca Verzulli, ‘Lo Stile del Flauto Militare nelle ‘Battaglie’ in Musica’, *SIFTS* 4, number 3 (December, 1999), 7-10, records battle pieces for lute, harpsichord and other instruments from seventeenth and eighteenth century sources.

pavanes, gaillardes, et branles⁶⁴ Whether these *fleustes* were transverse flutes or recorders is not clear, since the ambiguous term ‘flute’ embraced both in France at that time. Other instrumental arrangements of the pavan, without suggested instrumentation but playable on flutes, include: Tilman Susato, ‘La bataille, pavane V’ (*Danserye*, 1551), Claude Gervaise, ‘Pavanne’ and ‘Gaillarde de la guerre’ (*Troisième Livre de Dancieries*, 1557); and Pierre Phalese, ‘Pavane de la bataille’ (Antwerp, 1583). A number of battle canzonas are in similar style: Matthias Werrecore wrote his ‘Bataglia Italiana’ to celebrate the defeat of the French at the Battle of Pavia, 1525; Annibale Padovano, Andrea Gabrieli and Banchieri each wrote a polyphonic ‘Battaglia’ for instruments. Two bicinia ‘Sopra la battaglia’ in *Primo libro a due voci* by Bernadino Lupacchino and Joan Maria Tasso (1559) fit well on two flutes.

The polyphonic battle genre persisted into the seventeenth and eighteenth centuries in which it is possible to trace and compare more flute signals.⁶⁵ Of all the surviving battle pieces, Janequin’s chanson is the most useful for this purpose, due to the presence of text. From these polyphonic art pieces, an impression emerges of the kinds of military battle signals which may have been used by the Swiss pair.

Marching music

All of the polyphonic battle pieces mentioned above are artfully composed, and we cannot say for certain that these preserve anything more than fleeting allusions to the signals flutes might have played on the battlefield. Arbeau preserves a fully written-out monophonic example of music the Swiss pair played for marching (or at least, an imitation of marching). Although a relatively late source, it is the only printed example of monophonic ‘military’ music for the Swiss pair – although we should bear in mind that since Arbeau is a dance treatise and preserves music for dancing, his piece may be overly ‘composed’. Nevertheless, his monophonic tabulations of ‘warlike music’ give some idea of how the Swiss pair may have improvised while marching.⁶⁶ Arbeau’s illustration of a flute player and a drummer alongside two pikemen, along with his colourful descriptions of ‘battle music’, puts the musicians firmly in a military context.

⁶⁴ Moderne’s publication is not dated; RISM, *Recueils Imprimés XVIe-XVIIe Siècles*, gives a date of [ca. 1550₂₄] for this source, but Samuel Pogue, ed., *Musicque de Joye* (Peer, 1991), 5, argues for an earlier date of 1544 because of the printer’s mark on the title.

⁶⁵ See examples and discussion in Nancy Hadden, ‘The Flute in the Seventeenth Century’, *From Renaissance to Baroque*, 122-125.

⁶⁶ Thoinot Arbeau, *Orchesography*, 19-46.



Ill. 2.2.23. Thoinot Arbeau, *Orchesographie*, 1588, Swiss pair with pikemen.

Arbeau: It is not our intention to deal with military art here ... I shall only tell you this, that besides marches, saltations and war dances, the drummer employs a succession of lighter and livelier beats, intermingled with loud blows of the sticks which sound like discharges of arquebus ...

When soldiers approach the enemy, to join battle they close ranks to form a solid mass. The drummer beats crotchets accompanied by one or two *phiffres* ...

What we call the *phiffre* is a little transverse flute with six holes used by the Germans and the Swiss, and as the bore is very narrow, only the thickness of a pistol bullet, it has a shrill note ... those who play them improvise to please themselves and it suffices for them to keep time with the sound of the drum.⁶⁷

Arbeau takes care to differentiate ‘military art’ from ‘marches, saltations and war dances’. His musical tabulations for *phiffre* and drum are not intended for military use, but for marching. These can be ‘improvised to please themselves’. While improvisation is certainly plausible for marching or ceremonial occasions, I have suggested that the possibility of such improvising on the battle field did not exist (see p. 84).

In spite of Arbeau’s comment that marches can be improvised, he provides a fully written-out piece, made up of short repetitive patterns, calling it ‘Tabulation for playing the *phiffre* in the third mode’. He describes the third mode, as the ‘most suitable for warlike music’.⁶⁸ It is rather

⁶⁷ Arbeau, *Orchesography*, 37-39.

⁶⁸ Arbeau, *Orchesography*, 39.

puzzling, therefore, that his tabulation cannot be described as being in the third, or Phrygian, mode; the melody has a compass of c' to e'' , with the main stopping places on C, E, G and occasionally D.

The music follows precisely the pattern of the typical 'five-beat march' discussed above (p. 83-4). There is an absence of complicated rapid diminutions. Arbeau's second 'tabulation' demonstrates how to adapt the same melodic material to triple metre. The opening bars of each are shown below (Ex. 2.2.4 and 2.2.5)



Ex. 2.2.4. Arbeau, 'Tabulation for playing the *phiffre* in the third mode'.



Ex. 2.2.5. Arbeau, 'Tabulation for playing the *phiffre* in the third mode in triple time', b. 1-21.

Arbeau issued a 'warning' that his tabulations should be tongued with syllables *te, te, te* or *tere, tere, tere*, rather than the softer tonguings *rele rele rele*, because the sound of *te* is shriller, harsher and 'more war-like'.⁶⁹ This information is important not only for interpreting the musical style but also as an aid in determining the fastest tempo at which the march can be played. The fastest speed at which the written patterns can be sustained comfortably on the flute using *te* for crotchets and *tere* for quavers is around $\text{♩} = 80$. An even slower speed is in keeping with the pace at which soldiers could march whilst wearing armour and carrying the long cumbersome weapons and enormous banners characteristic of their equipment – a pikeman's suit of half- or three-quarters armour weighed approximately 35 pounds; a full suit of armour weighed 60 pounds.⁷⁰ The music is therefore deliberate and melodic rather than

⁶⁹ Arbeau, *Orchesography*, 40.

⁷⁰ Stephen Bull, *An Historical Guide to Arms and Armour* (New York, 1991), 143; marching speeds are also discussed in Derek Lindo, 'The Renaissance Military Flute', *RFCN*, 1 (London, 1988), 3-5 and Raoul Camus, *Military Music of the American Revolution*, chapter 1 'European Antecedents', 16.

virtuosic, reminding us that the main function of the Swiss pair was to assist in setting a disciplined pace for the marching soldiers which enabled them to stay together.

Two more sixteenth-century pieces imitate the Swiss pair. William Byrd's 'The Battle' from *My Lady Nevells Book* (1591) included a section labelled 'The flute and the droom'. The musical patterns used by Byrd are nearly identical to Arbeau's intabulations. Aurelio Virgiliano's 'Ricerca sesta per traversa' in *Il Dolcimelo* (ca. 1600), is one of thirteen solo pieces written interchangeably for violin, cornett, recorder and flute, but it is the only one designated for *traversa* as the first choice of instrument. Although the title makes no direct reference to battle music, the music imitates military signals.⁷¹ Virgiliano used similar patterns to Arbeau in a somewhat freer way, with dotted rhythms and running six-note quaver figures. It seems likely that all three – Arbeau, Byrd and Virgiliano – were recording recognized idiomatic figurations associated with the Swiss pair. The examples below (Ex. 2.2.6-8) compare some passages with remarkably similar figurations, from Arbeau's tabulations to the more artful compositions of Virgiliano and Byrd; the figurations of Arbeau and Byrd are labelled *a*, *b*, *c*, *d* for purposes of comparison. Virgiliano's are printed separately below.

The image displays four musical examples, labeled a, b, c, and d, in 3/4 time. Example a is marked '[played 8va]' and shows a melody with a six-note quaver figure. Examples b, c, and d show variations of similar rhythmic patterns.

Ex. 2.2.6. Arbeau, excerpts from 'Tabulation for playing the *phiffre* in triple time'.

⁷¹ See Aurelio Virgiliano, *Thirteen Ricercate from Il Dolcimelo*, ed. Bernard Thomas (London, 1980); William Byrd, *The Battle*, ed. A. Brown, *William Byrd: Keyboard Music II*, Musica Britannica, 28 (London, 1971; rev. 2/1976), 94.

a. 

b. 

c. 

d. 

Ex. 2.2.7. William Byrd, *The Battle*, passages from 'The flute and the droom'.



Ex. 2.2.8. Aurelio Virgiliano, *Il Dolcimelo*, passage from 'Ricerca per traversa'.

Chapter 2.3

Beyond the Battlefield: The Spread of the Swiss Pair

The Swiss Pair at Court

The Swiss pair held an important role in court music from the late fifteenth century onwards. Although it is unlikely that the Swiss mercenary flautists and drummers had access to the written music and probably could not read it, they must have developed basic musical and technical skills from having been trained to play battle signals, marches and dance tunes, which would have involved a strong ability to play by ear and from memory. Their music at court was probably much the same as on the field: simple signals to announce the entrance of food or important persons, improvised marches for weddings and processions, and probably the most important of their duties, playing for dancing.

Instruments of all kinds are documented at nearly every European court. No wedding, feast or royal entry would have taken place without the sound of music. Favourite monophonic instruments in the fifteenth century were bagpipes and pipe and tabor, while polyphonic ensembles were made up either of soft (*bas*) instruments – pairs of fiddles, lute and harp, lute duo, or a consort of recorders; or loud (*haut*) instruments – trumpets for fanfares, or ensembles of shawms and trombones or slide trumpets for dancing and banquet music. Soft and loud instruments did not perform together, despite the impression given by some pictures.⁷²

The ensemble which held pride of place was the *alta capella*, a trio of professional players of treble shawm, bombard and slide trumpet or sackbut, who were mainly (and lucratively) employed to provide loud music for all manner of court entertainments.⁷³ Their performance skills were legendary, particularly their ability to improvise polyphonically, a

⁷² Several studies focus on the subject of performance practices of loud and soft instruments; see especially Keith Polk, *German Instrumental Music of the Late Middle Ages* (Cambridge, 1992), especially ‘German soft music’, 13-45, and ‘German loud music’, 45-87. See also the early and ground-breaking article by Edmund Bowles ‘Haut and bas; the grouping of musical instruments in the Middle Ages’ *Musica Disciplina*, 8 (1954), 115-40. A more recent article which treats this subject is Herbert Myers, ‘The Meaning of “Consort”’, *Musicque de Joye* (Utrecht, 2005), 31-60.

⁷³ See Lewis Lockwood, *Music in Renaissance Ferrara 1400-1505* (Oxford, 1984) 66-73, 139-148, 177-184, for a discussion of the *alta capella* and its duties at the Ferrarese court, one of the most outstanding and glittering cultural centres in the early Renaissance, employing large numbers of highly paid instrumentalists. For recorded examples of the *alta capella*, see Les Haulz et les Bas, *Gothic Winds* (Christophorus 77193, 1996) and *Alta Danza* (Christophorus 77208, 1998); and Ciaramella, *Sacred and Secular Music from Renaissance Germany* (Naxos 8-557627, 2006).

practice which followed the same theoretical principles of counterpoint, cadential structure and form, and utilized the same melodic and formulaic materials as composed music of the time.⁷⁴ In keeping with the practice by most instrumentalists of the time, the music performed by the *alta capella* was improvised – or at least memorized – from a stock of internationally known songs and dance tunes. But some were able to read music, as Lewis Lockwood has shown in his study of the ‘Casanatense’ manuscript, a collection of instrumental pieces known to have been compiled *ca.* 1480-90 for the express use of the *alta capella* at the court of Ferrara.⁷⁵

French court references from the 1480s onward identify flutes and drums performing for banquets, weddings and other festivities. Unlike the *alta capella*, the Swiss pair were not members of the court establishment, nor did they perform with other instruments in court ensembles; rather they were hired as ‘free-lance’ musicians. Like the *alta capella*, the Swiss pair belonged to the *haut* or loud instrument group, and the musical contexts in which they played were the same: processions, grand entries and banquets. ‘Drums, flutes and trumpets’ (*tambours, fifres et trompettes*) announced the entry of the food during a banquet for the baptism of Antoine, eldest son of René II of Lorraine, on 4 June, 1489, the same year in which the French king Charles VIII established his corps of *fifres et tabourins Suisses* (see Ch. 2.1). Two drummers and a flute player, who were ‘Germans’ (‘deux aultres sonneurs de tabourin et ung sonneur de fluste, quelx estoit Almans’) performed at the wedding of Charles VIII and Anne of Brittany on 13 December, 1491 in Rennes.⁷⁶

The *fifres et tabourins Suisse* were retained by Louis XII when he formed his official military band, the *Musicque de la Grande Ecurie*, in 1514. The *Ecurie*, meaning ‘stable’, conjures up an image of a rough and rude place housing the king’s horses. But it was a far cry from that. The musicians attached to the *Grande Ecurie* were amongst the best wind and brass players, playing for state occasions, military events and grand public ceremonies out of doors and in the public areas at court. The members of the *Ecurie* also accompanied the king on his travels.

The Swiss flutes and drums continued to be employed in the *Ecurie*, along with trumpets, sackbuts, *hautbois* and violins, during the reign of the pleasure-loving king, François I (reigned 1515-1547).⁷⁷ In 1515, payment records show that François I maintained three

⁷⁴ See Adam K. Gilbert, ‘The Improvising *alta capella*, *ca.* 1500: Paradigms and Procedures’, *BJbHM*, 29 (2005), 109-124, for an informative discussion of the materials and styles of improvisation and its relationship to composed polyphony.

⁷⁵ See Lockwood’s discussion of the Casanatense manuscript and its use by the *alta capella* in *Music in Renaissance Ferrara 1400-1505* (Oxford, 1984), 266-72.

⁷⁶ Jane Bowers, “‘Fläüste traverseinne’”, 17.

⁷⁷ Documented by Isabelle Cazeaux, *French Music*, 20-21; Christelle Cazaux, *La musique a la cour de François I* (Paris, 2002), 43; Henry Prunieres, ‘La musique de la chamber et de l’ecurie sous le regne de Francois I, 1516-1547’, *L’Année musicale*, 1 (1911).

Swiss/German *fiffres et tabourins*, ‘tire de l’allemand Eidgenossen’.⁷⁸ In 1516 there were five.⁷⁹ The identification of the flutes and drums as *Eidgenossen* – the term used to describe the Swiss citizen-soldiers as comrades-in-arms – shows that these salaried musicians were Swiss military players. Extant records (incomplete or non-existent as they are for some years) list some players’ names over a period of about 20 years: Bernard Peffier and Leonard de Combe between 1526 and 1547 were joined by Pierre Duval in 1532, who was still there in 1547, and in 1542 by Nicolas and Gaspart Chansemelles. Peffier and the two Chansemelles were known to be Swiss.⁸⁰

The Swiss pair spread their services to other European courts during the first decades of the sixteenth century. Regular payments to the musicians of the Swiss pair appear in court and city payroll records in Germany. A Swiss pair was among those paid at regular intervals at the Brandenburg court in 1503 and also at the Bavarian court in 1509, and a ‘Swiss band’ of three players was hired at the court of Württemberg in 1510.⁸¹

English court accounts record the presence of the Swiss pair at Henry VIII’s court (1509-45). The English chronicler Holinshed records a masked ball given by Henry VIII in 1510: ‘there came in a drumme and a fife appareiled in white damaske...followed with torches’.⁸² An account book for 1519 records the earliest known payment to a flute-playing minstrel of the Queen’s chamber, ‘Jacques the phipher’ – nothing more about him is known.⁸³ After this date, their presence in the account books indicates that ‘fyfes and drums’ were regular paid members of the King’s household. In 1530, Henry VIII visited Cardinal Wolsey, and took part in ‘a maske with a dozen maskers...having sixteen torch bearers...with suche a number of dromes and fyves as I have seldome seen together at oon tyme in any maske.’⁸⁴ However, there is a curious lack of documentation for the Swiss pair in English military records (according to the historian James Raymond, at no time during Henry VIII’s reign was there an

⁷⁸ Christelle Cazaux, *La musique a la cour de François I* (Paris, 2002), 134.

⁷⁹ Henry Prunieres, ‘La musique de la chambre et de l’écurie sous le règne de François 1er’, *L’Année musicale* 1 (1911), 235-6. According to Jules Ecorcheville, ‘Quelques documents sur la musique de la grande écurie du Roi’ *Sammelbände der Internationalen Musikgesellschaft* ii (1900-1911), 608-42, five flutes and drums were still maintained in the 1540s, increased to eight in 1571, and remained essentially the same up to 1690, during the reign of Louis XIV, after which the *Ecurie* declined.

⁸⁰ C. Cazaux, *La musique a la cour de François I*, 43 and 111.

⁸¹ Keith Polk, *German Instrumental Music*, 101-2.

⁸² John Stevens, *Music and Poetry in the Tudor Court*, 247.

⁸³ Jacques is named as one of the minstrels in ‘New Year’s gifts’, ‘the King’s Book of Payments’, 1 January, 1519, quoted in John Stevens, *Music and Poetry in the Early Tudor Court* (London, 1961), 300.

⁸⁴ See John Stevens, *Music and Poetry in the Early Tudor Court*, 247. The tone of the 1530 record indicates that the Swiss pair was a common presence at Tudor court masques. See also Peter Holman, *Four and Twenty Fiddlers* (Oxford, 1993), 53-57, who lists the most important court documents relating to musicians at the court of Henry VIII.

established standing army, which could account for the lack of records for the military Swiss pair in England).⁸⁵

Henry VIII must have been familiar with the Swiss pair from his contact with Emperor Maximilian I, and later on, with François I, during his military campaigns. In the joint campaign waged by Maximilian I and Henry VIII in 1513 against France, Henry came face to face with the French and German armies and the glorious Swiss pike square. An anonymous painting in the Royal Collection records the meeting of Henry and Maximilian, and depicts their armies and the battle with the French.⁸⁶ The Swiss pike square on the French side is prominently featured – no flutes and drums are visible – but Henry must have seen and heard them during the course of the campaigns.

A second and more famous excursion during which Henry VIII would have heard flutes and drums *en masse* was the conciliatory meeting between Henry VIII and François I at the encampment of the *Drap d'Or* (Field of Cloth of Gold), which took place in the summer of 1520 at Guisnes. The French court *fiffres et tabourins* took part; these would have been members of the *Ecurie*, who always travelled with the French king. On 7 June, the French and English kings were joined by princes and noblemen for a banquet, to the sound of 'trompettes et clarions, hautbois et fiffres'.⁸⁷ On 23 June, a mass was celebrated at the camp. French and English singers sang different sections of the mass – each sang when their own organist began to play; the French organist was almost certainly Pierre Mouton.⁸⁸ The Kyrie was performed by the French chapel, the English sang the Gloria, and so on to the end. There is no record of what music was performed. It is tempting to imagine that if Mouton was at Guisnes, he would have supplied some of his own motet and mass settings, just as he had done at the meeting of François I and Pope Leo X in Bologna to discuss the peace between France and Italy in 1515.⁸⁹

⁸⁵ See James Raymond, *Henry VIII's Military Revolution: The Armies of Sixteenth-Century Britain and Europe* (London, 2007), 114; only the accounts for the Treasury of the Chamber and Exchequer of Receipt date from the beginning of Henry's reign in 1509; see the Exchequer of Receipt accounts for 1509-1642, *GB-Lpro* E405/82-182, transcribed by Andrew Ashbee, *Records of English Court Music*, vi (Aldershot, 1992), 172-224; the treasury accounts for 1509-18 are in *GB-Lpro*, E36/215 and a copy is in *GB-Lbl*, Add. Ms. 2148; for 1518-21, *GB-Lpro* E36/232; for 1525/26, Egerton Ms. 2604, fol. 1r..

⁸⁶ Reproduced in G. W. O. Woodward, *King Henry VIII* (London, 1969), 8-9.

⁸⁷ Dom Bernard de Montfaucon, *Les Monumens de la monarchie française, qui comprennent l'histoire de la France*, 4 (Paris, 1732), 172; Bowers, 'Flaute traverseinne', 18.

⁸⁸ Michel Brenet, 'Notes sur l'introduction des instruments dans les églises de France', *Riemann-Festschrift* (Leipzig, 1909), 282. According to Howard Mayer Brown, 'Mouton', *GMO*, there is no definite proof of Mouton's presence, but he was the official court organist and travelled with the king regularly, so it was likely that he was the organist.

⁸⁹ Mouton may have composed his *Missa* 'Quem dicunt homines' for this occasion, and Leo X was known to be fond of Mouton's masses; see Lewis Lockwood, 'Jean Mouton and Jean Michel: New Evidence on French Music and Musicians in Italy, 1505-1520', *JAMS*, 32 (1979), 191-246.

A contemporary description of the performance at Guisnes concludes with the following reference to flutes:

Le Patrem par ceulx de France là où estoient les corps de sabbutes et fiffres du Roy avecques les chanters et les faisoit si bon oyr qu'il es impossible de oyr plus grande melodye.

The Patrem [was performed] by the French, who were accompanied by the trombones and flutes of the King, with the singers, and they made such a good sound that it is impossible to hear more sublime music.⁹⁰

The 'Patrem' of the Mass which was so sublimely performed by the singers, flutes and sackbuts would have been from the section of the Credo text: 'Credo in unum Deum, Patrem omnipotentem, factorem coeli et terrae, visibilium omnium et invisibilium...'

The report of flutes 'accompanying' the singing of sacred music raises the question of how they might have performed. They may have been trained to read – or to play from memory – notated music during their tenure as official court musicians. If the Mass was performed polyphonically, the flutes may have doubled the singers on the upper parts, while trombones played the lower ones.

Sections of the Mass may also have been sung in plainchant. If so, flutes and trombones could have performed the Patrem with some kind of improvised note-against-note counterpoint. Keith Polk has explained such practices as they were taught by Johannes Tinctoris in his *Liber de arte contrapuncti* (1477) and Andreas Ornithoparcus in *Musice active micrologus* (1517), and used by both singers and instrumentalists (such as the organist Conrad Paumann and the members of the *alta capella*).⁹¹

The basic principles governing the rules of counterpoint are laid out in Johannes Tinctoris's *Liber de arte contrapuncti* (1477).⁹² Tinctoris designed his book as a course of instruction, first for playing in two parts, note against note, above and below a *cantus firmus*,

⁹⁰ Michel Brenet, 'Notes sur l'introduction des instruments dans les eglises de France' (1909), 282; Paul Kast, 'Remarques sur la musique et les musiciens de la chapelle de François 1er au Camp du drap d'or', *Les Fêtes de la Renaissance, II: Fêtes et ceremonies au temps de Charles-Quint* (Paris, 1960), 136; Isabel Cazeaux, *French Music*, 63; Jane Bowers, 'Flaute traverseinne', 18-19.

⁹¹ See Keith Polk, *German Instrumental Music, 172-177*; Johannes Tinctoris, *Liber de arte contrapuncti* (1477), trans. Albert Seay, *The Art of Counterpoint* (American Institute of Musicology, 1961); Andreas Ornithoparcus, *Musice active micrologus* (1517), trans. John Dowland, *Andreas Ornithoparcus, His Micrologus...* (London, 1609).

⁹² Johannes Tinctoris, *Liber de arte contrapuncti* (1477), trans. Albert Seay as *The Art of Counterpoint* (American Institute of Musicology, 1961).

and then moving on to three parts, also note against note. After these principles were mastered, the student moved on to florid counterpoint over a *cantus firmus*, often based on a popular song, *basse dance* tenor or plainchant melody.

One method from Tinctoris sets the *cantus firmus* in the middle voice: ‘it suffices that each voice make consonances with the tenor’ – the intervals between the voices were not subject to control except at cadences.⁹³

a. tenor *cantus firmus* (used for the middle line in b., below):



Dance Music and the Swiss Pair

Among the most important duties of the Swiss pair was playing for dancing at court, as numerous pictures and written accounts attest. It was the *basse dance*, a stately, striding couple-dance in slow triple time involving intricate sequences of steps, which loomed large as a court activity during the fifteenth and early sixteenth centuries.⁹⁵ Daniel Hertz describes its ‘classic phase’ as corresponding to the heyday of the Burgundian court under Philip the Good (1396-1467) and Charles the Bold (1433-77). Maximilian I also favoured the *basse dance* at his courts in Germany and Austria. In a modified form, it remained popular well into the sixteenth century. Music for the *basse dance* was improvised over a written tenor. Just how this was done will be discussed below, but first it is important to provide some background information on the sources and history of the dance and its music.

Two fifteenth-century sources preserve the ‘classic’ Burgundian *basse dance* steps which were choreographed into elaborate dances of great length.⁹⁶ The so-called Brussels manuscript, belonging to Maximilian I’s daughter Margaret of Austria, was copied in the late fifteenth century but represents dances from several decades earlier; another version of the same treatise was printed at Paris by Michel Toulouze in 1496.⁹⁷ The oldest *basse dance* type and the one which makes up the majority in both manuscripts is the so-called *incommune*, where each dance is individually choreographed. The dance steps are carefully notated, but the only music supplied alongside the dance instructions is a tenor melody, notated in longs and breves.

Three dances in the Brussels manuscript do not fit the *incommune* type, because the tenors are written in a variety of smaller note values. These are ‘la dance de Ravestain’, ‘la danse de cleves’ and ‘la franchoise nouvelle’. Daniel Hertz has shown that the three unusual dances are not in Toulouze because they were not written in time; they were probably copied

⁹⁵ For the history and music of the *basse dance*, see Daniel Hertz, ‘The Basse Dance: its Evolution circa 1450-1550’, *AM*, 6 (1958-63), 287-340; Daniel Hertz, ‘Hoftanz and Basse Dance’, *JAMS*, 19 (1966), 13ff., and Frederick Crane, *Materials for the Study of the Fifteenth Century Basse Dance* (Brooklyn, 1968). The following discussion of the *basse dance* is based on these studies.

⁹⁶ All of the manuscript and printed sources of the *basse dance* are listed and discussed in Crane, *Materials*, Chapter 2, ‘The sources’, 3-30.

⁹⁷ The Brussels manuscript is catalogued as B: Br 9085, the Toulouze print, ca. 1481, is preserved in a single copy in the Royal College of Physicians, London. For modern editions of both the Brussels and Toulouze manuscripts see James Jackman, *Fifteenth Century Basse Dances*, The Wellesley Edition, no. 6 (Wellesley, Massachusetts, 1964).

into the manuscript *ca.* 1501, while Margaret was in Spain as the wife of Philip of Castile.⁹⁸ The tenor melodies are more lively than the earlier long and breve tenors, with a unity achieved by repetition of short symmetrical sections. The dances are choreographed, and the music is still based on a tenor *cantus firmus* with two improvised outer parts, but the tenors exhibit a more repetitive and ‘ordered’ style.

The slowness and simplicity of the notated tenors for the *basse dance incommune* belie the complexity of their realization in performance. The musical practice involves not only playing *cantus firmus* tenors from memory but also improvising two contrapuntal parts, usually one above and one below the tenor, to enhance and reflect the steps and choreography of the dance. From the mid-fifteenth century the *alta capella*, professional court wind players, justly famous for the skill and sophistication of their improvising techniques, perfected the art of transforming the long, slow-moving tenor *cantus firmus*, played by the bombard, into improvised polyphony, with the treble shawm and slide trumpet or sackbut weaving independent counterpoint above and below the bombard melody. More probably this involved a good measure of memorizing rather than improvising their materials.

No treatise shows how instrumental ensemble improvisation was learned, but indirect evidence exists in keyboard sources and written repertory, which may offer some idea of what the ‘improvised’ music might have sounded like.⁹⁹ A small corpus of composed three-voiced polyphony in Trent Ms. 87-92, probably dating from *ca.* 1450, preserves written examples which may give some idea of the improvisatory style of the *alta capella*.¹⁰⁰ These compositions have the slow-moving *cantus firmus*, usually in the middle voice, and florid counterpoint in the other two voices. Some *basse dance* tunes are found in Trent 87, such as ‘Auxce bon yuore delabonestren’ and ‘T’Andernaken’.¹⁰¹ Frederick Crane documented more than 26 settings of ‘T’Andernaken’; Trent 87 is the oldest, and slightly unusual because the tune is in the lowest part, with the two florid parts above, but still it provides a good example of improvisation and embellishment practices:

⁹⁸ See Daniel Hertz, ‘The Basse Dance: its Evolution circa 1450-1550’, 317-19. In 1495 Maximilian I arranged the marriage of his daughter, Margaret, to Philip, heir to Castille and Aragon; they married in 1501, but Margaret was immediately widowed, returned to Low Countries and remained in perpetual mourning. For a biography of Margeret of Austria, see Bruchet, *Marguerite d’Autriche* (Lille, 1927).

⁹⁹ A detailed and well-presented discussion of the sources and materials of instrumental counterpoint, which sets out a detailed method for how musicians learned to improvise, is in Keith Polk, *German Instrumental Music*, 163-267.

¹⁰⁰ Trent Ms. 87-92, Trent Castello del Buonconsiglio, *ca.* 1445-75. On the textless pieces which were related to the *basse dance* see Crane, 62-7; also see Brian Trowell, ‘Anonymous English Pieces in Trent 87’, *ML*, 42 (1961) 96-7.

¹⁰¹ For discussion of these tunes, see Frederick Crane, *Materials*, 65-6, 103, 105.

Ex. 2.3.2. 'T'Andernaken al op den Rijn', Trent Ms. 87, b. 1-10.

The Buxheim Organ Book also contains similar examples of contrapuntal settings over a *cantus firmus* for keyboard players, and examples of the *basse dance* and sacred and secular songs in two- and three-part counterpoint, some with quite florid embellishments decorating the solo line.¹⁰²

During the 1490s it would appear that the Swiss pair had successfully risen to the challenge of accompanying the *basse dance*, a more sophisticated musical task than signalling or ceremonial fanfares. Several paintings of south-German provenance (Nuremberg, Munich, Strasbourg and Augsburg) document the practice of couples dancing the *basse dance* accompanied by the Swiss pair.¹⁰³

Two paintings from Augsburg are of particular interest because they depict the Swiss pair, dressed in military garb, working alongside other instrumentalists, both soft and loud, dressed in court attire. The first (2.3.1) depicts a *basse dance* ensemble comprising both the Swiss pair and the *alta capella*. The second (2.3.2), by Narziss Renner, similarly depicts the

¹⁰² See the Buxheim Organ Book, Munich, Bayerische Staatsbibliothek, Mus. Ms. 3725, ed. B. Wallner, *Das Erbe Deutscher Musik* (Kassel, 1958), vols. 36-38.

¹⁰³ All surviving paintings of *basse dances* are listed in Frederick Crane, *Materials*, 114-17. Those which depict the Swiss pair are: Michael Wolgemuth (or Wilhelm Pleydenwurff?), *Dancers under curse for dancing on Christmas Eve during Mass*, from Hartmann Schedel, *Liber cronicarum Mundi*, Nuremberg, 1493, fol 187v. , reproduced in Mabel Dolmetsch, *Dances of England and France from 1450 to 1600* (London, 1949), ill. 2, 64; a German, banquet scene woodcut in Vergil, *Opera* (Strasbourg, 1498), reprinted in Schultz fig. 451; an anonymous copper engraving, ca. 1500, *Dance in Munich Palace*, from the court of Albrecht IV, Duke of Bavaria (1467-1508), reprinted in *MGG I*, pl. 53; an anonymous painting, Augsburg, ca. 1500 (Städtische Kunstsammlungen, Inv.-Nr. 3821) and a painting by Narziss Renner, Augsburg, 1522 (Berlin, Kupferstichkabinett), both reprinted in Walter Salmen, *Musikgeschichte im Bildern*, Bd. III, pls. 62 and 63.

Swiss pair performing along with a bagpiper and the *alta capella*, while a trumpeter and lutenist, instruments with entirely different functions, are listening. Although the Renner painting is from the slightly later date of 1522, a banner over the heads of the musicians shows the music of the *basse dance* tenor on which the musicians were presumably improvising, thus documenting performance of the *basse dance incommune* still in 1522. The tune has not been identified.¹⁰⁴



III. 2.3.1. Anonymous painting, Augsburg, 1500, a *basse dance* ensemble playing from the raised platform in the center back of the picture; the Swiss pair is on the right, and the *alta capella* on the left side of the platform.

¹⁰⁴ For discussion of the Augsburg paintings see Daniel Hertz, 'Hoftantz and Basse Dance', 26, and Walter Salmen, *Musikgeschichte im Bildern*, Bd. III, 110.



Ill. 2.3.2. Narziss Renner, 1522, a *basse dance* accompanied by bagpipe and *alta capella*.

Two lutenists and Swiss pair are not playing (lutes are by the banner-bearer, the Swiss pair are at far right, in striped sleeves – the drummer has his back to the picture, the flautist is facing him, holding his flute downward in his left hand).

These illustrations of the Swiss pair, lute, *alta capella* and bagpiper appearing together are probably schematic portrayals of court instrumentalists, like those depicted in the *Triumphzug* of Maximilian I, rather than depictions of actual practice.¹⁰⁵ It is unlikely that such ensembles ever performed together, and regardless of the instruments involved, the improvisatory nature of the music dictated that the *basse dance* was best performed by solo instruments on each part. However, the paintings are evidence that the musicians of the *alta capella* and the Swiss pair were employed at the same courts and may have shared skills and exchanged information about their instruments, repertory and playing techniques. How might the Swiss pair might have performed the *basse dance*, given the limitations imposed by a single flute and drum? Normal practice – by the *alta capella*, for example – was to use the slow moving tenor melody as the basis for polyphonic improvisations above and below it. I suggest that the drum provided the essential *basse dance* rhythm, ♩ ♩ ♩ ♩, while the flute played the tenor *cantus firmus*. Although there is no evidence to suggest that the tenors themselves were ever ornamented by the *alta capella*, the slow moving tenor melody

¹⁰⁵ The *Triumphzug* depictions of groups of disparate instruments pictured together are not representative of actual performance practice; this is discussed in Herbert Myers, “The Idea of “Consort””, 49-51.

would not have been effective played by a lone flute, and would certainly have needed embellishments to create a lively melodic accompaniment for dancing.

Some surprising evidence about the origins of some tenor melodies was documented by Frederick Crane which suggests just such a method of performance. Crane has demonstrated that some of the oldest tenors were closely based on previously composed song tunes. Ex. 2.3.4 below shows one of Crane's examples, which is a comparison of the *basse dance* tenor 'Triste plaisir' from the Brussels manuscript, and the tenor of rondeau 'Triste plaisir et douloureuse joie' by Gilles Binchois, from which the dance derives. The relationship of the song (upper line) and *basse dance* tenor is easily discernable.¹⁰⁶

Ex. 2.3.3. Binchois, 'Triste plaisir', the tenor melody from the *rondeau*, and the *basse dance* tenor, 'Triste plaisir', Brussels manuscript, fol. 15r.

It is possible to imagine that by embellishing the tune in the style of ornamentation similar to that of the *alta capella*, it would make an effective *basse dance* accompaniment by a solo flute, as long as the correct number of beats in longs and breves, supplied by the drum, was adhered to.

Credibility for performing the *basse dance* exactly in this way on the flute and drum is found in Arbeau's *Orchesographie*, where a *basse dance* arrangement of the tenor part from Claudin de Sermisy's chanson, 'Jouyssance vous donneray' is given by Arbeau with the title 'Jouyssance'. The original duple-metre chanson tenor is transformed to a triple-metre melody to fit the correct number of steps for the dance. Arbeau has printed a rhythmic part for the drum and an ornamented flute part (Claudin's original melody is show in Ex. 2.3.4.a and Arbeau's arrangement in Ex. 2.3.4.b).

¹⁰⁶ See Crane, *Materials*, no. 93 and page 113. Crane points out that the text and tune, 'considerably varied', also appears in the 'Bayeux' manuscript (no. 73: 'Triste plaisir') which was compiled *ca.* 1500 at the French court; for the music, see Théodore Gérold, ed., *Le manuscrit de Bayeux* (Strasbourg, 1921, rpt. Geneva, 1979), 86-7.

Ex. 2.3.4.a. Claudin Sermisy, ‘Jouissance vous donneray’ tenor melody (transposed down a fourth for ease of comparison with Arbeau).

Battement du tambour ou tabourin:

Air de la basse-dance:

5

9

[D.C.]

Ex. 2.3.4.b. Arbeau, *basse dance*, ‘Jouissance’ for flute and drum, b. 1-12.¹⁰⁷

The Torch Dance and Its Association with the Swiss Pair

I have pointed out earlier in this chapter that the Swiss pair were often the musicians of choice for celebrations at court, especially weddings. They are first documented playing for a banquet in 1489 (the same year in which the French king Charles VIII established his *fifres et tabourins Suisses*; see Ch. 2.1). In 1491, the Swiss pair performed at the wedding of King Charles himself and Anne of Brittany, thus beginning a long association of the Swiss pair with

¹⁰⁷ See Arbeau, *Orchesography*, 67-74 for the complete *basse dance*.

weddings.¹⁰⁸ More specifically, the Swiss pair seems to have been chosen to play for the torch dances and torch processions which were a traditional part of these festivities.¹⁰⁹

This choice must certainly have to do with the symbolic associations of the flute. I have pointed out in a previous publication the flute's dual personality as a symbol of both the war-like qualities of Mars and the seductive charms of Venus.¹¹⁰ Not only did the flute have a dual personality, the states it symbolised – love and war – were themselves seen as yoked together. This relationship can be traced back to the ancient Greeks and is alluded to in humanist Renaissance paintings and poetry. It finds particular expression in the Roman concept of *militia amoris* (soldiery of love), in which the language of love is couched in military metaphors.¹¹¹ Ovid offers a clear statement of this: 'Militat omnis amans et habet sua castra Cupido' (every lover is a soldier in Cupid's private army).¹¹²

Swords and pikes are obvious symbols of the soldiers' sexual equipment. And as I have made plain in my discussion of the Swiss military, so are transverse flutes.¹¹³ The concept of 'militia amoris' in its female relationship to the flute is graphically presented in the drawing of a female flautist by the Swiss poet, artist and soldier, Niklaus-Manuel Deutsch (1484-1530) (Ill. 2.2.6).¹¹⁴ A voluptuous and seductive but warrior-like female flautist – perhaps meant to represent Athena, goddess of war and the discover of the 'flute' in Greek mythology – plays her flute with vigour. Alpine mountains are visible in the distance behind; a tree stump, resembling (or symbolizing) a large drum, is in the left foreground.

The earliest torch dance depicting the Swiss pair is from a Flemish Book of Hours, *ca.* 1500, preserved in the British Library (Ill. 2.3.3). The scene is nearly identical to Holinshed's description of an English 'maske with torches' which was performed during a wedding celebration at the court of Henry VIII in 1510 (see p. 98 above). Holinshed describes the

¹⁰⁸ An association documented in the Florentine carnival song about the Swiss pair, 'Canto di lanzi', *ca.* 1500: 'Noi fedute in queste terre / Tante belle nozze e feste' (in these lands we have seen so many beautiful wedding feasts and celebrations). The complete text is on p. 68-70 above.

¹⁰⁹ See George Grove, 'Fackeltanz', *GMO*, where it was described as 'marche aux flambeaux' in French; it was still performed as a processional wedding dance by military bands in the nineteenth century; one example given is by Meyerbeer, written for the marriage of the Empress Frederick of Prussia, 25 January, 1858; Spontini and Flotow also wrote torch dances.

¹¹⁰ See Nancy Hadden, 'The transverse flute in the seventeenth century', 125. The association of the flute with Mars and Venus is also made by Mary Rasmussen, 'The Case of Flutes in Holbein's "The Ambassadors"', *EM*, 23 (1995), 114-23.

¹¹¹ I am grateful to Philip Guar for introducing me to the concept of 'militia amoris' and directing me to the sources for Ovid which I have used in this discussion.

¹¹² *Ovid's Amores*, trans. Guy Lee (London, 2000), Book 1 no. 9, ll. 1-2.

¹¹³ See also Dagmar Hoffmann-Axthelm, 'Zu Ikonographie und Bedeutungsgeschichte von Flöte und Trommel in Mittelalter un Renaissance', *BJbHM*, 7 (1983), 89.

¹¹⁴ See Luck, *The History of Switzerland*, 143, for documentation about Deutsch's multiple talents.

dancers, torch bearers, flute and drum and jester as being dressed identically in white, the bride is in fiery red.¹¹⁵



Ill. 2.3.3. Anonymous, Torch dance with Swiss pair, 'Flemish Book of Hours', ca. 1500.

A Belgian tapestry from the late sixteenth century depicts another torch dance procession of a wedding couple with the Swiss pair (Ill. 2.3.4). This one is from the month of February, which, as the last month of the solar year, was especially associated with the fiery torch dance. As in Ill. 2.3.3, the Belgian tapestry has a central couple, presumably the wedding pair, and a jester, in white costumes and carrying torches, accompanied by the flute and drum of the Swiss pair.¹¹⁶

¹¹⁵ Described in John Stevens, *Music and Poetry and the Tudor Court*, 247. The picture is from a 'Flemish Book of Hours', GB: Lbl, Ms. Add. 24089, f. 19v.

¹¹⁶ B: BRc, wandtapijt, 'De Maanden, Januari', ca. 1650.



Ill. 2.3.4. Anonymous, Belgian tapestry, *February*, depicting a torch-dance wedding procession with the Swiss pair.

Curiously, no music for the torch dance is found in printed or manuscript sources before Arbeau's 'Bransle of the Torch' (1588), Ex. 2.3.5. The dance instructions leave no doubt about the seductive symbolism of the torch dance, in which male dancers hold their lighted torches aloft while seeking a woman of choice to receive it.¹¹⁷

During these steps and movements the dancer makes one or two turns of

9 the hall seeking the damsel he will choose to receive

14 the torch.

Ex. 2.3.5. Arbeau, 'Bransle of the Torch'; Arbeau put the dance instructions above the music – these are not meant to be sung.

Further wedding torch dances have been identified by Pamela Jones: 'Austria felice' and 'Ballo fatto da sei cavalieri' were performed at the celebration in Milan of the wedding of Infanta Isabella Clara Eugenia of Spain and Archduke Albert of Austria on 18 July 1599 – the

¹¹⁷ Arbeau, *Orchesography*, 162-3. The instructions were translated into English in this edition.

choreography and music for both dances are preserved in the dance manual by Cesare Negri, dancing master at the court of Milan; a ‘Branle of the Torch’ was danced by Marguerite de Valois (1553-1615) and François Duc d’Alençon (1555-84), the youngest son of Henri II and Catherine de Medici, and Catherine herself danced a torch dance during her wedding celebrations at Lyons in 1548.¹¹⁸

More Dances for the Swiss Pair

In 1588 the dancing-master Thoinot Arbeau recorded examples of nearly every type of dance: *basse dance commune*, *tourdion*, *galliard*, *alman*, *bransle*, torch dance and more. He printed the tunes and rhythms for all these dances for performance by the Swiss pair, which he said was the ideal ensemble for them.¹¹⁹ The Swiss pair was obviously valued, and its services were retained, long after the *basse dance* had passed its sell-by date.

The new four-part polyphonic *basse dance commune*, *pavan* and *galliard* ousted the old style three-part *basse dance* by about 1525. A large corpus of these new dance types was published by Pierre Attaignant in Paris, Jacques Moderne in Lyons, and Tylman Susato in Antwerp. The dance band for these was primarily the violin consort. The music was composed for ensembles of four or five players – the two or three inner parts which were standard for these pieces meant that the dances could no longer be improvised.¹²⁰

Polyphonic dance music for flutes and recorders was also published and performed. Jacques Moderne’s collection of four-part dance music, *Musicque de Joye* (Lyons, 1544) lists *fleustes* (which could refer to both transverse flutes and recorders) on the title page, along with violins and keyboards. Recorder consorts made up of *Stadtpeiffer* played in the dance halls of Germany and the Low Countries, but there are almost no references to flute consorts playing for dancing in large dance halls – they probably would not have been heard very well. However, one exception is an inventory of the city instruments of Augsburg, 1540, which mentions consorts of five recorders (*fleden*) and four flutes (*schwegeln*) having been lost from the dance hall, so flute consorts must have been heard there – whether for dancing or for other entertainment cannot be known from the reference.

¹¹⁸ See Pamela Jones, *EM*, 14 (1986), 182-96, who identifies the Negri dances as torch dances, for further information on the dances and the wedding celebrations. Cesare Negri, *Le Gratie d’Amore* (Milan, 1602, facs. NY 1969 and Bologna 1969), prints only a tune and lute intabulation for the dance music.

¹¹⁹ See Arbeau, *Orchesography*, 46; Arbeau included choreography and music for most of the dance types known in the sixteenth century.

¹²⁰ For more on this point, and on violin consorts, see Peter Holman, ‘What Did Violin Consorts Play in the Early Sixteenth Century?’, *BJbHM*, 29 (2005), 53-66, esp. 56-60.

Mer sein verhandten gewessen ain fuerder fleden 2 discant 2 tenor 1 bass ist auff dem hauss verloren worden.

Mer sein verhandten gewessen 1 fuerder schwegeln 3 tenor 1 bass auf den hauss verloren worden.

Further, a case of recorders, 2 sopranos, 2 tenors and 1 bass, previously on hand, has been lost from the Dance House.

Further, a case of flutes, 3 tenors and 1 bass, previously on hand, has been lost from the Dance House.¹²¹

The Swiss Pair and the City Wind Players

Most cities in Germany and the Low Countries employed bands of *stadtpeiffer*, or city wind players, who performed for civic occasions, dances and ceremonies in the city squares.¹²² For this purpose wind playing focussed mainly on the *haut*, or loud winds, ideal for use out of doors. Nuremberg and its near neighbour Augsburg employed a large number of *Stadtpeiffer* who played shawm, cornett and trombone for outdoor civic duty. These were city employees, not itinerant musicians. The earliest references to the Swiss pair and drum being played by these civilians are listed among the Augsburg *Stadtpeiffer* in 1506 and 1514; records of payments to ‘swoegelpfeiffen und trummenschlahern’ are preserved in the city of Augsburg accounts.¹²³ These entries use the term *Schwegel*, as the Swiss flute was called in Switzerland and south Germany (see Ch. 1.4). The Swiss pair are depicted amongst the city musicians in the Nuremberg Rathaus murals originally painted by Albrecht Dürer in 1521, now heavily restored, in Ill. 2.3.5 below.

¹²¹ David Lasocki, ‘A listing of inventories’, 433.

¹²² For background and history on city wind players in 15th-century northern Europe, see Reinhard Strohm, *Music in Late Medieval Bruges* (Oxford, 1985), 74-101.

¹²³ Keith Polk, *German Instrumental Music*, 92, 102.



Ill. 2.3.5. Albrecht Dürer, *City musicians*, Nuremberg Rathaus, 1521 (heavily restored); the Swiss pair are at the centre back, not playing.

‘Cases of flutes’ – most likely, recorders – are listed in city inventories from Bruges, Augsburg, Mechelen, Nuremberg, Leipzig and Antwerp, and indicate a growing use of recorder consorts by *Stadtpeiffer*. The earliest example is from Bruges, 1480, ‘for purchase of ‘eenen coker met fleuten’ (a case with flutes) for the city ensemble’.¹²⁴ Payment records from Nuremberg, 1512, record a payment of ‘10 fl für 8 flötenpfeiffen unsern statpfeiffern’ (‘ten florins for eight recorders – literally, ‘flute-pipes – for our *Stadtpeiffern*’).¹²⁵ The Antwerp inventory of the city band in 1532 listed ‘eenen coker met IX floyten’ (a case of nine flutes) in the care of the wind player, Tylman Susato (d. 1561).¹²⁶ Susato, also a composer and publisher, was a brilliant trombonist, crumhorn and recorder player, although there is no record of his having played the transverse flute.

These Antwerp ‘floyten’ were probably recorders, but there is a surviving case which once belonged to the Augsburg *Stadtpeiffer* which held flutes and recorders together. This important case, which dates from 1603 (now empty of instruments, unfortunately), is in the Maximilian Museum in Augsburg. According to the research of Herbert Myers, it once housed 16 recorders, six transverse flutes (four tenors and two basses) and six conical cornettos.¹²⁷

The earliest unambiguous reference to transverse flutes being played by the city wind players is from 1538, when the city of Leipzig ordered ‘ein Futter (7) Querpfeifen’ (a case of

¹²⁴ Keith Polk, ‘The Recorder and Recorder Consort in the Fifteenth Century’, *Musicque de Joye*, 25-6, cites this and other examples to 1536.

¹²⁵ See David Lasocki, ‘A Listing of Inventories’, 427.

¹²⁶ David Lasocki, ‘A Listing of Inventories’, 429-30.

¹²⁷ See Herbert W. Myers, ‘An Important Case Study: The Augsburg *Futteral*’, *Musicque de Joye* ed. David Lasocki (Utrecht, 2005), 513-516.

seven transverse flutes) for the *Stadtpeiffern* – probably the ‘case’ refers to a set or consort of seven flutes.¹²⁸

After 1540, most German city and court inventories listed cases full of transverse flutes, often numbering in the dozens. The Baden-Württemberg court at Stuttgart shows a particular penchant for flutes – by 1589 their collection of *zwerchpfeiffen* numbered over 200.¹²⁹ Some inventory entries indicate that the flutes were for city players, others were for ‘masked dances’, still others for *Fassnachtspiel* (for playing during *Fasnacht*); one entry lists sixteen flutes ‘tuned together, to be used for instrumental music’.

Further evidence for the popularity of flutes is found in an architectural source. Flutes decorate the well-preserved courtyard of the Baden-Württemberg castle in Stuttgart, where magnificent porches are surrounded on four sides by stone pillars; each pillar is decorated with carvings of life-sized flutes. These unusual carvings have not been reproduced or discussed in previous literature on the Renaissance flute. My photograph of one pillar (Ill. 2.3.6) provides a detailed view of the flutes *in situ*.



Ill. 2.3.6. Baden-Württemberg castle, Stuttgart, pillar carved with flutes (photograph by the author).

¹²⁸ See the inventory reference in David Lasocki , ‘A Listing of Inventories’, 432.

¹²⁹ The complete, fascinating inventory of transverse flutes in Stuttgart is listed in David Lasocki , ‘A Listing of Inventories’, 474-478.

Conclusions

In spite of the increasing presence of the Swiss pair as musicians at court functions and dances during the first decades of the sixteenth century, there is no evidence that they played in mixed ensembles of ‘art’ music.¹³⁰ I believe that their autonomy and aloofness had to do with their being sworn to oath, as mercenary soldiers, and so they minded their own business while performing at court functions. But their sojourns at court would certainly have brought the Swiss pair into contact with other instruments and musicians and with some of the music then being played by court musicians.

It is reasonable to imagine that the soldier-flautists heard and learned to play some of the court musical repertory, such as the *basse dance*, which was circulating in Europe at that time. In turn, the performances at court by the Swiss pair must also have provided the impulse and a direct opportunity among the versatile court musicians to learn to play the flute themselves, since many of them were already proficient on a number of soft instruments, such as recorders, crumhorns, *douchaines*, lutes and viols.¹³¹

The Swiss flute, with its large range of two-and-a-half octaves, and its flexible and expressive tonal and dynamic nuances, must have shown its obvious potential for performing with other instruments. The use of the Swiss pair by the *Stadtpeiffer* is probably a significant link in the development of the flute as a consort instrument, since it is known that these city musicians were proficient players of soft winds; *Stadtpeiffer* are documented performing on consorts of recorders, crumhorns and *douchaines* for dancing and other indoor activities.¹³² The 1540 Augsburg reference above, to a consort of three tenors and one bass *Schwegeln*, is an important piece of evidence that they must also have played transverse flutes.

¹³⁰ A point also noted by Keith Polk, *German Instrumental Music*, 45.

¹³¹ See Keith Polk, *German Instrumental Music*, 70-80, for more information on the careers of some professional wind players, such as the Schubinger brothers, in Germany and Italy.

¹³² See Keith Polk, ‘Instrumental music in the urban cities of Renaissance Germany’, *Early Music History* 7 (1987), 176-8. For background and history on wind players in 15th-century northern Europe, see Reinhard Strohm, *Music in Late Medieval Bruges* (Oxford, 1985), 74-101.

Chapter 3. From Swiss Flutes to Consorts in Germany and France, ca. 1510 - 1560

Mais il l'entretenoit parfaicte et en prince; car avecques ung dussus et une bass-contre, il y a avoit une espinette, ung jouer de luth, dessus de viole, et une fleute-traverse, que l'on appelle à grand tort fleuste d'allemand; car les Français s'en aydent mieulx et plus musicalement que toute aultre nation; et jamais en Allemaigne n'en fust joué à quatre parties, comme il se faict ordinairement en France.

François de Scépeaux, *Mémoires* (Metz, 1554)

Chapter 3.1

The Transverse Flute in Civilian Hands

A new role for the flute as an instrument for soft chamber music began to emerge amongst civilian musicians, both amateur and professional, during the first two decades of the sixteenth century. A few scattered references from Burgundy, France, Germany, and Switzerland show the beginnings of flutes being played in mixed polyphonic ensembles of soft instruments and voices, not linked with the military or with drums.

The earliest known picture of a single flute playing in a soft consort is by Simon Bening (1483-1561), from the 'Hennessy Book of Hours', *ca.* 1510, depicting four musicians in a boat, two singing, one playing a lute, and one playing a transverse flute of about tenor size.¹ This image is nearly identical to a painting in the slightly earlier 'Flemish Book of Hours', *ca.* 1500, which depicts a recorder in place of a transverse flute. The Bening picture is important in documenting the use of a single Renaissance flute in company with other soft instruments by about 1510. Ardal Powell makes the point that paintings such as these which depict mixed groups of musicians were idealized images deriving from a common model, rather than strictly realistic.² However, the combination of transverse flute, lute and singer is a familiar one in later sixteenth-century paintings (Ill 3.1.3 is one such example). It may have had symbolic associations, but the combination is also a viable and realistic musical ensemble.



Ill. 3.1.1. Simon Bening, 'The Hennessy Book of Hours', *ca.* 1510, two singers, a lutenist and a flute player in a boat.

¹ 'The Hennessy Book of Hours', *ca.* 1510, B: Br: Ms. II, 158.

² 'The Flemish Book of Hours', *ca.* 1500, GB: Lbl, Ms. Add. 24098, f. 22v, both 'boat' pictures are depicted in Ardal Powell, *The Flute*, 40-41.

The transverse flute appears around the same time among the courtly instruments of Emperor Maximilian I. He was no stranger to the transverse flute as a military instrument, having made full use of the Swiss pair in his army from about 1490. It is associated with his court musical establishment in a woodcut from Maximilian's autobiography, *Weisskunig* (1506-16), where the Emperor, richly dressed in ornate robes and surrounded by his court musicians, is inspecting the court instrument workshop.³ The artist Hans Burgkmair seems to be at pains to portray the full array of strings, winds and keyboards which were in the court *instrumentarium*. A single flute lies on a table in front of a clavichord, next to several sizes of recorders, a cornett, crumhorn and fiddle. All the musicians appear to be playing and singing at once in different parts of the room, a scene reminiscent of the idealized and unrealistic performing groups pictured in Burgkmair's woodcuts for the *Triumphzug* of Maximilian I (discussed and illustrated in Ch. 2.2).

Further evidence for flutes in civilian places comes from the 1514 inventory of the estate of Charlotte d'Albret, at the Chateau de la Motte Feuilly, located in Touraine in central France. Charlotte's inventory lists amongst her furniture: #72: 'deux fleustes d'Allemain,⁴ poyasant deux mars deux onces deux gros' (two German flutes, weighing two marks, two ounces, two gros).⁵ They are the earliest flutes to be mentioned in a private household. David Lasocki has defined the mark as half a *livre*, made up of eight ounces; there are eight *gros* to the ounce (one ounce = 28.3 grams, eight ounces = 226 grams).⁶ This means that the two flutes listed in the inventory weighed 18.25 ounces, or 516 grams. A comparison with surviving instruments indicates that the Valentinois flutes at 516 grams were heavy. For example, the 'M Rafi' one-piece plumwood bass (Rome 2788), one of the lightest instruments for its size, weighs only 230 grams; surviving tenors weigh between 90 to 170 grams, depending on the pitch and type of wood.⁷ The weight of the Valentinois flutes may be due to some external decorations of silver or brass. This accords with their being listed in a section of the inventory devoted to decorative silver (see below for the listings of some of these items). Flutes decorated with silver are not unusual – some are listed in inventory descriptions of transverse flutes, for example, from the 1566 Augsburg inventory of Raymund Fugger's collection:

1 Fueter mit 5 Pfeiffen mit Silber beschlagen so eines veldt Pfeiffer gewesen.

1 Case with 5 flutes decorated with silver, formerly owned by a *veldt Pfeiffer*.

³ The picture is reproduced and discussed in 'Habsburg', *GMO*.

⁴ The term 'fleustes d'Allemain' has been shown in Ch. 1.4 to refer to transverse flutes in France during the sixteenth to eighteenth centuries.

⁵ Edmond Bonnaffé, *Inventaire de la Duchesse de Valentinois, Charlotte d'Albret* (Paris, 1878), 45.

⁶ David Lasocki, 'A Listing of Inventories', 427.

⁷ Filadelfio Puglisi, 'A Survey of Renaissance Flutes', 75, 82.

Silver-tipped flutes are listed in Henry VIII's 1547 inventory of instruments at Westminster:

one flute and ii phiphes of blacke Ibonie tipped withe Silver.⁸

Charlotte d'Albret was a member of the court retinue of Louis XII and a favourite of the French Queen. Sister of the King of Navarre, she married the powerful Italian aristocrat and soldier Cesare Borgia, son of the Borgia Pope Alexander VI and brother to Lucretia Borgia, in 1499.⁹ The marriage cemented the Pope's alliance with Louis XII, and Cesare became the Duke of Valence and was put in charge of a French military unit, with which he conquered the rebellious towns of the Papal States. When his father died, Cesare, no longer in Papal favour, was imprisoned in Naples, sent to Spain in chains, and escaped to Navarre, where he served his brother-in-law as Captain-General of Navarre and died in battle in the town of Viana in 1507. He is buried there in the church of Santa Maria.¹⁰ Charlotte d'Albret died in 1514; the inventory, dated 12 May, 1514, was therefore made at the time of her death. The castle survives in private ownership, and her tomb is in the church on the castle grounds, but nothing remains of her household furnishings.

It is not known who actually owned the flutes in the estate, or how they were used. If the flutes were for household music making, they may have played with two keyboard instruments which are listed among the contents of the wardrobe of Loyse Borgia: 'ung manicordion avec son estuy' (a clavichord with its case) and 'une espinete, deux landiers á chauffrecte' (a spinet, [and] two fire-dogs for footwarmers).¹¹

It may be that these flutes belonged to the soldier Cesare Borgia, and were of military provenance. Several references in the d'Albret household inventory, in the same section where the flutes are found, list items of silver with military associations. Entry no. 63 is a dish festooned with 'plusieurs personnages armez et en bataille' (many persons armed for battle); entry no. 73 immediately follows the flutes: 'une trompe avec son cordon, á six pans, poysant deux mars une once' (a trumpet with its ensign, or cord, having six flaps, weighing two marcs, one ounce).¹²

The entry of Cesare Borgia into Chinon for his marriage to Charlotte in 1499 was heralded by the sound of drums and trumpets, as reported by Bonnaffé from a contemporary description: 'Trente gentilshommes, en drap d'or et d'argent, escortaient le duc entouré de

⁸ Both entries are from David Lasocki, 'A Listing of Inventories', 453-4 and 432-4.

⁹ E. L. Miron, *The Derelict Duchess, a Study of the Life and Times of Charlotte d'Albret, Wife of Cesare Borgia* (New York, 1912); Rafael Sabatini, *The Life of Cesare Borgia* (New York, 1912).

¹⁰ See Rob Neillands, *The Road to Compostela* (Ashbourne, 1985), 105-107, where both the church and the gravestone are pictured.

¹¹ Bonnaffé, *Inventaire de la Duchesse de Valentinois*, 40.

¹² Bonnaffé, *Inventaire*, 44-45.

tabourins, de rebecs et de clarions d'argent, accoustrez de filz d'or et sonnans tousjours' (thirty gentlemen, in cloth of gold and silver, escort the duke [Cesare Borgia] surrounded by drums, rebecs and trumpets of silver, bedecked with threads of silver and sounding all the time).¹³

Although flutes are not reported, it would have been entirely in keeping with French practice to include them for such a grand occasion, especially one for a military personage like Cesare Borgia. The ownership of the Valentinois flutes will likely remain a hidden secret, but the fact remains that the instruments were kept at the castle during the lifetime of Charlotte d'Albret, and may have seen use for private and public music-making.

The few examples described above indicate that the transverse flute was beginning to be played by civilian musicians during the second decade of the sixteenth century, but its use was certainly limited, and prior to 1510 there are no known references to transverse flutes playing in mixed ensembles. A lack of references to flutes is notable, for example, at the court of Maximilian's daughter, Margaret of Austria (1480-1530). She sang, played keyboard and other instruments, wrote poetry, and maintained large musical establishments at four different European courts: first, at the French court from 1483-91; second, as the wife of Prince John of Spain from 1497 until his death in 1500; third, as the wife of Duke Philibert II of Savoy from 1501; and fourth, upon returning after his death in 1506 to become regent of the Netherlands until her death in 1530.¹⁴

The First Instruction Book for Instruments:
Sebastian Virdung, *Musica getuscht* (1511)¹⁵

The publication of the first book of instructions for musical instruments, Sebastian Virdung's *Musica getuscht* (Basel, 1511), is a sign that the pastime of playing instruments was on the rise, at least in German-speaking lands, and that there was a market for published instructions. Virdung wrote in German rather than the more erudite Latin, indicating that his book was clearly aimed at an amateur readership. Several types of wind consorts are illustrated: three sizes of *flöten* (recorders), four sizes of crumhorns and two sizes of shawm, all at pitches a fifth

¹³ Bonnaffé, *Inventaire*, 3; the source is not further identified.

¹⁴ For more about the Turin court, one of the richest musical centers in Europe during the sixteenth century, see S. Cordero di Pamparato, 'Emanuele Filiberto di Savoia, protettore dei musici', *RMI*, 34 (1927) and 35 (1928). For more about the musical library and the court musical establishment of Margaret of Austria, see Martin Picker, *The Chanson Albums of Marguerite of Austria, MSS 228 and 11239 of the Bibliotheque Royale de Belgique, Brussels: a Critical Edition and Commentary* (Berkeley, 1965).

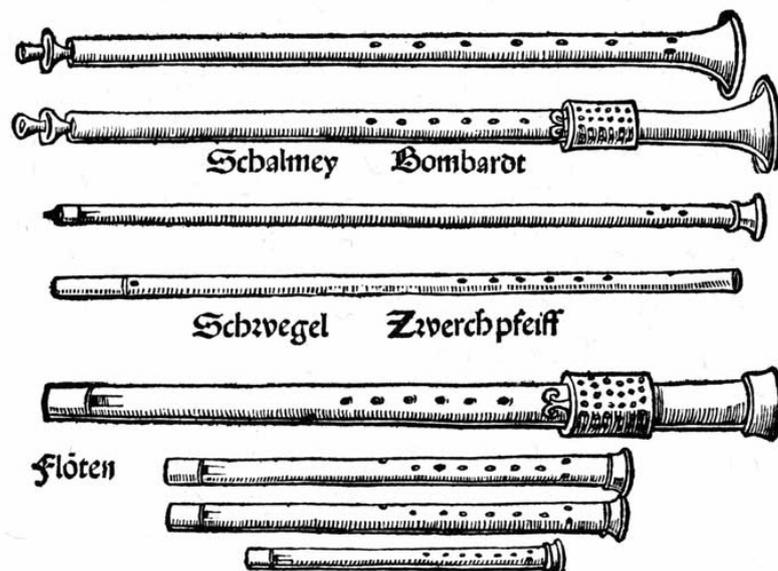
¹⁵ Sebastian Virdung, *Musica getuscht* (Basel, 1511); facs. Klaus Wolfgang Niemöller (Kassel, 1970); Beth Bullard, ed. and trans., *Musica getuscht: a Treatise on Musical Instruments (1511) by Sebastian Virdung* (Cambridge and New York, 1993).

apart. Virdung describes a ‘chest’ of recorders in the sizes needed to accommodate the ranges of polyphony in three or four parts together:

You need to know that one generally makes four recorders in one chest (‘in einen futeral’), or six together, which is called a *coppel*: two discants, two tenors, [and] two basses. You must observe [in] the alto part whether the range from top to bottom allows you to have another tenor or not. If you deem it [appropriate] for a second tenor recorder, then you need no other. But if it goes too high, then you must take a second discant for the alto part.¹⁶

Written instructions are included for only three instruments, keyboard, lute and recorder. Virdung explains that these three instruments provide the basis for learning all other instruments.¹⁷ As a practice piece for learning to read notation and tablature, the German hymn ‘O haylige, onbeflecte, zart juckfrawschafft marie’ is printed in keyboard tablature, in lute tablature and in mensural notation for performance by four recorders.

Virdung is the first sixteenth-century source to picture the transverse flute (Ill. 3.1.2 below).



Ill. 3.1.2. Sebastian Virdung, *Musica getutscht*, Basel, 1511; a single *Zwerchpfeiff* depicted with shawms, recorder consort and three-hole pipe, labelled *Schwegel*.

¹⁶ Beth Bullard, *Musica getutscht*, 180; from Virdung’s illustration of a recorder consort (see Ill. 3.1.2 below) it appears that a chest of four recorders normally included one discant, two tenors, and one bass.

¹⁷ Bullard, *Musica getutscht*, 177.

He illustrates only a single flute, describing it briefly as an instrument played only by soldiers in the company of drums.¹⁸ He makes no other mention of the flute. Virdung, a German priest working in Basel, would have been familiar with the sound of the Swiss pair in that city, but it appears that flute consorts were unknown to him.

Virdung's treatise remained the only published instruction book for instruments for nearly twenty years. In 1529, the same year as Martin Agricola published his *MID* in Wittenberg, Virdung's *MG* was translated into French and published in Amsterdam as *Livre plaisant et tres utile* (Amsterdam, 1529). A Latin translation by Othmar Luscinius, *Musurgia seu praxi musicae* (Strasbourg, 1536/1542), is closer to Virdung's original. It appears that Virdung remained in use for some decades longer, because a translation from the 1529 French edition into Dutch was made in 1568, as *Dit is een seer Schoon Boexcken* (Antwerp, 1568).

Civilian Cases for Flutes

Around 1520, instrument cases for multiple flutes, similar to those worn by soldiers, begin to adorn music title pages and paintings of musical gatherings and allegorical subjects. The following discussion illustrates known pictures and music title pages which show 'civilian' flute cases between 1520 and 1550.

The earliest civilian case is depicted in a series of nearly-identical paintings *ca.* 1520-30 by the so-called Master of the Half-lengths (one version is in Ill. 3.1.3). Three young women in French court attire, a singer, a flautist and a lutenist, perform Claudin de Sermisy's chanson 'Jouyssance vous donneray' (the words and music are clearly depicted, but the edition cannot be identified from the picture – Sermisy's four-voice chanson, first published in Paris by Pierre Attaignant in 1528, was obviously circulating earlier).¹⁹ The presence of the flute in the painting is no doubt a symbolic reference to the sexual pun on the word 'jouyssance', well-known still today in colloquial French. A lute case hangs on the wall, and on the table is a flute case covered in black leather ornamented with fine gold filigree bands at the top of each tube. Only a portion of it is visible, but the cap on the table beside the music book indicates that there are three tubes of equal diameter, probably for tenors.

¹⁸ Bullard, *Musica getuscht*, 114. For Virdung's illustration of the drums played with flutes, see this thesis, Ch. 2, Ill. 2.2.1.

¹⁹ Pierre Attaignant, *Chansons nouvelles* (1528); a version for voice and lute is in Pierre Attaignant, *Tres breve et familiere introduction ... reduictes en la tabulature du Lutz* (1529), Howard Mayer Brown, *IMPBS*, 1529³.



Ill. 3.1.3. Master of the Female Half-lengths, *Jouissance vous donneray*, ca. 1520, Schloss Rohrau, Vienna.

There are four different versions of this painting:²⁰

a. St. Petersburg, Hermitage Museum.

The flautist is playing from tenor part book.

b. Schloss Rohrau, Vienna, Harrachsche-Gallery, Mag. Mus. 1, 51.

The flautist is playing from superius part book.

c. Meiningen, Herzogliches Schloss.

The flautist is playing from the tenor part book.

d. Brazil, private collection.

The flautist is playing from the superius part book.

²⁰ A detailed discussion of the paintings, their provenance, and their current locations is in Colin Slim, 'Paintings of Lady Concerts and the Transmission of 'Jouissance vous donneray'', *Essays in Iconography*, 7 (Aldershot, 2002); see also Daniel Hertz, 'Mary Magdalen, Lutenist', *Journal of the Lute Society of America*, 5 (1972), 52-3. Hertz proposes a date of 1520 for the earliest of these paintings.

Other known pictures and music title pages which clearly show ‘civilian’ flute cases between 1520 and 1550 are depicted and discussed below, Ill. 3.1.4-3.1.13.



Ill. 3.1.4. Hans Holbein, title-page, Oswald Myconius, *Ad sacerdotes Helvetiae*, Zurich, 1524.²¹

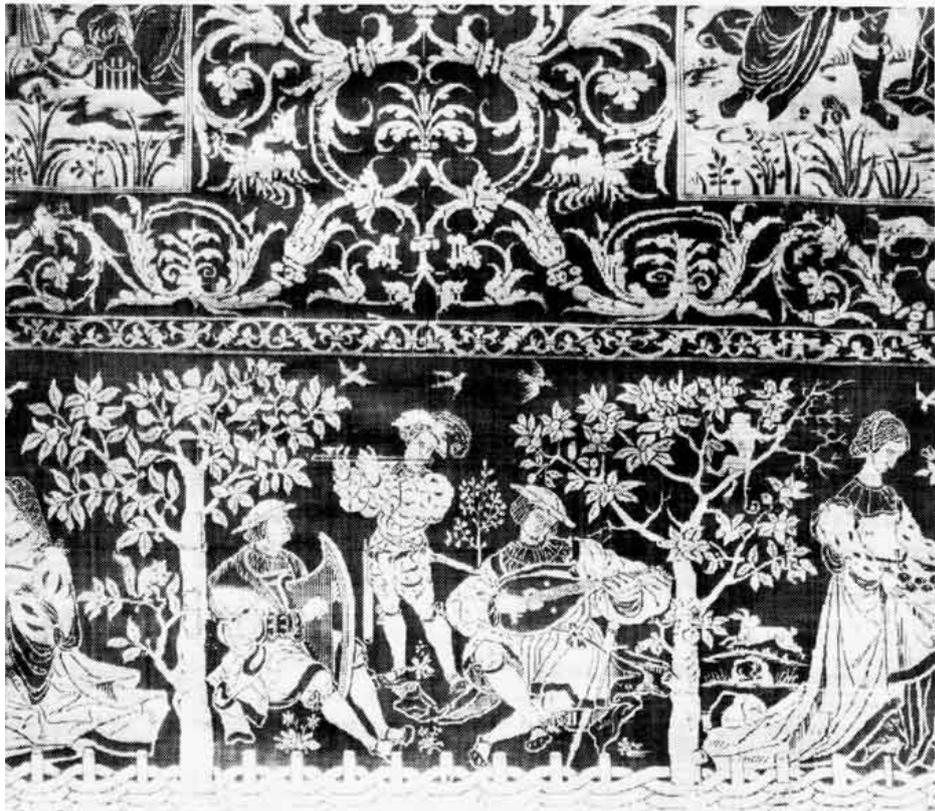
Hans Holbein’s illustration includes a case for flutes behind a lute in the upper right-hand border of this title page for a Swiss humanist book printed in Zurich.

²¹ See Mary Rasmussen, ‘The Case of the Flutes in Holbein’s *The Ambassadors*’, *EM*, 23 (1995), 4.



Ill. 3.1.5. Hans Sebald Beham (1500-50) 1530, ornament with flute case.

This is an ornament with harp and flute case for four flutes of three different lengths, which look to be bass, two tenors and soprano.



Ill. 3.1.6. South Netherlands, fragment of table cloth, 1531, with lute, flute and harp.

The flautist plays a tenor, fingering 3456, a case, hip-to-calf, is not very clear, but it appears to be only a single tube.



Ill. 3.1.7. Hans Holbein (1497-1543), *The Ambassadors*, 1533, detail, flutes in a case; signed and dated.²²

The first case to depict a fully visible flute consort inside is Hans Holbein's famous and exquisite painting, *The Ambassadors*, painted in London for Henry VIII in 1533. An exceptionally detailed painting, it shows a full set of beautiful instruments – soprano to bass. Even though only the tops of the instruments are showing, the painting conveys the quality of wood and craftsmanship of these flutes.

²² For a detailed and informative discussion of this painting, see Mary Rasmussen, 'The Case of the Flutes in Holbein's *The Ambassadors*', *EM*, 23 (1995), 115-23.



Ill. 3.1.8. Cornelis Anthonisz (1499-1556), *Fest* (1533).

A painting of men at dinner; one holds music, to his left a man is removing a tenor flute from a case with four flutes; only the top of each flute is visible, but the case appears to hold a soprano and three tenor flutes.



Ill. 3.1.9. Lucas Cranach, *Frau Musica*, 1544.

Georg Rhau reproduced this drawing by Lucas Cranach the Younger (1515-86) numerous times in his publications of music, including the tenor part book of *Neue deutsche*

geistliche gesange a 4-5... schulen (Wittenberg, 1544), and in Martin Agricola, *Musica instrumentalis deudsch* (Wittenberg, 1545). The lute-playing ‘Frau Musica’ is surrounded by a viol, harp, dulcimer, shawm and a case for five flutes; diameters of tubes are for two small, two middle-sized, and one large flute.

Two more ‘Musica’ pictures include flutes with cases.



Ill. 3.1.10. Georg Pencz (1500-50), *Musica*, ca. 1540.²³

‘Musica’ is a female organist, her foot is on a tenor-sized flute, and on the floor is a case for five flutes. Tubes are visible for two small, two medium, and one larger flute.



Ill. 3.1.11. Anonymous Italian, *Musica*, 1550.

‘Musica’, surrounded by wind and stringed instruments, holds a tenor transverse flute in her left hand; on the shelf behind her is a flute case for multiple flutes of different lengths.

²³ Also attrib. Sebald Beham, see R.A. Koch, *Early German Masters* (New York, 1978), 82.



Ill. 3.1.12. Virgil Solis (1514-62), Nuremberg, 1540.²⁴

In Ill. 3.1.12 the flautist is viewed from behind, playing an extremely long tenor flute; a case on the bench behind him has two visible tubes which appears to be capable of holding a long tenor such as the one he is playing.



Ill. 3.1.13. Girolamo Mazzola Bedoli (1505-1570), Parma, Chiesa di Santa Maria della Steccata ca. 1553, detail of a mural with three shepherds playing flutes.

The final image is of three flute-playing shepherds; one fingers 123 45, one fingers 12 456, fingerings for the third are not visible; a flute case hangs from the shoulder of the shepherd on the left. Three tubes are visible, two of equal length, and one slightly shorter, matching the sizes of the flutes played by the men.

²⁴ See Peters, *German Masters of the Sixteenth Century* (New York, 1987), 245.

Conclusions

As with soldiers' cases, it is not always possible to determine the number or lengths of the flutes in the civilian cases, but their presence on music title pages and in paintings of non-military subjects suggests that flute playing was growing in popularity amongst the musical public, not only in Germany but in other parts of Europe.

Of more significance than the mere presence of cases is that flutes are documented in these pictures playing together in groups – in mixed ensembles (such as the Master of the Half-Lengths *Jouyssance* paintings) or in consorts of flutes (see Hans Holbein, *The Ambassadors*; Cornelis Anthonisz, *Fest*; Girolamo Mazzola Bedoli, mural with shepherds playing flutes). A significant number of civilian cases show tubes for four or five flutes. Holbein's '*Ambassadors*' is one of the most important pictures, because it clearly depicts not only the case but also the instruments inside – a full flute consort of soprano, two tenors and bass.

Chapter 3.2

The Rise of the Flute Consort in Germany

During the decade 1520 to 1530 three important publications in Germany and Switzerland attest to the fact that the full flute consort including treble, alto/tenor and bass had certainly developed, and its popularity was spreading. Probably the earliest source is a book of music in four parts, Arnt von Aich's *Hubscher lieder*, which mentioned performance on flutes and recorders on the title page. It was published in Cologne without a date, but is thought to have been printed *ca.* 1519.¹ A few years later, in 1523, a drawing of four soldiers playing a full consort of transverse flutes was published in Basel by Urs Graf.² And in 1529 the first instructions for playing transverse flutes were published in Martin Agricola's comprehensive treatise on musical instruments, *Musica instrumentalis deudsch*, published by Georg Rhau in Wittenberg.³ These are the three primary sources for documenting the rise of the flute consort in Germany during the 1520s.

The picture by Urs Graf will be discussed first – it is the first depiction of a full consort of flutes, and has much to tell about the instruments and how they were played. Agricola's treatise will be considered second, for two reasons. First, its significance can best be appreciated in the wider context of music education, and the rise of instrument playing in Germany during the Lutheran era. Second, an understanding of Agricola's instructions is an essential prerequisite for the discussion of Aich's music and how it was performed by flutes. The music will therefore be discussed last, even though Arnt von Aich's *Hubscher lieder* was probably printed before either Graf's picture or Agricola's instructions.

¹ The volume is listed in *RISM* as [1519₅]; original copies are in CH: Bu; D: Bds-Tü; facsimile reprint by Bernd Becker, Cologne, n.d.; modern edition, E. Bernoulli and H. J. Moser, *Das Liederbuch des Arnt von Aich* (Kassel, 1930).

² Basel: Öffentliche Kunstsammlung, Kupferstichkabinett, K. 108.

³ See Howard Mayer Brown, *IMPBS*, 27, for details of the original publication and reprints; Brown includes a further print of 1528, because one copy (D:DI) includes a dedication date of St. Bartholomew's Day, 1528, but this is the 1529 edition. The treatise was first reproduced in *Publikation ältere praktischer und theoretischer musik-werk*, Jahrgang 24, 20 (Leipzig, 1896), ed. Robert Eitner. For an English translation, see William Hettrick, ed., *The 'Musican instrumentalis deudsch' of Martin Agricola: A Treatise on Musical Instruments, 1529 and 1545* (Cambridge, 1994).

Urs Graf and the Renaissance Flute Consort

The development of a playable bass flute probably took place sometime between the publication of Virdung's treatise in 1511, which depicts only a single tenor flute and discusses it as a military instrument (see Fig. 3.1.2), and 1523, the date on which the Swiss engraver Urs Graf penned a drawing of four soldiers playing a consort of transverse flutes: soprano, alto and tenor of the same size, and bass (see Fig. 3.2.1 below). Like Virdung's instruction book, Graf's picture was published in Basel. It is a well-known drawing today, printed in nearly every book about the history of the flute. It is the first image – and in fact one of the only images – of a complete Renaissance flute consort, and shows that by 1523 playing in four parts on transverse flutes was a known activity.



Ill. 3.2.1. Urs Graf, *New Year's Greetings to Jörg Schweiger*, 1523, depicting four soldiers playing a full consort of flutes.

Urs Graf was born in Basel about 1485.⁴ He was trained by his goldsmith father, and apprenticed as a goldsmith in Zurich. He designed book illustrations and worked as a stained-glass painter's assistant before joining the Basel goldsmiths' guild in 1512. In addition to his career as an artist, he was a mercenary soldier who regularly abandoned his family and workshop in Basel for military campaigns and adventure. At home, he was jailed for wife-beating and consorting with prostitutes. He fled Basel in 1518 after an attempted homicide, returning a year later as the mint's die-cutter. He disappeared from Basel in 1527, but a signed drawing, the last known, is dated 1529. It is no wonder, given his life of adventure, that he often chose to depict scenes of violence and brutish battlefield life, with backgrounds of fantastical craggy trees and Alpine landscapes. His musical subjects are relatively few. In addition to the flute-playing soldiers, they include a rather rude drawing of dancing peasants, one female fiddle player, about eight engravings of flutes and drums as emblems on dagger sheaths and title pages, and a lute player in Virdung's *Musica getutscht* (Basel, 1511).⁵

Graf's drawing is an important document for what it tells us about the make-up of a consort at this time, at least in Germany and Switzerland. There are four flutes in three sizes, one soprano, two alto/tenors, and a one-piece bass. The treble player on the right is the keeper of the instruments. He carries a case which is capable of holding all four flutes, with four tubes, one short, two middle-sized and one long one, this last extending from about waist to ground – long enough to hold the bass flute played in the picture. Even if the case is not drawn exactly to scale, it is a significant piece of evidence. I have already shown in Ch. 2.2 that most military cases, including the surviving seventeenth-century ones in Graz, did not appear to hold a full consort of flutes, since none of them is long enough to carry the bass. Here in Graf's picture, we have the first pictorial evidence of a bass flute and a case long enough to hold it.

The shortest tube in Graf's picture is about half the length of the longest one, too short for a tenor but able to accommodate the treble. The middle-sized tubes are waist to knee, the right length to accommodate the two tenors. The length of the longest tube can be calculated at about 100 centimetres; assuming the average height of a man to be at least one-and-a-half metres (five feet six inches), this length would accommodate a bass flute. Tenors were reamed from a single piece of wood, and Graf's drawing indicates that the first basses were also made from a single piece of wood – not an inconsiderable achievement. Three such one-piece bass

⁴ Biographical details about Urs Graf are from *A Biography of the Artist Urs Graf from the J. Paul Getty Museum Collection*, <http://www.getty.edu/art/collections/bio/a3243-1.html> acc.

⁵ Graf's extant engravings are fully reproduced in Walther Lüthi, *Urs Graf und die Kunst der Alten Schweizer* (Zurich und Leipzig, 1928) and Emil Major/Erwin Gradman, *Urs Graf* (Basel, 1941). The illustration of the lutenist on fol. 12v of Virdung's treatise is signed by Graf, but there is no direct evidence that he contributed to the other woodcuts of musical instruments in Virdung's book.

flutes survive (see Ch. 1.3 for a discussion of surviving instruments). All other surviving basses are made in two pieces.⁶

The picture is full of animation, humour and narrative; the physical features, clothing and weapons of each man are drawn with care. The exaggerated postures, large and prominently displayed phallic symbols in the form of weapons, flutes and cod-pieces, lend a rather humorous, intimate air to the drawing. The tenor player on the right looks balefully at the viewer, a comical figure with his unruly hair, large handlebar moustache and piercing eyes. The second tenor player is a mature man, drawn in profile, while the bass player is viewed from the back, perhaps to emphasise his discomfort as he twists himself into playing position on this awkward instrument. It is also a tempting thought that Graf the mercenary Swiss soldier may have played the flute himself and that this is a self-portrait. At the time of the drawing, Graf would have been about thirty-five years old, not an implausible age for the Swiss players in the picture. Unfortunately, there is no evidence to support this idea.

The men are identifiable from their uniforms as two *Eidgenossen* and two *Landsknechte*.⁷ It would appear that bass and tenor players on the left are the Swiss; the tenor and treble players on the right, in the more flamboyant slashed breeches, hats and plumage, are the *Landsknechte*. From the *fleurs-de-lis* on the soprano player's breeches they must have been employed in the French forces.

I believe that the juxtaposition of Swiss and German soldiers is a curious and significant feature of Graf's picture, given the fact that the Swiss and German mercenaries held each other in contempt, and fought against each other in the Burgundian, Swabian and Italian wars. In 1522, the year before Graf's drawing, the Swiss-Italian coalition was defeated by the Germans in the battle of Bicocca. By the time of Graf's drawing, the Swiss had gained their independence and pike warfare had been all but superseded by the use of artillery – guns and canons replaced pikes and halberds, but this did not signal the demise of the Swiss pair, who continued to serve in opposing armies throughout the sixteenth century. It seems unlikely that they would have joined together for a bit of jolly music-making in their spare time.

Several reasons come to my mind which might explain Graf's intentional uniting of Swiss and German soldiers in this unlikely way. It may have been simply to depict that both German and Swiss soldiers played the flute, or that the animosity between the competing soldiers was not universal, or that music was a way of bringing people together. Or his drawing may have been done with a sense of irony, recalling the well-known expression from the

⁶ For a list of surviving instruments see Philippe Allain-Dupré, 'Renaissance and Early Baroque Flutes, an Update on Surviving Instruments', *GSI*, 57 (2004), 54-55.

⁷ According to Ardal Powell, *The Flute*, 27, but he does not identify them further. For definitions of these terms see my discussion in Ch. 1.4.

sixteenth century, ‘accordez vos flûtes’ – a command to ‘tune your flutes’ – which had the meaning, then as now, to ‘agree, or get along amongst yourselves’.⁸

One more clue to the background and meaning of this picture is in the banner inscription above the soldiers’ heads, which reads ‘New Year Greetings to Jörg Schweiger’. The questions arise as to who Schweiger was, and what his association with Graf was, which might partially explain the circumstances of the drawing? I have determined that Schweiger, a goldsmith and artist employed in the workshop of Hans Holbein the Elder, must have been an important personage in Basel, because his portrait was painted by Ambrosius Holbein in 1518.⁹ Schweiger thus plied the same goldsmith’s trade as Graf. He must have been a good friend or colleague to have been the recipient of Graf’s unique greeting card. Perhaps Schweiger was, like Graf, not only a goldsmith but also a soldier. Perhaps he even played the flute.¹⁰ If so, it would explain why Graf sent such a greeting card to Schweiger, who would have understood the ironic tone of Graf’s message.

As I have tried to show in Ch. 2.2, and 2.3 above, Swiss flute playing was very different and required different playing techniques from consort playing. The music which soldiers played was monophonic – battle signals, marching music, dances, all performed from memory, with a large and very loud drum. For the flute to be heard in all of these situations surely necessitated playing in the highest octave, where the sound is loudest and most piercing. The need for being heard, coupled with the need for keeping in strict time for marching or dancing, or for imparting life-or-death signals on the field, points to a style of playing which was neither subtle nor complicated.

Consort playing is the exact antithesis of this style. It requires playing of a subtle and delicate nature, by a group of two, three or four flautists, probably reading from notation, with an educated attention to the details of blend, tuning, applying the correct chromatic inflections, and musical phrasing. Most flute consort music is written within a range of two octaves for the

⁸ See *The Concise Oxford French Dictionary* (London, 1934), 9, where this usage still is current: ‘accorder...to reconcile, conciliate, to harmonize, to tune: *accordez vos flûtes*, you should first agree with each other’. See also Georges Kastner, *Paremiologie musicale de la langue française* (Paris 1886), for a list of expressions current in sixteenth-century French usage derived from musical terms. For example, Benigne Poissenot writes ‘before going on I beg you to tune your flutes [that is, come to an understanding]; “accorder ses flutes”, for the dissonance is great’. See Poissenot, *Traite paradoxique* (Paris, Nicard, 1583), quoted in Kastner, *Paremiologie*, 318.

⁹ For details of his life, see the review of Tilman Falk, ed., *Katalog der Zeichnungen des 15. Und 16. Jahrhunderts in Kupferkabinett Basel*, Teil I: ‘Das 15. Jahrhundert, Hans Holbein und Jörg Schweiger, Die Basler Goldschmiederrissen’ (Stuttgart, 1979), by John Rowlands, *The Burlington Magazine*, 126 (May 1984), 295-6. Holbein’s painting is now in the Basel Kunstmuseum.

¹⁰ A drawing by Schweiger of a cherub playing the Swiss flute is in Basel: *Kupferstichkabinett*, U. XII. 24.

lower parts, and makes good use of the low and middle ranges, with only occasional forays into the highest three or four notes in the soprano part. For these reasons, I do not believe that the activities of soldiers or the nature of their style of music making was compatible with polyphonic flute consort playing.

I believe that Graf's picture is a fanciful and ironic representation of soldiers engaging in civilized music-making with a soft *bas* flute consort, an activity associated with the upper echelons of society – wealthy amateurs, court musicians and city wind players – and one in which soldiers would not have taken part.

Martin Agricola and his *Musica instrumentalis deudsch*

One of the most important events in the history of the transverse flute and flute consort was the publication of the instruction manual, *Musica instrumentalis deudsch*, written by the German music teacher and composer, Martin Agricola, and published by Georg Rhau in Wittenberg in 1529.¹¹ This is a more comprehensive method book than the earlier *Musica getutscht* (1511) of Sebastian Virdung, although it seems that Agricola was familiar with Virdung's book, because he 'borrowed' a number of Virdung's illustrations.¹² Agricola treated all types of instruments, with special chapters devoted to instructions for playing all three sizes of transverse flutes, which he called *Schweitzerpfeiffen* (Swiss flutes) or *querpfeiffen* (transverse flutes). He made his purpose clear in his preface – the book was written for his pupils, in order that they might learn first to sing, then to play instruments, to become learned and virtuous and also that they might be able to earn a living from music if the need arose:

¹¹ Martin Agricola, *MID* (Wittenberg, 1529), 2nd edn. (Wittenburg, 1545); poetic trans. William Hettrick, 'Martin Agricola's Poetic Discussion of the Recorder and Other Woodwind Instruments', *American Recorder* 21, no. 3, 103-13, 23, no. 4, 139-46, and 24, no. 2, 51-60; prose translation, William Hettrick, trans. and ed., *The 'Musica Instrumentalis deudsch' of Martin Agricola: A Treatise on Musical Instruments, 1529 and 1545* (Cambridge, 1994). The two translations by Hettrick are quite different. The first preserves Agricola's poetic doggerel, with its wit, pungency and the keen sense of humour he shows in dealing with his young students. Hettrick's later translation is in more elegant prose, but with a loss of some of Agricola's original flavour.

¹² Hettrick points out that Agricola helped himself to many of the illustrations and some of the instructions printed in Sebastian Virdung's *Musica getutscht* (1511), see Hettrick, *MID*, Appendix I, 'Table of woodcut illustrations in Agricola's *MID* (1529) derived from Virdung's *Musica getutscht* (1511)', 145-6. A single [tenor] flute is shown in Virdung on fol. B3v; Agricola depicts four flutes in 1529 (fol. 13); in 1545 these are on fol. 25v; in 1545 he added an illustration of a single flute (fol. 25r) to show the numbering of the fingerholes from one to six, and the right hand upper-most playing position. Agricola's flutes share similar features to Virdung's; according to Hettrick, Agricola has simply added three flutes to Virdung's single tenor.

When a student cannot sing, he will not gain much and will barely become established in art ... therefore, little boy, learn now, in your early years, to sing correctly in a musical way ... because they who scorn this art and do not consider its usefulness, they remain the coarsest clods, like crude country bumpkins ...

Therefore, dear Music, thanks to you for supporting many poor fellows with your sweet song and turning away hunger and trouble from them. Think on this, little boys, and let her be commended to you ... For money and possessions are quickly squandered. Therefore rich boy, pay close attention and provide yourself in your youth with good arts and virtue, so that you may support your poor life when your great wealth is gone and you do not have to enter the ranks of beggars.¹³

Lutheran religious principles exerted a strong influence on Agricola's teaching and musical output, and are in evidence in the pages of *Musica instrumentalis deudsch*. The teaching of music was of utmost importance in the Lutheran education of young people, and remained so up to the time of J. S. Bach and his sons in the eighteenth century. Before discussing Agricola's treatise, it will be helpful to give a brief background on Agricola and the Lutheran musical and educational principles which guided his career and writings.

Martin Agricola was born into a peasant family in Schwiebus in Silesia, just inside Germany on the Polish-German border (now Swiebodzin, Poland), in 1486. In spite of his lowly birth, he trained himself in music. Like other early sixteenth-century Germans faced with the necessity of declaring their religious sympathies, Agricola became an enthusiastic follower of Martin Luther, combining his interests in theology and music by becoming a music teacher in the Protestant Lateinschule at Magdeburg in 1525, where he remained until his death in 1556.

Martin Luther (1473-1546), an Augustinian monk, challenged the authority of the Catholic church in 1517 by basing his theology on the scriptures rather than on Catholic traditions.¹⁴ He was excommunicated soon after, and went on to create the new theological and liturgical movement of Lutheranism, using music as an important vehicle for worship, and enabling the establishment of a new musical tradition of hymn-singing by the congregation

¹³ From Agricola's Preface to *MID* 1529, translated in Hettrick, *MID*, 67-70.

¹⁴ The standard biography on Martin Luther is Roland Bainton, *Here I Stand: A Life of Martin Luther* (New York, 1995); Martin Luther's writings are collected and edited by Jaroslav Jan Pelikan, Hilton Oswald, Helmut Lehmann, *Luther's Works* (Philadelphia, 1999); for a history of the Lutheran movement, see Lewis W. Spitz, *The Renaissance and Reformation Movements* (St. Louis, 1987).

during religious services.¹⁵ According to Howard Mayer Brown, Luther was himself a musician who sang and played the lute and flute – and he set about translating and arranging sacred songs for congregational use.¹⁶ He engaged several musical advisors, including the Wittenberg publisher Georg Rhau and the composer Johann Walter, to collect, arrange and publish anthologies of tuneful sacred songs with German texts, beginning in 1524 with three collections of monophonic melodies.¹⁷ Among the best known tunes, still used today, are ‘Ein Feste Burg ist unser Gott’, ‘Nun komm der Heiden Heiland’ and ‘Komm Heiliger Geist’. The first collection of polyphonic settings of chorales, Johann Walter’s *Geystliche gesang Buchleyn*, was published in 1524, with 38 chorale tunes arranged for three to five voices. Almost all had the tune in the tenor, and were set in either note-against-note or more florid counterpoint around the *cantus firmus*.

Music was an important part of Martin Luther’s educational philosophy, and the Lutheran movement abetted the development of musical literacy in Germany by fostering the establishment of schools where music was taught to young people as a fundamental practical subject.¹⁸ He believed that music was of the utmost importance in the education of children, and that all schoolmasters should be trained in music. In his forward to Johann Walther’s *Wittemberg Gesangbuch* of 1524 Luther made his reasons clear:

These [Lutheran songs], further, are set for four voices for no other reason than that I wished that the young (who, apart from this, should and must be trained in music and in other proper arts) might have something to rid them of their love ditties and wanton songs and might, instead of these, learn wholesome things and thus yield willingly, as becomes them, to the good... Besides, unfortunately, the world is so lax and so forgetful in training and teaching its neglected young people that one might well encourage this first of all.¹⁹

¹⁵ Robin A. Leaver, ‘The Lutheran Reformation’, *Man and Music: The Renaissance*, ed. Iain Fenlon (London, 1989), 263.

¹⁶ Whether he played a transverse flute or a recorder cannot be determined; Luther’s musical abilities are discussed in Howard Mayer Brown, ‘The Music of the Reformation and the Council of Trent’, *Music in the Renaissance* (Englewood Cliffs, N.J., 1976), 273.

¹⁷ These are the *Achtliederbuch* and two volumes of *Enchiridion*, see ‘German chorale settings’ *GMO*.

¹⁸ See Robin A. Leaver, ‘The Lutheran Reformation’, *The Renaissance*, ed. Iain Fenlon (London, 1989), 265-70.

¹⁹ Luther’s original text is in *Luther’s Works*, Ed. J. Pelikan and H. T. Lehmann (St. Louis, 1955), 54, 316; the above translation of Luther’s forward to Johann Walther, *Wittemberg Gesangbuch* (1524) is from Oliver Strunk, *Source Readings in Music History* (New York, 1950), 341-2; for another translation

In the decades following the publication of Walter's songbook, numerous collections of monophonic hymn tunes and anthologies of music were published for use in the schools. The Wittenberg publisher Georg Rhau was most prolific.²⁰ Among his most significant publications are Agricola's instructions for students and amateurs, *Musica instrumentalis deudsch* in 1529, *Symphoniae jucundae*, motets for young musicians, in 1538, and also for school children, a new and enlarged edition of Walter's songbook in 1544, *Newe deudsche geistliche Gesenge für die gemeinen Schulen*, which contains chorales composed by Martin Agricola, Sixt Deutsch, Benedictus Ducis, Georg Forster, and three Catholic composers with Protestant sympathies, Heinrich Isaac, Ludwig Senfl and Thomas Stolzer.²¹

Luther's call for universal music education created a pressing need for simple books in the vernacular which could teach the practical fundamentals of music quickly to young students and amateurs. Before Luther's establishment of music education in Germany, books on music were written in Latin as lofty orations to be debated and discussed amongst the *cognoscenti*.²² Their focus was primarily on matters of theory and philosophy, the principles of which were traditionally taught to church musicians and singers in choir schools and monasteries. In answer to Luther's call, a number of school textbooks were published in German.²³ Although many of them retained Latin titles, and the theoretical material was simplified in order to be accessible to school boys and musical amateurs, the theory lessons were sound, drawn from Latin masters such as Franchinus Gaffurius, Heinrich Glarean and others.²⁴ The material provided by the school books covered what was needed to become a practicing musician.

see Robin A. Leaver, 'The Lutheran Reformation', 269; a complete edition of the songbook is published in Johann Walther, *Geystliche Gsangbüchlin*, facs. (Kassel, 1979).

²⁰ See *GMO*, 'Georg Rhau', for a list of his publications.

²¹ *Symphoniae* (RISM 1538₈), ed. H. Albrecht (Kassel, 1959); *Newe deudsche geistliche Gesenge für die gemeinen Schulen* (RISM 1544₂₁), ed. H. J. Moser (Wiesbaden, 1958).

²² For an illuminating discussion of the debates by theorists, see James Haar, 'The Frontispiece of Gafori's *Practica Musicae* (1496)', originally published in *Renaissance Quarterly*, 27 (1974), 7-22; rpt. James Haar, *The Science and Art of Renaissance Music*. ed. Paul Corneilson (Princeton, NJ, 1998), 79-92.

²³ Important examples are Bernhard Bogentantz (b. 1494-d. after 1527), *Collectanea utriusque cantus* (Cologne 1515/1519/1528/1535); Sebald Heyden (1499-1561), *Rudimenta* (1529) and *Musica stoicheiosis* (1532) (both lost); Sebald Heyden, *Musicae* (Nuremberg 1540/R 1969; Engl trans C. A. Miller, *MSD*, 26 (1972); Nikolaus Listenius (1510-?), *Musica* (1533/1537/R1927), which was popular as a school primer in Germany and Austria throughout the sixteenth century; Martin Agricola (1486-1556), *Ein kurtz deudsche Musica* (Wittenberg, 1528/facs. R Cologne, 1998) 1533 rpt. as *Musica choralis deudsch* (Olms, 1969).

²⁴ Gaffurius's most influential work was his *Practica musicae* (Milan, 1496; English translation, 1968); the Swiss theorist Glarean wrote his first musical treatise, *Isagoge in musicen* in 1516, containing

Following the path established by earlier theory-book writers, Martin Agricola wrote his first music treatise, *Ein kurtz deudsche musica*, published by Rhau in 1528. As the title suggests, this was an abbreviated and practical text, covering modes, hexachords, solmization and plainchant, and it is a typical example of a school text. Only *musica plana* (non-mensural music) was covered, including the *scala*, hexachords, hard, soft and natural intervals, solmisation, clefs, and the eight church modes and their transpositions. It is logical, clear and brief in presentation and practical in its approach, with performance of plainchant as its main objective. The book was an influential model for numerous later books (often unacknowledged). Agricola followed with a second book, *Musica figuralis deudsch* (German mensural music) in 1532, which covered notation, proportions and *musica ficta*, a knowledge of which were needed for the performance of mensural polyphony.²⁵

Agricola also wrote a substantial amount of music for his pupils. Fifteen collections by him were published between 1538-45 for school use. In the preface to *Vesperarum precum official* (1538) he stated that he ‘wished always to assist schoolboys to study the honourable discipline of music’; his arrangements of *bicinia* and *tricinia*, each of two volumes, were, he stated, to be studied ‘for their artistic merit and to develop students’ ability and taste’.²⁶

Agricola’s *Musica instrumentalis deudsch*

Agricola turned his attention to a different kind of treatise when he wrote his *Musica instrumentalis deudsch* in 1529. Its popularity and widespread use is attested to by the

chapters on solmization and the modes; English translation in *Journal of Music Theory*, 3 (1959), 97-139. Bernhard Bogentantz (1494-1527), was one of the first to publish a Lutheran school manual, *Collectanea utriusque cantus* (Cologne, 1515, 3/1535) in two books: *musica plana* and *musica mensuralis*. He regularly quotes both text and musical examples from Gaffurius and Adrian Cochlaeus *Musica* (Cologne, 1507) both text and music examples. See also Georg Rhau’s school textbook, *Enchiridion utriusque musicae practicae* (Wittenberg, 1517); for the background of Renaissance music theory, see C. G. Allaire, *The Theory of Hexachords, Solmization and the Modal System*, Musicological Studies and Documents, 24 (Rome, 1972); for a discussion of the Lutheran school theory textbooks, teaching practices and materials, see Frederick W. Sternfeld, ‘Music in the Schools of the Reformation’, *Musica Disciplina*, 2 (1948), 99-122.

²⁵ For translations of *Ein kurtz deudsche musica* and *Musica figuralis deudsch* see D. Howlett, ‘A Translation of Three Treatises by Martin Agricola: *Musica choralis deudsch*, *Musica figuralis deudsch* and *Von den proportionibus*’, Ph. D. dissertation (Ohio State University, 1979), 60-151.

²⁶ See ‘Agricola’, *GMO*, where all of Agricola’s musical and theoretical works are listed in the bibliography.

reprintings in 1530, 1532, 1542, and a fully revised edition in 1545. This is the first comprehensive book of instructions in the art of playing music on instruments of all kinds. There are numerous illustrations and the text is in a rather crude poetic doggerel – these features were designed to hold the attention of youngsters, as Agricola indicated in his 1529 preface:

I have written it in German rhyme and meter, for a special reason, so that youth and others who want to study this art might all the more easily understand it and retain it longer. For experience tells us that nice proverbs and sayings that rhyme are much more easily understood and remain fresh longer in one's memory than others that are spoken in simple form without rhyme.²⁷

Agricola intended his book to be used by ‘youth and others’ – undoubtedly the impetus to publish was due to a widening interest amongst amateur and professional musicians in playing consort music on instruments. The writing is clear and didactic in nature, providing a valuable point of reference for playing instrumental music in general, and more importantly for purposes of this study, for playing the transverse flute. I will discuss primarily the material related to the transverse flute.

Agricola treats a variety of wind instruments: recorders, cornetts, shawms, bombards, crumhorns, three-holed pipes, bagpipes, gemshorns, *rauschpfeiffen*, and transverse flutes. He groups recorders, crumhorns, cornetts, shawms, bombards and bagpipes into a single chapter, using the recorder (*flöte*) to demonstrate basic fingerings, because, as Agricola points out, the fingering system is one and the same for all these instruments. The transverse flute was discussed entirely separately, because ‘the technique of blowing and fingering is a different matter’ on *Schweitzerpfeiffen* (Swiss flutes). The flute chapters cover fingering, range, transposition, and sound production.

Agricola is the earliest writer to give instructions for the flute as a consort instrument. He depicts four *Schweitzerpfeiffen*, labelled ‘discantus, altus, tenor, bassus’ (Ill. 3.2.2).²⁸ The

²⁷ William Hettrick, ‘Martin Agricola’s Poetic Discussion of the Recorder and Other Woodwind Instruments, Part I: 1529’, *The American Recorder* (November, 1980), 103-113, and ‘Part II: 1545’, *The American Recorder* (May, 1983), 51-60; the portion quoted above is from Part I, 103. These colourful poetic verse-rhymes will be used for quotes following in this discussion.

²⁸ Agricola depicts four flutes in *MID* (1529) (fol. 13); in 1545 these are on fol. 25v; in 1545 he added an illustration of a single flute (fol. 25r) to show the numbering of the finger holes from one to six, and the right hand upper-most playing position. Agricola’s flutes share similar features to Virdung’s, according to William Hettrick, Appendix I, ‘Table of woodcut illustrations in Agricola’s *Musica instrumentalis*

picture is not to scale; it appears to show the alto instrument as being slightly shorter than the tenor, but Agricola's fingering charts make it clear that the alto and tenor flutes are one and the same, both in D.



Ill. 3.2.2. A consort of flutes, Martin Agricola, *MID*, 1529.

All three sizes of flutes are in one piece, even the bass (there are three surviving original one-piece bass flutes, see Ch. 1.3). The six finger holes were equally spaced, as shown also in the single flute depicted by Virdung, rather than spaced in two groups of three as found on all surviving instruments. A double ring just above the mouth-hole may have been an attempt to show where the cork is placed, quite near the mouth hole. Agricola's description and illustration, and Graf's illustration of 1523, make it clear that the full 'German' flute consort consisted of a soprano, two tenors and bass. His fingering charts (1545) show that the flutes were in A, D, D and G.

Agricola began his flute chapter of 1529 with the following title:

deutsch (1529) derived from Virdung's *Musica getutscht* (1511)', 145-6. A single [tenor] flute is shown in Virdung on fol. B3v; Agricola copied this and added three flutes to Virdung's picture.

Ein anders schönes und recht fundament wie drey oder vier
Schweitzerpfeiffen noch forderung des gesanges, mit einander gebraucht und
wie die sechs löcher noch den Noten recht gegriffen sollen warden.

Another fine and proper foundation for combining three or four Swiss flutes to
play vocal music, and how the six holes should be properly fingered to play
the notes.²⁹

Agricola's choice of the term *Schweitzerpfeiff* (Swiss flute) indicates an association of
the transverse flute with the instrument of the Swiss soldiers. But unlike Virdung, who
described a single transverse flute, and only in its military function, Agricola regarded the
Swiss flute as a consort instrument for playing vocal music in three or four parts. He makes no
reference to military use at all.

Agricola opens his 1529 flute instructions by outlining some basic principles of
fingering and blowing:

In addition, by using the following chart,
Step by step, I'll endeavour to teach you the art
Of obtaining the notes in a manner astute
On the instruments called the transverse or Swiss flute.
Now the numbers and circles you know, I can tell,
For the rules for recorder have treated them well;
But the technique of blowing to make the flute sound
Is a different matter; now all this is found in the charts,
Which show well that the first eight notes need
Only moderate breath, then you increase your speed
For the seven that follow, and then the next four
Somewhat faster, and then the top three even more.³⁰

Agricola's approach to blowing is fairly crude and basic, a 'blow harder' approach for
ascending the three-octave scale he ascribed to the flutes. The first octave was labelled
mediocri, or moderate breath, the second octave *schnelle veloci*, (fast breath); the next four
notes were *noch schneller velociori* (even faster breath). The highest three notes were marked
auss schnellst velocissimo, the fastest breath – these notes are barely possible to emit with
extreme force of air on a tenor flute, and are not of any practical use. These notes are not at all

²⁹ Agricola, *MID* (1529), fol. 12r., trans. Hettrick, *AR*, 1 (1980), 109-110.

³⁰ Trans. Hettrick, *AR* I, 110.

possible on sopranos or basses.³¹ Just why Agricola included them is a mystery. Such high, penetrating tones may have been emitted by Swiss flute-playing soldiers on the battlefield, but are never needed for consort music.

The rather simplistic blowing instructions above were modified by the curious and rather more sophisticated suggestion that the sound of the flute is enhanced by blowing ‘mit zitterndem odem’ (with a quivering air stream).³² Agricola’s is the only instruction book to suggest the use of vibrato on the Renaissance flute. He does not elaborate further on how to produce the quivering air stream on the flute. Nevertheless, I am certain that vibrato was fundamental to tone production on the flute, as Agricola says. I have documented further important historical evidence from sources not connected to flute playing but to organ building, which prove beyond a doubt that the Renaissance flute was played with breath vibrato.³³ My findings on the subject of breath vibrato and the technique of producing it on the Renaissance flute are discussed fully in Ch. 4.6 of this thesis, in order that this special and vital element of sound production will be taken seriously and incorporated by modern players.

The fingering charts to which Agricola refers above are arranged in six separate columns, showing the numbers and circles for each fingering, the clefs, note names, solmization syllables and advice for blowing (‘vento’) for each octave. Agricola indicated where to increase the speed of the air, instructing to blow faster in ascending: for the first octave a moderate breath, increasing for the next full octave, and again for the next half octave, with the fastest air for the top three notes.

Agricola’s fingering charts are reproduced in App. 1, and discussed fully in Ch. 4.4. Briefly explained here, the ‘numbers and circles’ referred to in Agricola’s instructions above designate open and closed finger holes. A range of three full octaves is given, D-d’’ in the bass (fol 13v), A-a’’’ for the tenor (fol. 14r), and e-e’’’ in the treble (fol. 14v). These are meant as transposing fingerings, for playing up a fourth (sounding up an octave and a fourth) from the written pitch.

Agricola did not refer to transposition until his revised edition of 1545, when he revealed that he expected flute players to know three transpositions, which he called ‘methods’ for performing on Swiss flutes, emulating the normal practice for singers, organists and lutenists:

³¹ My experience is with copies of the Verona flutes, pitch a’ = 410, but no flutes known to be ‘Swiss’ survive; the flute maker Ardal Powell has made conjectural ‘Swiss flutes’ but these do not work with Agricola’s fingerings, and further experiments need to be undertaken.

³² Hettrick, *AR I*, 110.

³³ For the historical evidence and arguments for using breath vibrato on Renaissance flutes, see Nancy Hadden, ‘In Search of the Sound of a *fiffara*’, *Musicque de Joye*, 187-202.

Now my wish is to hold nothing back,
 But continue along a new tack
 And explain the abovementioned way
 Of performing on Swiss flutes; I'd say
 It's the one that's the easiest to use,
 Therefore I have presented these views,
 but don't let it annoy you to find
 That I speak of two, not just one kind,
 And that once a third method I sought,
 Which my *Instrumentalis deudsch* [1529] taught
 For one always can transpose each key
 As is practiced in singing, you see,
 And is done on the organ as well,
 And on the lute also I tell,
 And on others, and so on, and so forth,
 Therefore let your suspicion now go forth.
 Thus of each I have given a view;
 Pick the one that's most pleasing to you,
 Nonetheless, and in general I'll say
 That to me this one seems the best way.³⁴

The above passage can be explained as follows. Agricola's revised edition of 1545 presents two more sets of fingering charts for flute consort. The first is for flutes in C, G and D. As in the 1529 edition, these are not actual pitches of instruments, but are for transposition, this time, up a fifth. The second set of fingering charts is labelled for instruments in G, D, and A. Agricola describes these as 'three regular scales' which are 'the easiest' to use. Here we have flute fingerings which match the actual pitches of the instruments (but notated two octaves lower than sounding pitch).

The two new sets of fingering charts for flutes in bass in C, alto/tenor in G and treble in D, are labelled 'three irregular scales, transposed to the upper fourth' (actually sounding up a fifth). The second set, labelled 'three other, regular scales for these flutes', for bass in G, alto/tenor in D and treble in A, is the 'regular' set of fingerings which Agricola considered the 'easiest and best' one, no doubt because these charts were notated at the actual pitches of the consort flutes, G-D-A. They were still considered to be 'transposing' in a sense, because flautists transposed up an octave from written pitch (note that these charts are notated two octaves below sounding pitch).

³⁴ Hettrick, *AR*, 2, 53.

The considerations for choosing a transposition are the obvious ones of range and mode, but Agricola indicated that players must exercise artistic judgement as well: ‘pick the best and most pleasing’ sounding transposition. Playing at written pitch with the G-D-A configuration, while certainly the easiest, is not always possible. In practice, all three transpositions are needed to play vocal repertoire. Michael Praetorius’s prescribed ranges for singers show the discrepancy in range between voices and flutes – his range chart for the full vocal consort is over three octaves from bass C to soprano e’’ or f’’, extending to nearly four octaves for exceptional singers (to FF in the bass and a’’ in the soprano). Praetorius gave ranges for flutes of just over three octaves, notated at sounding pitch, from the bottom note of the bass, g, to the highest note of the soprano, a’’.³⁵ In practice, vocal polyphony rarely goes below D or C in the bass or above d’’ or e’’ in the soprano, making much of the repertoire playable on flutes if they transposed up by a fourth or a fifth.

In the final chapter of *MID* (1545), Agricola added a section concerning articulation and embellishment.³⁶ Agricola advised that all notes should be tongued, and prized the clarity achieved by the perfect synchronizing of tongue and fingers. Note values from semibreve (breve/whole note in modern notation) up to semiminim (crotchet) ‘have the same kind of articulation’, which he illustrated as *de*; faster notes – *semifusa* and *fusa* – use more rapid tonguing syllables, alternating hard and soft syllables -- *diridiridiri* in his example. He added that ‘there are some’ who play semiminims (crotchets) with *diridiridiri*. An even faster tonguing, *tellelletel/le* which Agricola called ‘flutter tongue’ (*flitterzunge*), is used for *semifusa* embellishments, a technique Agricola considered to be advanced, and only to be studied properly with specialist teachers:

There follows an example of the use of the tongue:

If your aim is to play the right way,
 Then learn well your *di ri di ri de*,
 (It belongs to the small notes); then you
 Won’t be laughed at for what you may do.
 If to forge on ahead is your will,
 And to learn to embellish with skill,
 Using figures with all the right features,
 You may gain this technique from your teachers,
 Nonetheless, do not take it amiss,
 If I give you instruction for this.

³⁵ Michael Praetorius, *SM*, trans. Blumenfeld, 20-22.

³⁶ Agricola, *MID* (1545), fol. 35r. Agricola’s tonguings were illustrated with musical examples (see Ch. 4.8 for further discussion).

The fact that Agricola's instrument treatise was in print from 1529 to 1545, a period of nearly twenty years, is an indication of the vogue in Germany for learning to play instruments of all kinds. It is also the only source of detailed instructions for the complete Renaissance flute consort – soprano, alto, tenor and bass – to have been published in the sixteenth century. Further explanation of the technical and practical aspects of Agricola's instructions and its relationship to other treatises will be found in the relevant chapters on technique in Ch. 4, 'Playing the Renaissance Flute'.

The First Music for Flute Consort

The first known collection of music to specify flutes (and recorders) is Arnt von Aich's *Hubscher lieder*, published in Cologne, ca. 1519-1520.³⁷ The title page is shown in Ill. 3.2.3 below.



Ill. 3.2.3. Arnt von Aich, *Hubscher lieder*, Cologne, ca. 1519-1520.

In dissem Buechlyen fynt mā LXXV. Hubscher Lieder myt Discant. Alt. Bas. und Tenor. Lustick zu syngen. Auch etlich zu fleiten, schwegelen und anderen musicalisch Instrumenten artlichen zu gebrauchen

In this little book one finds seventy-five pretty songs for soprano, alto, bass and tenor, amusing to sing. Also some to play in an artful way with recorders, flutes and other musical instruments.

³⁷ A precise date for Aich's publication cannot be verified; the volume is listed in RISM as [1519₅]. A modern edition is H. J. Moser, ed., *Das Liederbuch des Arnt von Aich* (Kassel, 1930).

The musical content is composed entirely of German songs in four parts with the tune and text in the tenor. This type of song, now known as ‘tenor-lied’, was prevalent in Germany during the first quarter of the sixteenth century. No composers are named in the table of contents, but thirteen pieces have been identified from concordances which link Aich’s publication to several important south German song collections compiled between 1505-20: the Augsburg manuscript,³⁸ compiled *ca.* 1505-14, associated with the discant shawm player Jacob Hurlacher; the Erhard Öglin songbook, published in Augsburg in 1512,³⁹ which is the earliest printed source entirely for four voices; and two volumes of German songs published in Nuremberg by Peter Schoeffer, the first in 1513 and a second undated volume a few years later.

Composers identified from the above concordances are Jorg Brack, Heinrich Eytelwein, Malchinger, Adam von Fulda, Adam Renner, Sebastian Virdung, M. Pipelare, Heinrich Isaac and Paul Hofhaimer, all of whom were active in southern Germany between 1510-1520.⁴⁰ H. J. Moser believes that Aich’s collection may have begun to be assembled as early as *ca.* 1512 in Augsburg.⁴¹ He bases this partly on the presence of the final piece in the tenor part book, a setting of ‘Fried gib mir Herr’ by the Bishop of Augsburg, Friederich II of Zollern (d. 1505), and partly on the number of concordances with the collections listed above.

Peter Van Heyghen pointed out in his informative discussion of Aich’s collection, which focuses primarily on the recorder, that it is a ‘rather chaotic’ collection which has the earmarks of being ‘hastily assembled’ for publication from a ‘disparate collection of parts’.⁴² He observed that the songs are in a different order in each partbook, that three songs have one part printed twice, and that there is an ‘extra’ piece for which only the tenor part is given. Texts appear in the tenor book only, not underlaid in the music but in prose on facing pages, more in keeping with arrangements found in prints of Lutheran chorales, for example Johannes Walther’s *Geystliche gesangk Buchleyn* (1524).

Although flutes (*schwegelen*) and recorders (*fleiten*) are mentioned on the title-page, instrumentation is not mentioned in the part-books, so it must be worked out by looking at the ranges which songs are suitable for recorders, which for flutes. Van Heyghen has determined

³⁸ Louise Jonas, ed., *Das Augsburg Liederbuch*, *Berliner Musikwissenschaftliche Arbeit*, 21, ed. C. Dahlhaus and R. Stephan (Munich, 1983).

³⁹ Robert Eitner, *Erhart Öglin’s Liederbuch zu vier stimmen (Augsburg, 1512)*, ed. Robert Eitner, *PÄMw* ix (Berlin, 1880).

⁴⁰ See *RISM* [1519s] for composers identified in *Hubscher lieder*; for concordances among all the sources discussed here see Louise Jonas, *Das Augsburger Liederbuch II*, Commentary.

⁴¹ H. J. Moser, *Das Liederbuch des Arnt von Aich* (Kassel, 1930), xi.

⁴² Peter van Heyghen, ‘The Recorder Consort in the Sixteenth Century: Dealing with the Embarrassment of Riches’, *Musicque de Joye*, 285.

that nearly all of the 76 songs are playable as written (sounding up an octave) on the standard four-part recorder consort of alto in g', two tenors in c' and basset in f at notated pitch. He gave the number playable on flute consort at notated pitch as 'considerably lower' at 33, with the proviso that 'we have no way of knowing' whether the top part was meant for a soprano flute in A or a tenor D instrument.⁴³ This question is a legitimate one, and is based on the fact that there seemed to be two different practices for the make-up of a consort of flutes: the German one described by Agricola indicates that the highest part was played by a little A soprano flute, whereas the French treatise *Epitome musicale* (Lyons, 1556) by Philibert Jambe de Fer, instructed that the *dessus* (soprano) part was to be played by a tenor in D, as were the alto and tenor parts, thus requiring only two sizes of flutes to make a four-part consort (see discussion of this French practice in Ch. 3.3).

If we assume that the consort pictured by Urs Graf in 1523, and discussed by Agricola in 1529 and 1545, was typical for German use, then Aich's pieces should be played on a soprano in A, two tenors in D and bass in G. Although there is no indication that the use of only two sizes of flutes was common in Germany, it cannot be ruled out entirely, as German players may have adopted the 'French' solution in some situations. Aich's collection must first be considered with the 'German' consort in mind – soprano in A, two tenors in D, and bass in G, to determine how the pieces in the collection are playable with this consort, and to consider the 'French' way as a possible alternative for pieces which do not otherwise fit.

The German preference for the A soprano instead of the D tenor for the soprano voice in the consort may be explained by the fact that recorders, crumhorns, viols and other instruments routinely made up their consorts with instruments of three sizes pitched a fifth apart. It is likely that the first flute consorts adopted this system as a matter of course, as it was already common practice by other consorts.

The tone quality of the soprano flute is quite distinctly different from the tenor. In the upper register, the tone is bright and clear. In the lower register it sounds sweet and a bit breathy, somewhat akin to a soprano singing in head voice in the lower part of its range. The tenor is stronger in tone, especially in the upper register, and dominates the consort when playing the soprano part. This is a desirable balance for some repertoire (as I believe it is for the treble-dominated French chanson), but it may be that for the German tenor-lied, where the tune is often in the tenor line, the soprano flute offers a better balance, particularly in the third octave. The highest three notes, f''', g''' and a''', are difficult to produce quietly on the tenor, although experienced tenor players can bring them under control with embouchure and breath manipulation. For less experienced players these high notes require extreme force of air on tenors – Jambe de Fer calls these notes 'fort cruz et rudes, pour la vehemence du vent qui y est

⁴³ van Heyghen, 'The Recorder Consort in the Sixteenth Century', 286.

necessaire' (very crude and rough because of the vehemence of air which is necessary).⁴⁴ This crudity is not necessary on the soprano flute, which is able to sound these same three notes more easily and with a lighter sound which balances and blends well with the lower parts.

Van Heyghen points out that transposition is not needed for the recorders to play most of the pieces in Aich's collection. His careful analysis of all of the recorder ranges bears this out. He further suggests that because only around half the pieces suit a flute consort untransposed, the recorder consort was probably the primary focus of the collection.⁴⁵ He does not address the possibility that flute consorts may have transposed the music – which brings nearly all of the pieces into playable range – even though the recorders did not need to do so. All three 'methods' documented by Agricola, as discussed above, are needed for flutes: transposition up a fourth, up a fifth or playing at written pitch (sounding up an octave).

Van Heyghen compiled a list of the musical contents of Aich's book, with clefs, ranges and *modus* indicated for each piece. I have reproduced his list in Table 3.2.1, to which I have added a column at the right to indicate whether pieces must be transposed up a fourth or a fifth, played as written, or are not playable on flutes.

The music falls into two categories: 35 pieces are in *cantus durus*, without a B \flat in the key signature, and 41 are in *cantus mollis*, with a B \flat in the key signature which signals a transposed mode. Playing in *cantus mollis* was the mode recommended by most writers as the best for flutes (see discussion in Ch. 4.4). But it appears that Aich was not concerned with which mode sounded best on flutes; twenty pieces notated in *cantus durus* fit the ranges at written pitch on the 'German' flute consort, A-D-D-G, although posing some difficulties of tessitura and balance in the middle parts. The alto and tenor parts are frequently in the low octave, a register which does not project well. Since the melody is usually in the tenor part, such a low tenor tessitura is not ideal. Ex. 3.2.1., 'Das ich mein herz' is typical of the *cantus durus* pieces which fit the 'German consort but with a low tessitura.

Das ich mein herz

⁴⁴ Philibert Jambe de Fer, *EpM* (Lyon, 1556), 47.

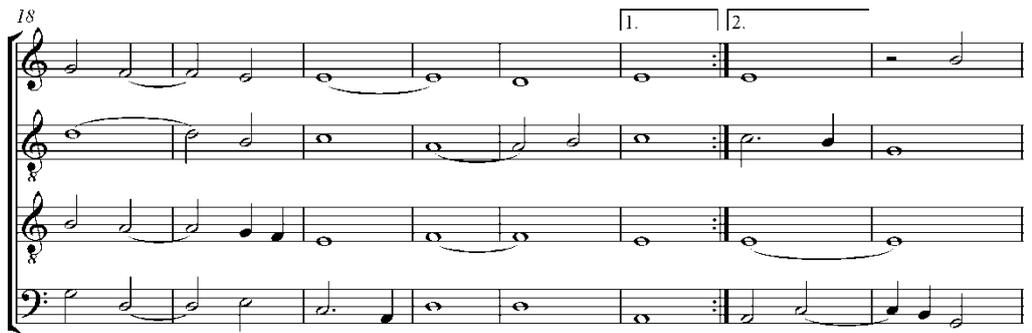
⁴⁵ van Heyghen, 'The Recorder Consort in the Sixteenth Century', 288.



System 1: Four staves of music. The top staff is in treble clef, and the bottom three are in bass clef. The music consists of various note values including quarter, eighth, and sixteenth notes, with some rests.



System 2: Four staves of music, starting at measure 9. The notation continues with similar rhythmic patterns and note values as the first system.



System 3: Four staves of music, starting at measure 18. This system includes a first ending (1.) and a second ending (2.) marked with repeat signs and first/second endings.



System 4: Four staves of music, starting at measure 26. The music continues with a mix of note values and rests.



System 5: Four staves of music, starting at measure 35. The notation features a variety of rhythmic figures and note values.

The image displays a musical score for a piece titled 'Das ich mein herz' in *cantus durus*. The score is presented in four systems, each containing four staves (Soprano, Alto, Tenor, and Bass). The first system begins at measure 43, the second at measure 51, the third at measure 59, and the fourth at measure 65. The notation is in a single key signature with a common time signature. The music features a mix of quarter, eighth, and sixteenth notes, often grouped with beams and slurs. The bass line is particularly active, providing a steady accompaniment for the vocal parts.

Ex. 3.2.1. 'Das ich mein herz' in *cantus durus*.

Fifteen further *cantus durus* pieces descend below the range of flutes in one or more parts. By transposing these pieces up a fourth, which adds a flat to the key signature, these become *cantus mollis*, and the low alto and tenor parts are brought into a more satisfactory range. The added B \flat s present some troublesome difficulty for the soprano flute, with its B \flat fingering, ●●●●●∅, which necessitates half-shading the small bottom hole (6). This fingering produces a note that is unstable and weak in sound and intonation; a skilled player can ameliorate these weaknesses somewhat.

Of the forty-one pieces already notated in *cantus mollis*, fifteen are within the range of the ‘German’ consort. Playing these *cantus mollis* pieces as written presents the same B₁ difficulty for the treble. Playing the soprano part on a D tenor obviates the problem, and it may be that players considered this option for playing pieces in *cantus mollis*.

Twenty-four *cantus mollis* pieces descend below range in the bass or tenor part, or both. To enable the consort to play the *cantus mollis* pieces which go below range, transposition up a fifth is a solution, as Agricola recommended in 1545. This results in both soprano and bass flutes playing at the extreme upper range: the soprano often ascends up to its highest note a^{'''}, and the bass part often ascends to e^{''}, f^{''} and g^{''}, at the upper limit of the two octave range given in most fingering charts.

Five pieces cannot be played on the flute consort because one part descends too low, but transposition would put one or more parts too high:

3. ‘Apollo aller kunst’, where the tenor descends a note below range, to c, but soprano and bass are too high to be transposed any higher.
6. ‘Ach Jupiter’, where the bass descends to F, but the tenor part is too high to be transposed higher.
56. ‘Meyn hochste frucht’, where the bass descends to F, but the altus part is too high to be transposed higher – it is possible to play the piece up a fifth with consort G-d-a-a, but this is an irregular combination.⁴⁶
67. ‘Sye ist die schon’, and ‘Ursprung der lieb’, where the bass descends below range to F, but the soprano part is too high to be transposed higher.

It is possible to make these pieces playable by altering those few notes which are out of range. This is a practice which Lewis Lockwood identified with the *alta capella* in Ferrara, especially associated with the repertoire of the Casanatense manuscript.⁴⁷ Although it is not mentioned by Agricola, it is reasonable to suppose that it was an obvious solution adopted by practical musicians.

⁴⁶ No. 33, ‘Fors seulement’, is also in an irregular combination of clefs, the only piece with C1 clefs in soprano, alto and tenor parts and C4 in the bass. It is playable at pitch on treble in A and three D tenors, or on four D tenors. Van Heyghen notes that ‘for recorders this piece needs the irregular combination of three g discants and a c tenor’, see ‘The Recorder Consort’, 288.

⁴⁷ Lewis Lockwood, *Music in Renaissance Ferrara* (London, 1984), 269-71.

German Sources for Flute Consort after Arnt von Aich

At least one more book of flute consort music was published in Germany, but it has not survived. *Viginti cantiunculae Gallicae 4 vocum, excusae Argentorati apud Petrus Schoeferus 1530, in 12, per transversum, maiori forma folii, chartis 16* was published by Peter Schöffler in Strasbourg, 1530. From the description, which appeared in Conrad Gesner's *Pandectarum* (Zurich, 1548) listed along with a book of flute duos published by Attaignant (also lost), this was a book of French songs for four voices, arranged for transverse flutes (*transversum*).⁴⁸

The only other German musical source to indicate performance by flutes is found in manuscript jottings of a copy of the fourth edition of Georg Forster's *Frisch Teutsche Liedlein, erster Teil* (1552) (now in the Staatbibliothek, Ulm).⁴⁹ Forster's volumes went through various editions between 1539 and 1556. The flute was not mentioned in the published music, but rather in hand-written annotations found only in the 1552 edition. Twenty-six pieces in the tenor part book have hand-written notes which indicated the suitability for flutes with the words *gut zwerchpfeiff*, or simply *zwerch*.⁵⁰ Whether this indicated that all the parts were considered good for flutes, or only the tenor part, is not entirely clear. Six of the pieces are in *modus durus*, although this feature alone does not necessarily rule out flutes, as shown in the discussion of Aich's music above. Three pieces descend to F in the bass, one note lower than the bass flute's range; these notes are isolated cadential ones resolving from the fifth above and can be taken up the octave. Otherwise most of the annotated pieces are in good ranges for the flute consort, with a simpler and more transparent texture than the music published by Arnt von Aich.

Ludwig Senfl's 'Was wird es doch des Wunders noch' (Ex. 3.2.2) which is marked *gut zwerchpfeiff*, is a particularly attractive example, with its strong tenor melody and light contrapuntal interplay among the other parts.

⁴⁸ See Lawrence F. Bernstein, 'The Bibliography of Music in Conrad Gesner's *Pandectae* (1548)', *AM*, 45 (1973), 148. The flute duos are discussed further in Ch. 3.3 below.

⁴⁹ Ed. Kurt Gudewill and Wilhelm Heiske, *Das Erbe Deutscher Music*, 20 (Wolfenbüttel, 1964).

⁵⁰ A complete list of the annotations from the Ulm copy is in Anne Smith, 'Die Renaissance Flöte' (1978), 68-9.

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Ex. 3.2.2. Ludwig Senfl, 'Was wird es doch des Wunders noch', Georg Forster *Liederbuch* (1552).

Surviving catalogues of German music libraries and instruments show that music was cultivated by wealthy and cultured amateurs, who amassed large libraries of music, and participated in vocal and instrumental music-making on a vast array of instruments, including flutes. Note-worthy among collectors of music for whom inventories survive are the Ammerbach and Bonifacius families in Basel⁵¹ and especially the Fugger family in Augsburg.⁵²

The Fuggers, a family of Augsburg bankers, were strong patrons of the arts, and amateur musicians. Both Raymund Fugger (1489-1535) and his son, Raymund junior (1528-69) devoted much energy to music, and amassed a large collection of music and instruments on which to play it. Raymund Fugger junior ordered inventories of both his music library and instrument collection to be made in 1566. The inventory is divided into two sections, one for instruments and one for music. The first 78 items of music are works that he inherited from his father's collection in 1535. The remaining 252 works were collected by the son between 1535 and 1566.⁵³ The instrument collection, the largest one inventoried, makes it one of the most important and comprehensive inventories for study, because of the specific connections which can be made between the instruments and the music. These inventories will be discussed specifically regarding their relationship to consorts of flutes.

Raymund senior's music collection, compiled before 1535, is important as an example of a wealthy amateur music lover's tastes during the early years of the sixteenth century in Germany. The music is a cosmopolitan collection of Flemish, French, German, and Italian works – mostly sacred – including masses, motets, hymns, magnificats and lamentations by Fevin, Mouton, Josquin, Brumel, Agricola, Okeghem, Isaac, Ghiselin, and Johann Walter's song-book, listed as *Gaistliche gesang biechlen Wittenperg*. The secular music, only ten volumes, includes German songs, Italian *frottole*, Petrucci's *Odhecaton* (1501), and a volume of 'Carminum', otherwise not identified. The theoretical treatise *Practica musica* by Francisco Gaffurius is also included as 'Ain Buch in Rot Leder bunden. In folio. Titt. Pratica musica. Utriusque Cantus Excellentiss. Franchini Gaffori Laudensis'.

⁵¹ See John Kmetz, *The Sixteenth Century Basel Songbooks* (Bern, 1995) for a study of the manuscripts belonging to the Ammerbach and Bonifacius families in Basel.

⁵² The Fugger inventories are published in Richard Schaal, 'Die Musikbibliothek von Raimund Fugger d.J.', *Acta Musicologica*, 29 (1957), 126-37, and Richard Schaal, 'Die Musikinstrumenten-Sammlung von Raimund Fugger d.J.', *Archiv für Musikwissenschaft*, 21 (1964), 212-216; Schaal lists the entire original text with original spellings, of the 1566 inventory of music and instruments, now in Kurbayern Auseres Archiv Nr. 4851, fol. 170-180. The instruments are on fols 170-173r. For an English translation of the instrument inventory, see Douglas Alton Smith, 'The Musical Instrument Inventory of Raymund Fugger', *GSSJ*, 33 (1980), 36-44.

⁵³ Schaal, 'Die Musikbibliothek', 126-37.

Of particular interest for the flute consort is an entry for ‘Teutsche Lieder auf die fletten, und ande Instrument’ (German songs for flutes and other instruments). Further identification of this volume is not given, but a likely candidate is Arnt von Aich’s collection of German songs for flutes, *Hübscher lieder ... zu fletten, swegelen und anderen musicalisch instrumenten*.

The music collection continued by Raymund junior lists music in printed and manuscript editions for three to eight voices. Mass and motet collections are again the most numerous, but there are chansons, *villanelle* and madrigals by Willaert, Verdelot, Sermisy, Janequin, Arcadelt, Striggio, de Rore, Certon, Ruffo, de Wert, Guerrero and others, and several volumes of dance music and tablatures for keyboard, guitar and lute.⁵⁴ Three learned theoretical treatises were acquired by Raymund junior, Zarlino, *Institutioni Harmoniche*; Pietro Aron, *Compendiolo di dubbii et secretti circa del Canto fermo*; and Aristoxenus, *Aaramonicarum Elementorum Libri III*.

It is unusual to know the complete contents of a household music library, and more so one which was collected along with instruments on which to play it (not that this excludes vocal performance). Volumes such as the *Odhecaton* and Walter’s Lutheran hymns take on special meaning in this context, as do several manuscripts of textless *bicinia* copied from mass movements by Josquin and others, which were presumably for instrumental performance in the household.⁵⁵

The Fugger instrument collection is the largest documented one from the sixteenth century, according to Douglas Alton Smith.⁵⁶ Strings include a number of lutes of different sizes, bowed strings both large and small made in Germany and Italy, probably both violin and viol types (*grosses und kleines Geigen*), and keyboard instruments. Among the winds, the *bas* instruments far outnumber the *haut*, which is not unusual in a collection of instruments intended primarily for amateur music-making. The wind inventory includes 71 recorders (*fletten*), in sets of 27, 10, 9, five and seven; 79 cornetts, of which 14 are mute; 11 bassoons (*fagotti*); nine shawms; eight crumhorns; two *doltzana*; and 40 transverse flutes (*zwerchpfeiffe*) made variously of ebony, ivory or olive wood. Most of the flutes are grouped together in

⁵⁴ See complete listing in Schaal, ‘Die Musikbibliothek’, 126-37.

⁵⁵ Published examples of mass duos arranged for instruments are: Georg Rhau, *Bicinia* (Wittenberg, 1545); Friderich Lindner, *Bicinia sacra* (Nuremberg, 1591); Francesco Spinacino, *Intabulatura de Lauto* (Venice, 1507); for other sources of sacred duos for instruments, see www.bicinium.info/pagine/biblio.

⁵⁶ Douglas Alton Smith, ‘The Musical Instrument Inventory of Raymund Fugger’, *GSI*, 33 (1980), 36.

'cases', or consorts of between four and eight instruments. The list of flutes is translated by Alton Smith as follows:⁵⁷

Eight *zwerchpfeiffe* in their case
 Two *zwerchpfeiffe* of ivory, in their case
 One case of eight *zwerchpfeiffe* of olive wood
 One case of five *zwerchpfeiffe* of ebony wood
 One case of four *zwerchpfeiffe* of black wood
 One case with five *zwerchpfeiffe* decorated with silver, formerly owned by a *veldt Pfeiffer*.
 One case with eight good *zwerchpfeiffe*.

The five flutes decorated with silver would have been splendid and expensive instruments, and indicate a pride of place for the original owner's flutes, listed above as a *veldt Pfeiffer*. He may have been a high ranking musician, perhaps a member of the city *Stadtpeiffer*. The circumstances of how the Fuggers acquired these flutes is not known.

The instrument collection was offered for sale to Duke Albrecht of Bavaria, but he did not purchase it, so it remained in the Fugger family. An inventory of 1580 shows that the collection was still mostly intact when it was moved to Heidelberg in that year, but in 1622 the music library and instruments were sent to the Vatican as a gift to Pope Gregory XV. They are no longer there, and the ultimate fate of the instruments and the music library is unknown.

⁵⁷ Douglas Alton Smith, 'The Musical Instrument Inventory of Raymund Fugger', 36-44. See also David Lasocki, 'A listing of inventories', 453-4, '1566: Augsburg, Raymund Fugger junior, banker', which lists all the flutes and recorders in the inventory.

Table 3.2.1. Arnt von Aich, *Hubscher lieder*, Cologne, ca. 1519-1520: clefs, ranges, *modus*, and transpositions for flutes.

Title	Clefs and ranges				<i>Modus</i>	Transposition
Ach weiplich art	C1 d'-f''	C3 f-a'	C4 f-g'	F3 B _b -d'	mollis	at pitch
Ach was will doch	C1 b _b -d''	C3 d-a'	C4 c-f'	F4 F-a	mollis	up a 5 th
Apollo aller kunst	C1 c'-f''	C3 d-g'	C3 c-f'	F3 A-d'	mollis	--
An dich kan ich	C1 d'-d''	C3 f-a'	C4 d-f'	F4 F-b _b	mollis	up a 5 th
Auff erdt lebt nie	C1 b _b -d''	C3 e-a'	C3 e-f'	F4 F-a	mollis	up a 5 th
Ach Jupiter	C1 b _b -d''	C4 f-f'	C3 e-a'	F4 F-c'	mollis	--
Ach hilf mych leidt	C2 b _b -c''	C4 c-f'	C4 c-f'	F4 F-a	mollis	up a 5 th
Ach scheiden thut	C1 d'-f''	C3 f-a'	C4 g-f'	F4 G-a	mollis	at pitch
Auss herzen grundt	C1 d'-e''	C3 f-a'	C4 g-f'	F3 G-c'	durus	at pitch
Ach höchster hort	C1 b _b -c''	C3 e-g'	C4 c-d'	F4 F-g	mollis	up a 5 th
Ach gutter gsell	C1 c'-d''	C3 f-g'	C4 d-d'	F4 A-a	durus	at pitch
Cupido	C1 e'-e''	C3 g-a'	C4 g-e'	F3 A-c'	durus	at pitch
Das ich mein herz	C1 b-d''	C3 e-a'	C4 d-e'	F4 G-a	durus	at pitch
Das kalb	C1 c'-c''	C4 g-f'	C4 d-e'	F4 F-a	durus	up a 4 th
Der liebe strick	C1 c'-d''	C3 f-a'	C3 g-g'	F4 F-b _b	mollis	up a 5 th
Die lieb zwingt ich			C3 d-a'		durus	?
Die mych erfreit	C1 d'-d''	C3 f-a'	C3 f-g'	F4 F-b _b	mollis	up a 5 th
Der unfal reit mich	C1 c'-d''	C3 f-g'	C4 d-f'	F4 G-b _b	mollis	at pitch
Der welt lauff	C2 g-c''	C4 B _b -g'	C4 c-d'	F4 F-a	mollis	up a 5 th
Ey freuntlichs herz	C1 d'-f''	C3 f-a'	C3 f-g'	F3 B _b -d'	mollis	at pitch
Ein meidlein thet	C1 c'-d''	C3 e'-f'	C3 f-f'	F4 F-a	mollis	up a 5 th
Eyn pawer gab	C1 c'-c''	C3 g-a'	C3 f-f'	F4 F-b _b	mollis	up a 5 th
Eyn weiblich pildt	C1 c'-d''	C3 e-g'	C4 f-f'	F4 F-g	mollis	up a 5 th
Eyn rolic wesen	C1 c'-d''	C2 a-a'	C4 c-f'	F4 F-a	mollis	up a 5 th
Eyn blümlein feyn	C1 c'-d''	C3 f-g'	C3 f-f'	F4 F-g	mollis	up a 5 th
Eynigs eyen	C1 b-c''	C3 c-g'	C4 c-e'	F4 F-b _b	durus	up a 4 th
Eym jeden gselt	C1 b-d''	C3 e-g'	C4 c-e'	F4 G-a	durus	up a 4 th
Es lebt myn hertz	C1 c'-e''	C3 g-g'	C4 e-g'	F4 F-a	durus	up a 4 th
Entrust mein gmut	C1 a-c''	C3 d-g'	C4 c-f'	F4 D-a	mollis	up a 5 th
Fyl hynderlist	C1 c'-e''	C3 f-a'	C3 g-g'	C4 c-c'	durus	at pitch
Freuntlich und mildt	C1 c'-d''	C3 e-g'	C4 d-f'	F4 G-a	durus	at pitch

Title	Clefs and ranges				<i>Modus</i>	Transposition
Frydt gyb myr her	C1 b-d''	C2 a-a'	C4 c-e'	F4 G-a	durus	at pitch
Fernt was meyn	C1 c'-f''	C3 f-a'	C3 f-g'	F4 G-b,	mollis	at pitch
Fors seulement	C1 a-f''	C1 b-f''	C1 c'-d''	C4 d-f'	durus	at pitch (irregular)
Freuntliches pildt	C1 c'-d''	C3 c-e'	C4 c-e'	F4 G-a	durus	up a 4 th
Het ich vill gelt	C1 d'-b,'	C4 d-d'	C3 f-f'	F4 G-g	mollis	at pitch
In ewig zeyt	C1 c'-d''	C3 f-a'	C3 f-g'	F3 B, ^b -d'	mollis	at pitch
Ich het wol syn	C1 c'-c''	C3 g-a'	C4 f-f'	F4 F-a	mollis	up a 5 th
Jetzt scheiden	C1 c'-c''	C3 g-g'	C4 e-e'	F4 F-a	durus	up a 4 th
Ich klag und rew	C1 c'-d''	C3 e-g'	C3 e-f'	F4 G-a	durus	at pitch
Ich denck mir	G2 d'-g''	C3 g-a'	C3 g-a'	C4 B-e'	durus	at pitch
Ich schel mein horn	C1 e'-d''	C3 f-a'	C3 f-g'	F3 B, ^b -c'	mollis	at pitch
Ich scheyd von hyn	C1 d'-d''	C3 f-a'	C4 f-f'	F3 A-c'	mollis	at pitch
Ich wyll mit flyss	C1 c'-d''	C3 d-a'	C4 e-f'	F4 G-a	durus	at pitch
Ich rew und klag	C1 d'-d''	C3 f-a'	C3 f-g'	F4 G-b,	mollis	at pitch
Ich traw keym alten	C1 c'-a'	C4 f-f'	C4 d-d'	F4 G-a	durus	at pitch
Ich schrey und ruff	C1 d'-e''	C3 g-a'	C3 g-g'	F3 c-d'	durus	at pitch
Ich het geplantzst	C2 a-c''	C3 e-g'	C4 c-e'	F4 F-g	durus	up a 4 th
Ich stel leicht ab	C1 c'-d''	C3 f-a'	C3 f-g'	F3 B, ^b -c'	mollis	at pitch
Myt Got so wöl	C1 c'-d''	C3 f-a'	C4 d-e'	F3 A-b	mollis	at pitch
Myn herzigs a	C1 c'-d''	C3 f-a'	C3 g-f'	F4 G-c'	durus	at pitch
Mein.M. ich hab	C1 d'-d''	C3 g-a'	C4 e-f'	F4 G-a	durus	at pitch
Mag ich hertzliche	C1 b, ^b -d''	C3 e-g'	C4 c-f'	F4 F-g	mollis	up a 5 th
Meyn lieb und trew	C1 g-e''	C3 e-g'	C3 d-e'	F4 G-a	durus	at pitch
Myt leid und schmertz	C1 b, ^b -c''	C3 d-f'	F3 c-d'	F4 F-g	mollis	up a 5 th
Mars yeht von art	C1 c'-d''	C3 f-g'	C3 f-f'	F4 F-a	mollis	up a 5 th
Meyn höchste frucht	C1 d'-d''	C3 f-b,'	C3 f-g'	F4 F-b,	mollis	--
Meyn eynigs a	C1 c'-d''	C4 c-g'	C4 d-f'	F4 F-a	mollis	up a 5 th
Myt angst und not	C1 c'-d''	C3 f-a'	C4 c-e'	F3 A-c'	durus	up a 4 th
Nach lust	C1 e'-d''	C3 f-g'	C3 f-g'	F4 F-b,	durus	up a 4 th
Nach allem wunsch	C1 d'-d''	C3 f-g'	C4 f-f'	F4 G-b,	mollis	at pitch
Nie noch nymer	C1 f'-c''	C3 a-g'	C4 g-f'	F4 G-a	durus	at pitch
Nu schau myn glück	C1 c'-c''	C3 f-g'	C3 f-f'	F4 E-c'	mollis	up a 5 th

Title	Clefs and ranges				<i>Modus</i>	Transposition
O Jesu christ	C1 c'-d''	C3 g-a'	C4 d-f'	F4 G-a'	durus	at pitch
O werder mundt	C2 b-a'	C3 d-f'	C4 d-f'	F4 F-a	durus	up a 4 th
Rosyna	C1 c'-e''	C3 e-e'	C4 c-e'	F4 G-a	durus	up a 4 th
Sye ist meyn bul, p12	C3 g-g'	C3 g-g'	C4 d-d'	F4 G-a	mollis	at pitch
Sye ist die schön	C1 c'-f''	C3 d-a'	C3 f-f'	F4 F-a	mollis	--
Spotliche wort	C2 c'-c''	C3 c-f'	C4 d-d'	F4 F-a	durus	up a 4 th
Ursprung der lieb	G2 e'-f''	C3 e-a'	C3 f-g'	F4 F-c'	mollis	--
Wolum geluck	C1 c'-d''	C3 f-a'	C4 f-f'	F4 F-b _b	mollis	up a 5 th
Wer sich der bulschafft	C2 b-a'	C4 c-e'	C4 c-d'	F4 F-a	durus	up a 4 th
Wer gnad durch claff	C1 c'-d''	C3 f-f'	C4 d-d'	F4 G-a	durus	at pitch
Was ich durch gluck	C1 b _b -d''	C4 d-f'	C4 d-f'	F4 G-a	mollis	at pitch
Warumb hat mych	C1 c'-c''	C3 g-g'	C4 d-e'	F4 G-a	durus	at pitch
Wie du nun wilt	C1 c'-d''	C3 d-g'	C4 d-e'	F4 G-a	durus	at pitch

Chapter 3.3

The Consort Era in France

Introduction: A Tale of Two Cities

Although a large repertoire of music by French Renaissance composers survives, reconstructing a history of French Renaissance music-making ‘depends upon a documentary record that is surprisingly sparse’.¹ Archival records and musical accounts concerning French musicians, instrument makers and musical events are woefully incomplete, probably due to the ravages of the French Revolution. Even some well-known composers left behind almost no record of their lives. The French musicologist François Lesure was one of the first to collect and analyse the available archival information on musical life in France during the sixteenth century.² His work has been updated by Jane Bowers, Frank Dobbins, Jeanice Brooks, and most recently, by Lesure’s pupil Christelle Cazaux – I have made frequent reference to the fruits of their research in this chapter. The two places for which records about music exist in most detail are the royal court in Paris and the city of Lyons. The archival materials for those two cities, along with a few provincial references, offer enough to piece together a jig-saw picture – if an incomplete one – of flute players and makers, their music, instruction books and musical activities in sixteenth-century France.

Paris: Flutes at the Royal Court

Musicologists have long been aware that ‘the royal court was something its members did, rather than a geographical location to which they went’ – the French expression for this, *faire la cour*, summed up this attitude, in which ‘the court depended less on the palaces that housed it than on the practices and attitudes that defined its difference from the rest of French society’.³ The French court was itinerant, as most courts in the sixteenth century were, and

¹ As pointed out by Richard Freedman, ‘Music at François I’s Court’, review of Christelle Cazaux, *La Musique à la cour de François I* (Paris, 2002), in *EM*, 14 (2003), 615.

² Amongst the most useful for my research were: F. Lesure, ‘La communauté des joueurs d’instruments au XVIe siècle’, *Revue historique de droit français et étranger* (1953), 79-109; ‘La facture instrumentale à Paris au XVIe siècle’, *GSJ*, 7 (1954), 11-52; ‘Les orchestres populaires à Paris vers la fin du XVIe siècle’, *RdM*, 36 (1954), 39.

³ Quoted from Jeanice Brooks, *Courtly Song in Late Sixteenth-Century France* (Chicago, ILL, 2000), 1. For a discussion of similar practices and attitudes at the English court, and how this related to English musicians, see Peter Holman, *Four and Twenty Fiddlers* (Oxford, 2002), 33-7.

the musicians employed at court were also, moving with the King and his court between Paris and their various chateaux of the Loire.

There were three musical divisions in the royal household: the *écurie*, made up of loud, or *haut*, instruments who played for military and ceremonial occasions; the *chambre*, mainly the soft, or *bas* instruments plus singers, who provided music for the royal domestic household; and the *chapelle*, singers and instruments performing sacred music.⁴ Different players were recorded in each of the three divisions – although several players are recorded doing ‘double duty’. Some musicians remained in their posts for twenty years or more.

Flute players at the French court were – unusually – both *haut*, performing outdoors with drums, and *bas*, performing with other soft instruments in chamber music, and were therefore employed in all three groups.⁵ In the early years of the sixteenth century, flutes of the *écurie* were invariably members of the *fiffres et tabourins Suisse* (these players and their duties in the *écurie* during the reigns of Louis XII and François are discussed in Ch. 2.3). The duties and players of the chapel and chamber flautists will be considered in this chapter.

The Flutes in the *Chapelle de Musique*

The *chapelle* was divided into two groups: a choir (who numbered more than 30 in some years) who mainly sang plainchant for the Catholic service; and the *chapelle de musique*, which was a small group of specially chosen singers and instrumentalists (including transverse flutes and cornetts) who performed polyphonic music. The composition of the *chapelle de musique* was relatively stable, and remained virtually unchanged into the early years of the seventeenth century.⁶

Flutes were associated with sacred music in France as early as 1520, when they participated in a Mass at the *Drap d’Or* in Guisnes (see Ch. 2.3). Records are incomplete for the years between 1520 and 1589, but two flute and cornett players were listed by name on the chapel music payroll between 1578-89:⁷ Nicolas Delinet, *flustes qui serviront en ladite Chapelle*, and Jacques Le Vacher, *flute et cornet, en ladite Chapelle*. Further documents list

⁴ See Henri Prunières, ‘La musique de chambre et de l’*écurie* sous le règne de François Ier’, *L’année musicale* I (1911), 215-51, for discussion of the size and make-up of François’s *Musique de la chambre* and *l’Ecurie*. For the structure and organization of chapel musicians, see John Brobeck, ‘Musical Patronage in the Royal Chapel of France under Francis I’, *JAMS*, 48 (1995), 190-21.

⁵ This flexibility was documented as early as the late fourteenth century (see Ch. 1.2). Jeanice Brooks, *Courtly Song*, and Christelle Cazaux, *La Musique à la cour de François I* (Paris, 2002), document the presence of flutes in the French chamber music, *Ecurie* and chapel payroll records.

⁶ Michel Le Moël, ‘La chapelle de musique sous Henry IV et Louis XIII’, *RMFC*, 6 (1966), 5-26.

⁷ Jeanice Brooks, *Courtly Song*, Appendix 2, ‘Chamber and Chapel musicians in the Royal Records, 1559-89’, 453-536.

them among the *dessus mués* (soprano singers, including both adult males and boys) – presumably they were doubling the superius parts in polyphony.⁸ Both men worked in other musical capacities as well. Delinet is listed as *jouer de sacqueboutte, haultbois, viole, cornet, cornet dessus* in the *écurie* between 1571-84 and played flute and cornett in the chamber in 1569. Le Vacher was a singer and flautist in the chamber music between 1572-84 (see Table 3.3.1 below).

Flutes maintained a presence in the *chapelle de musique* well into the seventeenth century, when the theorist and priest Marin Mersenne, writing in 1636, described the pitch of *flutes allemandes* as being at *ton de chapelle*, to enable them to perform *en concert* with the chapel choir and organ.⁹

The Flutes in the *Musique de Chambre*

In 1516 François I created a division of *fiffres et tabourins* within the *Musique de la Chambre*. Flutes and drums seem an odd thing to include in the chamber music, which was a select group of singers, lutenists, virtuoso Italian cornet players, harpsichordists, organists and viol players who functioned for the private activities of the court.¹⁰ Just why there were two separate divisions of flutes and drums (the earlier one in the *Ecurie* is documented in Ch. 2.3) probably had to do with the system at court of public and private structures; the employees in each were kept quite separate, and only the members of the chamber music would have had access to the most intimate activities of the court, to accompany dancing and banquets, or simply to play for the king's private entertainment and solace.¹¹

The court records show that the terms *fiffre* and *fleuste* were used interchangeably in the both the *Ecurie* and chamber ensembles. Listed amongst the chamber music players in 1534 were *fiffres et tabourins* Hans Challer, Nicolas Hoster, Jacques Collet and Evrard Huguenault.¹² Further entries for Collet and Challer in the chamber (July, 1534) list them as

⁸ Brooks, *Courtly Song*, 400.

⁹ Marin Mersenne, *Harmonie universelle* (Paris, 1636), facs. François Lesure (Paris, 1963), 240-44. Bruce Haynes, *The Story of A* (Lanham, MD, 2002), 97-8, documents the pitch associated with 'ton de chapelle' as being at least a major second below a = 440.

¹⁰ This distinction of private and public court appointments applied at most large European courts. Service in the private areas was a privileged position. A clear description of the make-up and inner workings of Italian courts in the early sixteenth century is in Sergio Bertelli, *Italian Renaissance Courts* (London, 1986), 24-34.

¹¹ Jane Bowers, "'Flaute traverseinne'", 17; Henri Prunieres, 'La musique de chambre et de l'écurie sous le règne de François Ier', *L'année musicale* I (1911), 219 and 235.

¹² C. Cazaux, *La musique a la cour de François I*, 11.

‘jouers de fleustes et tabourins du roi’.¹³ Charles d’Orleans employed Nicolas Perinet (this could be ‘Delinet’?) as a ‘jouer de fleuste’ in his household, but record of his employment is only known for the years 1540-41.¹⁴ The household accounts of François I’s children name a single ‘jouer de fleustes, Bastien Flecher’, in 1516, 1517, 1524 and 1529; he is joined in 1534 by ‘Philippe Lanolle, tabourin’.¹⁵ Nothing is known about how they functioned in these households, but according to Cazaux, the household flutes and drums played for ‘solemn corteges, festivals and dancing’ at private functions and more intimate gatherings, just as they did at court.

The Musique de la Chambre continued during the reigns of Henri II (1547-59), François II (1559-60), Charles IX (1560-74), and Henri III (1574-89). The extant (but patchy) payroll records for these years show that although the organization of the chamber music remained the same – singers, players of keyboard, viol, lute and flute augmented at various times by players of rebec, cornet and violin – the numbers fluctuated rather dramatically. Between nineteen and forty musicians are recorded working during the reigns of Charles IX and Henri III; in 1584 Henri III officially and permanently reduced the number of musicians to twenty.¹⁶

Table 3.3.1 lists the flute players on the chamber music payroll between 1559 and 1584. Four flute players were listed for 1559, 1560, 1567 and 1569: David Jehan, Oudin Regnault, Thomas Davenecourt, and Nicolas Delinet. Presumably they formed a four-part consort. No flute players are listed between 1569 and 1572; from 1572 only two flute players, Oudin Regnault and Jacques Le Vacher, were listed. This is an important development, and may be an indication that flute consorts no longer occupied an official place in the court chamber music after about 1569.

Table 3.3.1. Payroll list of French court chamber music flute players, 1559-84¹⁷

1559, 7 June 1560, and 1567, treasury accounts: David, Jehan, *Jouer de la fluste de la chambre*.

1559-1574: Regnault, Oudin, *fluste de la chambre*.

23 January, 1560: Davenecourt, Thomas, *jouer de fluste de la chambre and en la chambre du roy*.

¹³ C. Cazaux, *La musique a la cour de François I*, 130.

¹⁴ C. Cazaux, *La musique a la cour de François I*, 334-5.

¹⁵ C. Cazaux, *La musique a la cour de François I*, 336-7.

¹⁶ Jeanice Brooks, *Courtly Song*, 79.

¹⁷ Extracted from the royal records of chamber and chapel musicians listed in Jeanice Brooks, *Courtly Song*, Appendix 2, 453-536.

1569, treasury accounts: Delinet Nicolas, *jouer de fluste et de cornet de la chambre*.

1572-84: Le Vacher, Jacques, *flute et chanter de la chambre*.

Brooks points out that there were records of two different musicians named ‘Nicolas Delinet’, probably father and son, but that it is not possible to identify from payroll records which was which.¹⁸ It has been conjectured that it may be Nicolas Delinet *père* who is portrayed in *Portrait d'un flûtiste borgne* (portrait of a one-eyed flautist) which was painted in 1566 (Ill. 3.3.1) – around the same time as the above records show ‘Delinet’ prominently on the payroll as a flautist in all three music establishments: stable, chapel and chamber.¹⁹ He is distinctively dressed in court attire, and holds a handsome flute which appears to be a bass, identifiable as such by its length and because it is made in two pieces (tenors never were), with a brass ring at the joint.



Ill. 3.3.1. Marc Duval? (school of Clouet), *Portrait d'un flûtiste borgne*, 1566.

¹⁸ Jeanice Brooks, *Courtly Song*, 413-4.

¹⁹ Jeanice Brooks, pers. comm., April 23, 2007; she has based her conjecture on her research regarding Delinet's prominent position in court music circles around the time of the painting.

Flutes Outside the Paris Court

Some specific references to flute players and makers outside the Paris court indicate that the flute was popular in the city as well, where it was ‘a chamber instrument played as much by the middle class and aristocracy as by the professional musician’.²⁰ One of the earliest indications of the flute’s popularity was the publication by the Parisian publishing firm of Pierre Attaignant of two collections of chansons arranged for flute consort in 1533 (discussed later in this chapter). Flute makers were also on hand to provide instruments. Mathurin de La Noue was active as a maker of woodwinds in Lyons and Paris. In May, 1542, a contract he made with an apprentice listed him as living in Lyons; in September, 1542, he was living in Paris, where he signed a contract with the Parisian merchant Guillaume Haultement to make a set, or consort, of transverse flutes (‘un jeu de flustes d’allemant’); an inventory of Mathurin’s instruments, made in August, 1544, after his death, listed three transverse flutes, two of which were ‘coupées’, or divided (probably therefore basses), amongst his *fleustes de bouys*, *fleustes à neuf trous*, *hautboys*, *musettes*, *chalumeaux*.²¹ One other Parisian flute maker mentioned by Lesure was Philippe de la Canessière, *facteur*, in 1551. Lesure also identified a number of players (*joueur d’instruments*) who owned transverse flutes, from inventories made after their deaths: Etienne Loré (1553), Nicolas Robillard (1557), Guillaume Masnet (1570) who owned a flute made by ‘Rafy’, Nicolas Breton (1575), and Sulpice Bellamy (1581).²² Nothing more is known of their activities.

Makers, Players and Flute Consorts in France’s ‘Second City’: Lyons

Thanks to the monumental work of Frank Dobbins, information has been made available about music in France’s ‘second city’, Lyons.²³ The archival references to flute players, makers and events with flutes are particularly valuable, because these are some of the only records which document the presence and activities of flautists outside Paris. It is therefore of interest to present a short cultural over-view of Lyons and of the activities of flautists there, as a kind of ‘template’ which must serve, in the absence of documentation from other cities, to describe the cultural life which may have prevailed amongst the élite French population.

²⁰ Jane Bowers, ‘The French Flute School’, Ph. D. diss. (University of California, Berkeley, 1971), 4.

²¹ Minutier Central, 8: 474, 54: 213, references are from François Lesure, ‘La Facture Instrumentale à Paris’, 20-22.

²² François Lesure, ‘La Facture Instrumentale à Paris’, 22-35.

²³ Frank Dobbins, *Music in Renaissance Lyons* (Oxford, 1992). The city archival records, transcribed by Dobbins as Appendix I (musicians) and Appendix IV (makers and dealers) document over two hundred musicians, makers and dealers working there between 1499 and 1548. All names and dates of players recorded here are from original archival material transcribed by Dobbins.

Lyons was the second most important city in France. The official ‘second residence’ for the royal household was established there by Louis XII in 1499 and by the early sixteenth century Lyons was a cultural and trade centre. Its location in central-eastern France, at the confluence of the Rhône and Saône rivers, meant that it was well-situated for commercial and strategic development. Trade fairs were established, in particular a thriving silk trade with Italy, and there was an annual book fair which drew merchants and buyers from all over Europe, making Lyons ‘the economic counting house of France’ during the first quarter of the sixteenth century.²⁴

From 1470 to 1520 the population of Lyons rose from around 20,000 to over 60,000 – more than half of this increase was accounted for by immigration, and over 20 percent of these foreigners were from Germany, Switzerland, Italy, and Poland.²⁵ The city was a cultural melting pot full of aristocrats, bureaucrats, bankers and merchants, along with a large population of musicians, writers, artists and religious philosophers. The successful trade workshops of musical instrument makers, dealers and publishers attest to a thriving musical culture.

Musicians and Instrument Makers

Sixteenth-century tax records recorded by Dobbins list over 100 instrumentalists, including 27 organists, twelve lutenists, eleven violinists, 25 trumpeters, seven flautists, 30 drummers, eight shawm players, and six rebec players. Many of these Lyonnaise musicians did not live by music alone. Then – as now – musicians held an interesting array of ‘day jobs’ to supplement their incomes. City records document some musicians as ‘manufacturers’ of unspecified goods, traders at fairs, sellers of confections, pastry cooks, painters, millers, vinegar makers, carpenters, pin makers and crossbow stringers.²⁶ The town was also a centre for the manufacture and sale of musical instruments, with 45 instrument makers or dealers. This is a high number in proportion to the population and suggests a wider market than the city itself.²⁷

Of the seven flute players (*joueur de fluste*) recorded in Lyons tax records between 1499-1553, five were also makers of flutes (*fleusteur*) (these terms were used interchangeably

²⁴ Fernand Braudel, *Civilization and Capitalism in the 15th-18th Century*, 1, *The Structures of Everyday Life* (Paris, 1979, trans. Siân Reynolds, London, 1985), 140.

²⁵ Harry Miskimin, *The Economy of Later Renaissance Europe, 1460-1600* (Cambridge, 1977), 112.

²⁶ Dobbins, *Lyons*, 125.

²⁷ For a comparison of the population of Lyons to the rest of Europe, see the graph of the population of Europe in Harry Miskimin, *The Economy of Later Renaissance Europe, 1460-1600* (Cambridge, 1977), 21.

to refer to both flutes and recorders).²⁸ An explanation for such a large number of flute makers in the city may have been partly due to the presence of the garrisoned French troops in Lyons during the Italian campaigns (1494-1525).²⁹ At least some of the *fleusteurs* might have been employed making flutes for soldiers. The troops returned frequently to Lyons to rest and regroup, and it is logical to imagine that the Swiss flute playing soldiers amongst them would have fostered the need for a ready supply of instruments to replace ones reduced to splinters or lost on the battlefield.

Most of the flute makers are known only by name, so whether these were makers of transverse flutes, recorders, or both, is unclear. The earliest is Jacques Pillon, *joueur de fluste* in 1499. In 1503 Pillon is also listed as a *fleusteur*. ‘Ludovic’, *joueur de fluste* and *le fleusteur*, is listed in 1521, and Mathurin La Noue (also called ‘La Not’), both *fleusteur* and *joueur de fluste*, worked in Lyons between 1523-1542, after which he moved to Paris and set up his instrument-making workshop there.³⁰ Only two *joueur de fluste*, Fabre Toussaint (1530) and Pierre Fantin, *fiffre* (1548), were not listed as makers.

The most famous of the Lyons flute workshops, and the only one from which flutes and recorders survive, is the Rafi workshop, which was begun by Michaud Rafi about 1506 – whether to make flutes or recorders is not known. He was joined by his more famous son Claude in 1515, who made flutes and recorders until his death in 1553. One bass flute by Michaud and seven tenor and bass flutes by Claude survive (see Ch. 1.3 for full discussion of the Rafi workshop and instruments).

For Lyons to have been a center of flute-making, there must have been a readily available and easily transportable wood supply. Central France was not heavily forested. The nearest source of wood to Lyons was in the Jura area near the Swiss border, which was (and still is) one of the richest areas of boxwood in all Europe.³¹ In sixteenth century France, there

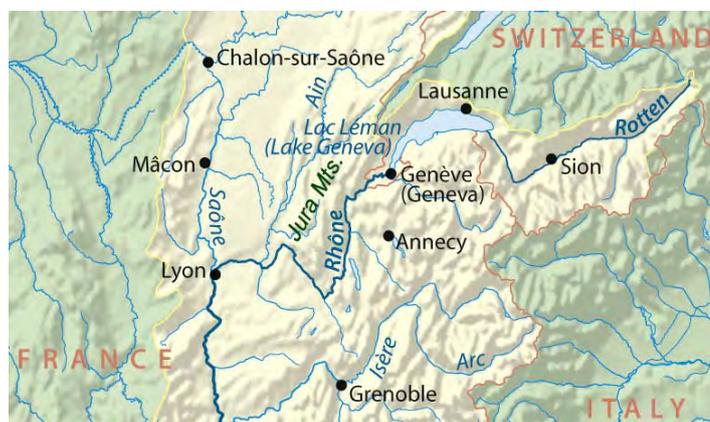
²⁸ Dobbins, *Lyons*, 123-128 and 291.

²⁹ See Amnon Linder, ‘An Unpublished ‘Pronosticatio’ on the Return of Charles VIII to Italy’, *Journal of the Warburg and Courtauld Institutes*, 47 (1984), 200-201; Linder points out that Charles first entered Lyons on 7 November, 1495, and stayed for more than seven months before mounting his ‘new’ Italian expedition on 22 June, 1496, and François I’s army was garrisoned there between 1522 and 1525.

³⁰ Lesure documents La Noue working in Paris in 1542; an inventory of instruments after his death was dated 1544; see also Dobbins, *Lyons*, 291, who records evidence from the Archive Nationales noting that La Noue died in Paris in 1542.

³¹ Rev. C.A. Johns, *The Forest Trees of England* (London, 1884), entry ‘Buxus’, notes that the French town of St. Claude in the Jura region of the Swiss Alps, and one of the largest natural box woods in Europe, is almost entirely inhabited by turners of wood objects; this reference is cited by Stuart King, ‘Made in France: Two Woodturning Towns in the South of France’, *Woodturning*, 82 (1999), 59-61, who also names the nearby town of Lons-le-Saunier as having historic connections with woodturning.

were few roads; goods (and people) were often shipped by river.³² It seems logical to assume that boxwood, one of the most highly prized woods for making flutes, was shipped from the Jura mountains to Lyons on the Rhône, a navigable river at that time.³³ Further research needs to be done to determine the extent to which this was done, just where wood supplies were and how the wood reached makers' workshops. Figure 3.3.2 shows the course of the river.



III. 3.3.2. Map of the Rhône river, showing its course from Lake Geneva through the Jura mountains to Lyons.

Musical Events with Flutes

Contemporary chronicles recorded elaborate musical events which were arranged during the frequent visits of the French court to Lyons.³⁴ For example, King Louis XII and Anne de Bretagne brought sackbuts and shawms and royal chapel musicians Ghiselin and Josquin Desprez with them when they set up court in Lyons in 1499. Other musical events are recorded (but no flutes are mentioned) during visits of Philip the Fair in 1503 and 1506, Margaret of Austria in 1501 and 1504, and the new king, François I in 1515. In 1522 François I returned to Lyons with his court, where he was based, along with his garrisoned army, during the Marignano and Pavia campaigns. His release from Italian prison and return to Lyons was celebrated on 8 July 1530 with a Te Deum and procession at the cathedral.

³² See Fernand Braudel, *Civilization and Capitalism in the 15th-18th Century*, I, *The Structures of Everyday Life*, 421-425, for a discussion of water transport in Europe during the sixteenth century.

³³ Information on the navigability of the Rhône and other rivers in the sixteenth century can be found in Bart Ballaux and Bruno Blondë, 'Transport Prices in the Long Sixteenth Century: A Contribution to Pre-industrial Price History', *Urban Society in the Middle Ages* (Antwerp, 1999), 1-5, and in James A. Gore and Geoffrey E. Petts, eds., *Alternatives in Regulated River Management* (Boca Raton, Florida, 1989), 4-6.

³⁴ Chronicles are discussed in Frank Dobbins, *Lyons*, 202-206; the events discussed above are among the most important ones to document flutes being played.

Although flutes and drums are not mentioned, their association with similar Te Deum processions to celebrate victories after war is well documented.³⁵ A Latin eclogue of 1541 by the priest Philibert Girinet describes an evening of fireworks, during which both ‘loud’ instruments – trumpets, sackbuts and shawms – and ‘soft’ instruments, including flutes and lutes, performed a concert with singers.³⁶

Some of the most lavish musical events recorded in Lyons occurred in September and October 1548, during the visit of King Henri II and his new queen, Catherine de Medici. The city’s forces were augmented with trumpets, *fiffres et tabourins* from nearby cities. Four drummers, Andre Thevillon, Benois de Lachault, Claude Vial, Laurens Babotte, and two *fiffres*, Jehan Cousturier and Antoine Fournier, were summoned from Montbrison; each received two *ecus* for playing for the entry processions of the king and queen.³⁷

The festivities were documented by the poet Maurice Sceve in 1549, who commented on the use of flute consorts in the evening entertainments.³⁸ Sceve stated that all the music for the occasion was composed and the instruments directed by the organists of Notre Dame de Confort in Lyons.³⁹ An Italian play by Bibbiena, *La Calandria*, was performed with *intermedii* sung in Italian and accompanied by a large number of instruments. Piero Mannucci composed the music (now lost).⁴⁰ No doubt the choice of an Italian music director and composer to perform a play and music in the Italian style were in honour of Catherine de Medici’s Florentine tastes.

This entertainment brings to mind similar events which were recorded in Italy during the early sixteenth century, at the courts of the Este in Ferrara, the Gonzaga in Mantua, and the Medici in Florence. Lavish musical interludes performed during banquets in Ferrara and Mantua were described by Mesisbugo, the cook, in his 1529 cookbook; the music and poetry for the 1539 Florentine *Intermedii* are also fully documented.⁴¹

³⁵ See ‘Te Deum’, *GMO*.

³⁶ P. Gerinet, *Idyllion* (Basel, 1541), trans. C. Breghot du Lut (Lyons, 1838), 25; Frank Dobbins, ‘The Chanson at Lyons in the Sixteenth Century’ (Ph. D. Thesis (University of Oxford, 1972), 102-3.

³⁷ Lyons, Archives municipales, BB68, fol. 173v, rpt. Dobbins, *Lyons*, 109.

³⁸ See Dobbins, *Lyons*, 109-113; for Sceve’s description of events, see *La Magnifica et triumphale entrata* (Lyons, 1549, ed. G. Guigue, 1927).

³⁹ These organists were employed by the Florentine community for the chapel of Notre Dame; see Frank Dobbins, ‘Lyons’, *GMO*, who sheds more light on this reference by documenting the names of the organists who worked at Notre Dame de Confort.

⁴⁰ David Nutter ‘Intermedio’, *GMO*, gives full descriptions of this entertainment.

⁴¹ For the 1529 musical cookbook, see Howard Mayer Brown, ‘A Cook’s Tour of Ferrara in 1529’, *RIM* (1972), 216-241; for a description and modern edition of the music for the 1539 Florentine *Intermedii* see Andrew Minor and Brian Mitchell, eds., *A Renaissance Entertainment: Festivities for the Marriage of Cosimo I, Duke of Florence, in 1539* (Columbia, MO, 1968). The 1539 Florentine festivities may well have been a direct influence for the 1548 Lyons event.

In *La Calandria*, as in the 1539 Florentine *Intermedii*, the figures of Dawn and Night framed the action and Apollo sang stanzas in *ottava rima*, accompanying himself on a *lira da braccio*, to introduce the subject matter of each of the four *intermedi*: each tableau portrayed in turn the ages of iron, bronze, silver and gold. First, ‘Dawn’ appeared on a chariot drawn by two cocks, combing her long golden hair and singing ‘Io son nuntia del sol’, accompanied by two spinets and a consort of four *flauti d’Alamagna*.⁴² A song to the King, ‘Invitissimo Henrico’ was sung by four voices, then played by four viols and four *flauti d’Alamagna*. Night entered on a chariot, singing ‘Coei son’io’, accompanied by two spinets, four trombones and four *flauti d’Alamagna*.

The instrumentation described above is an interesting amalgamation of mixed instruments of winds and strings performing with full consorts of viols and transverse flutes. The number and variety of instruments exceeded that of the 1539 *intermedii*. Transverse flute consorts, identified as *flauti d’Alamagna* above, were prominently featured, combined with viols, trombones and voices.

The First French Flute Treatise

In 1556 the Lyons publisher Michel du Bois brought out one of the earliest French music instruction books, Philibert Jambe de Fer’s treatise, *Epitome Musical, des tons, sons et accordz, es voix humaines, fleustes d’Alleman, fleustes a neuf trous, violes et violons*.⁴³ Jambe de Fer (ca. 1515-66) was a Huguenot musician and composer whose vocal works, mostly Protestant psalms and a few motets, were published by Jacques Moderne and others in Lyons.

Jambe de Fer explained the rudiments of music – scales, clefs, notation, solmisation – in the first part, while the second describes playing techniques for different sizes of flutes, recorders, viols and for the violin. About the violin he said little: ‘il se trouve peu de personnes qui en use, si non ceux qui en vivent, par leur labour’ (‘few people play it, apart from those who earn their living by it’). From this it is clear that he thought instructions were not needed for an instrument played only by professionals. The viol, on the other hand, he described as an instrument ‘celles desquelles les gentils homes, marchands et autres gens de vertuz passent leur temps’ (with which gentlemen, merchants, and other persons of distinction pass their time’). He gave five pages of instructions for it. Presumably the flute and recorder were in the ‘virtuous’ category as well, since he devoted six pages to the flute and three to the

⁴² A similar ‘Dawn song’, ‘Vattene almo riposo’, was performed in the 1539 Florentine *Intermedii*. See Andrew Minor and Brian Mitchell, eds., *A Renaissance Entertainment*, 224.

⁴³ The only surviving copy, now in F: Pc, is listed and described in Howard Mayer Brown, *IMPBS*, 172; facs. François Lesure, *AM*, 6 (1958), 341-86; the treatise is also discussed in Philippe Allain-Dupré, *Rafi*, 28-34 and 73-81.

recorder. The treatise was thus chiefly aimed at an audience of amateur players of the viol, transverse flute and recorder.

The instructions for transverse flute, while not extensive, show that Jambe de Fer had more than a passing knowledge of flute playing. He offered valuable information concerning sizes, ranges, tunings, fingerings and playing techniques for both D tenor and G bass flutes. The soprano flute in A, described as the highest member of the consort by the German teacher Martin Agricola in his *MID* (1529 and 1545), is not mentioned by Jambe de Fer; in fact, he said that, unlike the recorder, which requires three sizes of instruments to form a consort, including a soprano to play the *dessus*, or highest part, in the flute consort the soprano, alto and tenor parts are all played on the D tenor flute:

La taille et la haute contre sont semblables en toutes choses, voyes un cornet, fleuste d'Alleman, fleute a neuf trous, violes, violins, et autres sortes d'instruments ...

Des fleutes à neuf trous à un ton en bas que la traverse, mais en haut, elle en à moins de trios ou quatre; car ses tons sont en nombre de quinze pour le plus, et la traverse en a bien dixneuf. En outré la partie du dessus ne se joue sus les tailles et hautcontre comme en l'autre, ains se joue a part, et descend ledit jusqu'en G sol re ut.

The tenor and the alto are one and the same thing, as for a cornet, German flute, recorder, viol, violin and other sorts of instruments ...

The recorder has one tone lower than the transverse flute, but in the high register, it has three or four less, these tones are fifteen for the most, and the transeverse flute has certainly nineteen. Another difference is that the soprano part is not played by the tenor/alto as on the transverse flute, instead one plays this part on a [small] flute which descends only to g'.⁴⁴

Jambe de Fer thus identified a French practice of playing polyphonic consorts in four parts on only two sizes of flutes, tenor in D and bass in G. His comments illuminate this as one of the main differences between German and French flute consorts. I have shown that Arnt von Aich's collection of German songs for flute consort requires the use of all three sizes of flutes; see Ch. 3.2.

The use of a tenor for the soprano part produces an altogether different tone quality and balance in the consort. The tenor produces a stronger and more colourful sound,

⁴⁴ Jambe de Fer, *EpM*, 51.

particularly in the third octave, and gives more prominence to the soprano part. This implies that the French preferred a strongly singing ‘solo’ line for the chanson repertoire while preserving the matching tones which three instruments of the same size can give, while the Germans preferred the slightly throatier and less blended colour of the little A flute.

According to Jambe de Fer, the tenor flute had a range of 19 notes:

La fleuste d’alleman contient en soy de 15. A 16. tons bien naturelz, et non par trop contrainctz ny forcez, mais au dessus jusqu’a dixneuf; ilz sont fort cruz, et rudes, pour la vehemence du vent qui y est necessaire, et pour ceste cause sont peu usitez, mesme les deux derniers qui sont, G sol re ut, et A la mi re, le quatriesme, l’experience vous en rendra plus certain.

The transverse flute has fifteen or sixteen notes which are good and natural and obtained without much strain or force, but reaches up to nineteen notes; they are very crude and rough because of the force of air required and for this reason the two highest notes, g''' and a''', are little used; experience will make you certain of this.⁴⁵

He gave the bass flute a range of only two octaves, or ‘fifteen good and natural notes [g-g'] which is more than ordinary music in this part is constrained to do’ (quinze tons bien justes et bien naturelz qu’est plus beaucoup que l’ordinaire de Musique en icelle partie quelque contrancte qu’elle puisse estre).⁴⁶ A two-octave fingering chart for the bass provides some unique fingerings as well as essential advice about breath and embouchure control – evidence of a degree of expertise not found in other instructions for flute (see Ch. 4.4, and a facsimile of the bass chart in App. 1).

The fingering chart for the tenor is unfortunately missing from the sole surviving copy. A small fragment of a tenor chart (reproduced in App. 1) may be part of the one missing from Jambe de Fer’s treatise; it contains the words *haute contre clef de G2* (alto with treble clef) and *Taille. Clef...* (tenor, clef [blank]).⁴⁷ The fragment indicates the presence of – but no actual fingering visible for – C#, a note not included in any other D tenor fingering chart.

⁴⁵ Jambe de Fer, *EpM*, 47-8.

⁴⁶ Jambe de Fer, *EpM*, 50.

⁴⁷ This fragment, now attached to the surviving copy in Paris, Bibl. Nationale is reproduced in Allain-Dupré, *Rafi*, 31 and 74. Herbert Myers, ‘The Idea of “Consort”’, 43 and fn. 49: p. 57-8, pointed out some inconsistencies in the wording and margins which throw doubt on the positive identification of this fragment, but acknowledged that it is a ‘conundrum’, since no other charts are known to have existed, and it is unlikely that the fragment is anything other than a portion of Jambe de Fer’s chart. Allain-Dupré did not make reference to these anomalies.

Philippe Allain-Dupré has suggested the obvious derivation of a C# fingering from the bass chart's F#: ○ ○ ○ ○ ○ ●.⁴⁸

Jambe de Fer acknowledged the difficulty of giving sufficient written explanations on the subject of the embouchure, nevertheless, he attempted to discuss it in more detail than Agricola. He emphasized putting the flute 'exactly in the middle of the lower lip', using a soft, moderate breath as the basis for good tone. Like Agricola, Jambe de Fer advised strengthening the air for ascending, lessening the air little by little in descending.

De l'emboucheure

Quand à l'emboucheure de cesdicte fleute d'Alleman, il est bien difficile d'en donner bonne et suffisante raison, toutes fois je vous en diray mon opinion en deux petitz motz, à celle fin que ne m'accusiez de paresse. Il faut donc prendre l'adresse, et l'ardiesse de mettre ladicte fleuste justement au milieu de la levre dessoubz, avec un vent doux, et moderé, l'augmétant en force, petit à petit pour monter, et pour descendre il la faut faindre de peu à peu selon l'assiete de la Musique sans crainte de faire la moue.

The embouchure

When speaking of the embouchure on the German flute, it is very difficult to give a good and sufficient discussion, all the same, I will tell you my opinion, briefly, so that you do not accuse me of laziness [incompleteness?]. It is necessary, then, to use dexterity and boldness, to put the flute exactly in the middle of the lower lip, with a soft and moderated breath, augmenting it in strength little by little for ascending, and for descending it is necessary to drop it little by little according to the position of the note, without fear of pouting.⁴⁹

He followed the embouchure instructions with unique instructions for ensuring good articulation:

En après je vous advert que ceux qui n'ont point de langue, ce jeu leur est dessendu comme le parler, car à toutes notes que prononcerez, il faut que la langue soit donducteresse, et pour ce donc vous, qui à ce jeu prenez plaisir, gardez voz langues de moysir c'est a dire beuves souvent.

⁴⁸ Allain-Dupré, *Rafi*, 76.

⁴⁹ Jambe de Fer, *EpM*, 51.

To follow, I advise you that one must play as one speaks, by pronouncing all the notes with the tongue, therefore it is necessary, if you take pleasure in playing, to guard your tongue from mould, that is to say, drink often.⁵⁰

Jambe de Fer describes ‘le jeu de b molle’ (playing with flats) as ‘le plus plaisant, facile & naturel’ (the most pleasant, easy and natural) for flute consorts, while ‘le jeu de # quarré’ (playing with naturals – literally, square notes) ‘n’est si usité, si plaisant ne si facile, toutesfois en un mesme endroict a raison qu’il n’est si usité, si plaisant’ (is not so useful, pleasant or easy and for this reason are not used so much’.⁵¹ The primary meaning of this statement is not literally to do with playing flats on the flute, which are in fact, not so ‘easy’ or ‘natural’ beyond Virgiliano’s scale with F and B \flat . E \flat requires half-shading the bottom (sixth) hole, a rather clumsy operation producing a note which is soft, lacks focus and is difficult to tune.

Jambe de Fer’s advice to avoid hard modes must also not be confused with playing sharps and naturals as melodic accidentals, which may occur in any mode through the addition of *musica ficta*.⁵² Jambe de Fer was careful and thorough in marking both sharps and flats in his fingering charts as *feinte du ♭* for flats, and *feinte du #* for sharps. Clearly he notated a complete chromatic scales, and clearly expected players to master all of it.

Jambe de Fer’s comments about playing with ‘flats’ and ‘sharps’ are to do with the fact that pieces in transposed modes – as indicated by having a flat in the key signature – are in a more comfortable range for flutes (although he makes no specific mention of transposition). The practice of transposing as a normal operation for flutes is borne out by Agricola’s recommendation that flute players must learn upward transpositions of a fourth and a fifth for transposing vocal music into suitable range. Attaignant’s choice of chansons for flutes also overwhelmingly favour transposed modes, that is, pieces with a B \flat in the key signature, especially G-Dorian (see Ch. 3.3 for a discussion of the chansons for flute consorts).

French Music for Flutes

In 1529 the Parisian publisher Pierre Attaignant was granted a royal *privilege* to print ‘tant en musique, jeux de Lutz, Orgues, et semblables instruments’ (a quantity of music books,

⁵⁰ Jambe de Fer, *EpM*, 51.

⁵¹ Jambe de Fer, *EpM*, 48-9.

⁵² Some basic theoretical concepts regarding modes, transposition and the application of *musica ficta* are fully explained in Ch. 4.2.

playable on lutes, organs and similar instruments).⁵³ Attaignant had settled in Paris around 1514 and began printing books in 1525. His first volume of music, *Chansons nouvelles en musique a quatre parties*, was published on 4 April 1528. He held a monopoly for music publishing in France; in all, he published over 150 volumes of sacred and secular music – over 1000 pieces were chansons – between 1528 and his death in 1552, and his widow continued to print music until about 1557.⁵⁴ He was in direct contact with poets and composers at the French court, which assured him of a steady source of music. His music prints were of high quality due to a new method he developed of single-impression printing for both staves and notes, ensuring him a successful business for many years.

Attaignant's *privilege* was renewed in 1531, with flutes added to the list of instruments:

messes, motetz, hymnes, chansons que desditz jeux de Lutz, Flustes et Orgues, en grans et petitiz volumes pour servir aux eglises, ministres et generalement a toutes personnes, et pour le tres grant bien utilite a soufaigement de la chose publique.

masses, motets, hymns, chansons for the said playing of lutes, flutes, and organs, in large volumes and small, in order to serve the churches, their ministers, and generally all people, and for the very great good, utility and recreation of the general public.⁵⁵

The early years of the sixteenth century saw a growth in the musical 'recreation of the general public' which stretched beyond the confines of courts and cathedrals.⁵⁶ Attaignant was responding to a public demand for music which could be played on instruments by offering vocal music – both sacred and secular – to be used as sources of instrumental music.

The 1531 *privilege* (see Ill. 3.3.3) is a measure of just how popular 'flutes' had become in France (remembering that the French word *fluste* embraced both the *flute a neuf trous*, or recorder, and the *flute allemande*, or transverse flute). To judge from the remarks made in 1554 by François de Scepeaux, Sieur de Vielleville and Marshal of France, transverse flutes were still popular in France nearly twenty-five years after Attaignant's *privilege*. De Scepeaux described an evening of chamber music at Metz in 1554, performed by a mixed

⁵³ See Daniel Hertz, *Pierre Attaignant, Royal Printer of Music* (Berkeley, 1969) for a complete study and bibliography of all the works printed by Attaignant.

⁵⁴ Daniel Hertz, *Pierre Attaignant*, 43-60; see also Daniel Hertz, 'Attaignant', *GMO*, 674.

⁵⁵ For the complete texts and translations of the royal privileges see Daniel Hertz, 'A New Attaignant Book and the Beginnings of French Music Printing', *JAMS*, 14 (1961), 22.

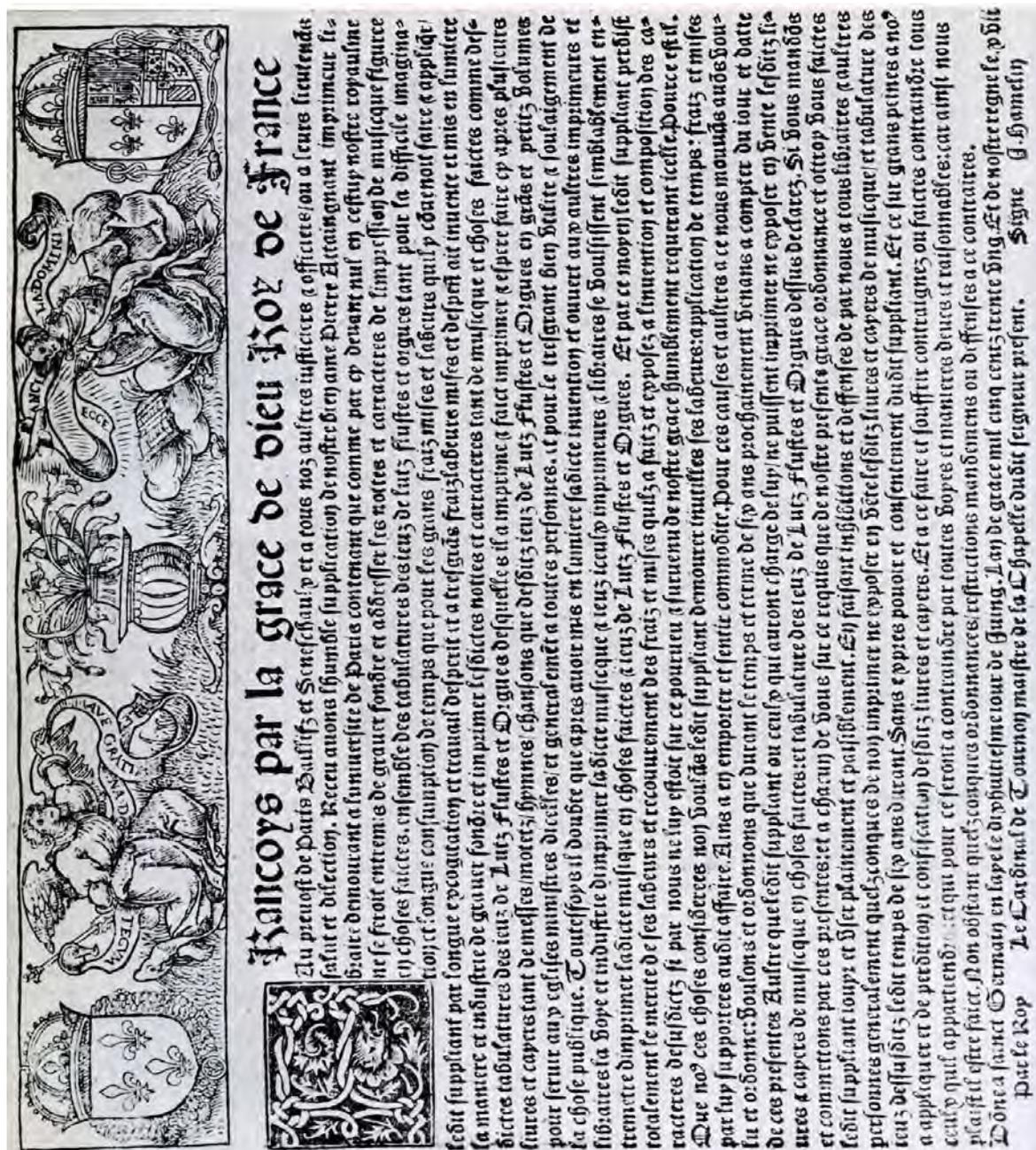
⁵⁶ See 'chanson', *GMO*.

ensemble of soprano and bass singers with spinet, lute, treble viol, and transverse flute; he went on to remark that the transverse flute is

quite wrongly called the German flute; for the French make better and more musical use of it than any other nation, and it is never played in four parts in Germany as it usually is in France.⁵⁷

If what he says is true, the German penchant for flute consort playing, so clearly documented in Germany during the first half of the sixteenth century, was a thing of the past by 1554. But it is difficult to imagine that practices differed very much between the two countries, and Metz is nearly at the German border. However, it is true that no German sources of instructions or music for flutes was printed after 1545, and in France, Jambe de Fer's instructions for flute, *EpM* (Lyons, 1556), was yet to published.

⁵⁷ See p. 115 of this thesis for the full original text from *Mémoires de la vie de François de Scépeaux* (Metz, 1554), ed. Michaud and Poujoulat (Paris, 1838) 204. Because of its geographical position, Metz was influenced by German culture, and was outwardly (but independently) part of the German empire until 1552, when it was officially transferred to France.



Ill. 3.3.3. Pierre Attaignant, *Privilege*, Paris, 1531.

If Attaignant enjoyed the music publishing monopoly in Paris, in Lyons, it was Jacques Moderne (1495-1562) who was the principal publisher of music during the sixteenth century. Moderne began as a book seller, and started printing books in 1529.⁵⁸ He adapted Attaignant's method of single-impression printing for music in 1532, printing altogether about fifty books of music by French, Italian, German and Spanish composers, including masses, motets, chansons, instrumental music, and treatises. One of his most popular publications was a book of dances and ricercares, *Musicque de joye*, issued around 1544,

⁵⁸ For more on Jacques Moderne and his publishing career, see Samuel Pogue, *Jacques Moderne: Lyons Music Printer of the Sixteenth Century* (Geneva, 1969).

‘appropriate not only for voices, but also to play on *espinetes, violins et fleustes*.⁵⁹ There is no further indication of instrumentation in the book; none of the music is texted, so singers would have needed to supply words from other sources (some of the dances were based on existing well-known vocal pieces) or to have sung the *ricercares*, which Moderne calls *phantasies instrumentales*, to solmization syllables, a not uncommon practice. A number of dance pieces fit a consort of transverse flutes, as do several of the *phantasies instrumentales* (5, 7, 9, 13, 16, 22).

Between 1551 and 1562, another Lyons publisher, Simon Gorlier, issued several books of music, which he called *tablatures*, for flute, keyboard, and plucked instruments. His volume of music for flutes, *Livre de tabulature de flutes d’allemand* (1558) is unfortunately lost.⁶⁰

There is scarcely any sixteenth-century vocal music that is not suitable for playing on instruments, and no hard and fast distinctions between instrumental and vocal music existed. Instrumentation was not often specified in sixteenth-century sources.⁶¹ Music title pages began to advertise broadly appealing and interchangeable instructions that music was appropriate to be played on all sorts of instruments as well as to be sung – *per ogni sorti di stromenti* in Italian collections, or *convenable tant aux instrumentz comme a la voix* in French ones.⁶² Most instrumental music had origins in vocal models; lute and keyboard intabulations provide prolific and clear examples of this, and a number of instrumental pieces have poetic titles which give away their vocal origins. A good example is found in the Italian publication by Giacomo Vincenti, *Canzon diversi per sonar con ogni sorte di stromenti 4-5-6 voci* (Venice, 1588), which contains thirteen instrumental canzoni with French titles, all but three

⁵⁹ *RISM* gives a date of *ca.* 1550; Samuel Pogue, ed. *Musicque de Joye* (Peer, 1991), 5, argues for 1544 based on printer’s marks.

⁶⁰ The flute volume [1558]₂ is listed in Howard Mayer Brown, *IMPBS*, 180. Brown cites Gorlier’s other publications, with complete title pages and list of contents, as 1551₁, 1552₅, [1560]₁, 1560₃, [1562]₇, [156?]₁, [156?]₂.

⁶¹ See Howard Mayer Brown, *IMPBS*, Index III: ‘Volumes described by performing medium’, 478-480, for a list of instrumental ensemble music printed in the sixteenth century for two to twelve instruments: seven are for viols, one for crumhorns, three for recorders, two for transverse flutes, two for trombones, two for violins, one for the English ‘mixed consort’. Brown does not mention Gombert’s collection of motets *a4*, book I (1539) in which winds and strings are mentioned on the title page; nor does he include Arnt von Aich *Hubscher lieder*, or Susato’s *Chansons*, book 6, which recommends in the preface, ‘excellent for viols’; Attaignant also published a set of chansons for viols, now lost.

⁶² For a general discussion of the growth of instrumental music in France, see Richard Freedman, ‘Paris and the French Court under François I’, *Man and Music: The Renaissance*, ed. Iain Fenlon (London, 1989), 184-193.

of which are literal transcriptions of French chansons by Thomas Crecquillon, Claudin de Sermisy, Adrian Willaert and others.⁶³

The Flute Chansons of Attaignant

In April 1533 Attaignant made good his promise to print flute music by publishing two collections of four-part chansons for both *fleuste d'Allemant* (transverse flute) and *fleuste a neuf trous* (recorder). These were published with the titles *Chansons musicales a quatre parties* and *Vingt et sept chansons musicales a quatre parties*. The title pages of both 1533 collections printed the name of each chanson, designating which pieces were suitable for *fleuste d'Allemant* by the letter 'a', those for *fleuste a neuf trous* with 'b' and those which could be played on both consorts with 'ab' (the title pages for each volume are reproduced below, Ill. 3.3.4 and 3.3.5).

Vingt et sept chansons musicales (hereafter in the discussion, I will call it VSC) survives complete. Only the superius part-book survives for *Chansons musicales* (hereafter, CM) although a number of chansons can be reconstructed from other sources. A later volume of duos with the title *Quarante et quatre chansons à deux, ou duo, chose delectable aux fleustes* was published in 1535. It was advertised in Conrad Gesner's *Pandectarum* (Zurich, 1548), but no copy survives.⁶⁴ Attaignant's three volumes of music for flutes were the first – and the only – prints of their kind in France.

VSC contains 28 (not 27) chansons by nine composers. CM is more varied, with 30 chansons by 18 composers (see Table 3.3.2; Attaignant provided only surnames, I have supplied Christian names where possible). The two 1533 publications together provide a total of 58 chansons, 26 for transverse flutes, 20 for both flutes and recorders, and six for recorders. Seven pieces have no designation for either consort. All the pieces were fully texted – presumably it was good business to enable performance by voices as well.

⁶³ Ed. F. Sumner, *Canzon diversi per sonar con ogni sorte di stromenti 4-5-6 voci* (New York, 1994); for a discussion of the French chanson as a model for instrumental canzonas, see F. Sumner, 'The Instrumental Canzona Prior to 1600', Ph. D. diss. (Rutgers University, 1973).

⁶⁴ Daniel Hertz, *Pierre Attaignant, Royal Printer of Music* (Berkeley, 1969), 67.

Chansons musicales a quatre parties
desquelles les plus conuenables a la fleuste dalemant
sont signees en la table cy dessoubz escripte par a. et a la fleuste
a neuf trous par b. et pour les deux fleustes sont signees
par a b. Imprimees a Paris en la rue de la Harpe deuant
le bout de la rue des Bathurins prez leglise saint Cosme
par Pierre Attaingnant. **Adense apriil. M. D. xxxiii.**

Aukre q vous	a vii	Je lay arme	a. iiii	Par trop ermer	a xiiii
Content dehr	ab xiii	Jay sã souuert	ab viii	Si par fortune	a v
Changer ne puy	ab xv	Le prin tẽps	a xi	Sur to ^r regre	a ix
De noy deux curus	b v	La plus goulaye	a xv	Si vng ocure	a xii
Dehr mesfeul	a vi	Deux peccete	iii	Souuẽt amour	a xvi
En espoir deuoit	a vii	Mille regre	ab xi	Si se ne dea	a xvi
Elongne sur	b xiii	De pass spart	ii	Hostre beaulte	ab ix
Fait; ou failly	ab xii	De desloyalle dame	b vi	Hous lairey	a a.
Does enuicuz	a viii	Der chel viso	ab i	Aure ac puy	ab xii
Permeray q meymera	a ii	Duis q lay perdu	b x	Deu le gricmal	a xiiii
				Nombre total	xxx

Superius.

Cum priuilegio ad sexennũ

Ⓞ a i

Ill. 3.3.4. Pierre Attaingnant, *Chansons musicales a quatre parties* (Paris, 1533), title page of superius part-book.⁶⁵

Cvingt et sept chansons musicales a qua-
tre parties desquelles les plus cõuenables a la fleuste dal-
lemant sont signees en la table cy dessoubz escripte par a.
et a la fleuste a neuf trous par b. et pour les deux par a b.
Imprimees a Paris en la rue de la Harpe deuant le bout
de la rue des Bathurins prez leglise saint Cosme par
Pierre Attaingnant. **Adense Apriil. m. D. xxxiii.**

Amour me poingt	ab v	Je ne puis pas	ab vi	Bien de bon cuer	a viii
Amours amours	a iiii	Pecces moy sur lherb.	a ix	Pour qy dõc ne frig.	a xiii
Allõs vng peu pl ^r auãt	ab v	Jamais vng cuer	ab x	Si bon amour	a xvi
Amour me voyant	ab ix	Benẽ diray mor	xiiii	Tous amoureux	ab vii
Allez souspirs	b xi	Je nauoy point	a xv	Troye ieunes bourg.	b x
De vous feruir	ab i	Les yeult bẽdes	ab iiii	La mirelidrogue	iii
Elle veult dõc	a xi	Mirelaridon	i	Uoyant souffrir	ab xii
Sentil marechal	iii	On dit quamour	ab xii	Vng petit coup	xv
hellas amour	ab viii	Parle qui veult	a ii		
Waynet amour	a xiii	Par vng marin	a b vii		

Superius.

Cum priuilegio ad sexennũ

Ⓞ r i

Ill. 3.3.5. Pierre Attaingnant, *Vingt et sept chansons musicales a quatre parties* (Paris, 1533), title page of superius part-book.⁶⁶

The flute chansons are varied in style. Many are in the so-called ‘Parisian’ style adopted in the 1530s and 1540s by Sermisy, Janequin and other musicians working at the

⁶⁵ The superius part-book survives only in a microfilm copy in D: Mbs. According to Anne Smith, ‘Die Renaissance Querflöte’, *BJbHM* 2 (1978), 52, a copy of the part-book was in the collection of Alfred Cortot but its present whereabouts are unknown. Howard Mayer Brown, *IMPBS*, 44, lists this as CH; Lcortot (S); he also cites a copy, now lost, of the superius part-book in D: WEs.

⁶⁶ Title-page reprinted from Dirk Snellings, ed., *Vingt et sept chansons musicales a quatre parties* (facsimile), Peer, 1986; all four original part-books are in D: Mbs, Mus. Pr. 31/5.

Paris court. Claudin de Sermisy, the most famous of the so-called ‘Parisian’ chanson composers of the 1520s and 1530s is represented by the highest number of pieces in Attaignant’s 1533 collections, with ten chansons. The Parisian chansons are lyrical and charming songs, where the words control the flow of the music, and the elegant soprano lines are accompanied with simplicity, occasionally animated with bits of imitation.⁶⁷ The simple lyricism belies a sophisticated symbiosis and expressiveness in the music and poetry together. These lyrical pieces are well-suited to the lightness and pathos which characterize the sound of a flute consort.

Other chansons (and a few Italian pieces) in Attaignant’s collections are from a slightly older generation of composers, such as Josquin Desprez (one chanson, but attributed to Le Maire), Sebastian Festa (one), Benedictus Appenzeller (two), Pierre de Manchicourt (two), and Josquin’s pupils Nicolas Gombert (four) and Jean Richafort (one). Their music features long and flowing melismatic lines and points of imitation. The works by Gombert are exceptional, setting poetry which is elevated and masterful, not slight and trifling, as are some of the chansons poems chosen by Sermisy and others. The texts of all the flute chansons are typically characterized by themes of love, both fulfilled and unrequited, and always maintain a refined decorum.

Table 3.3.2. Composers represented in the two 1533 chanson prints

<i>Vingt et sept chansons</i>	<i>Chansons musicales</i>
Claudin de Sermisy (7)	Claudin de Sermisy (3)
Guillaume le Heurteur (6)	Guillaume le Heurteur (2)
Pierre Passereau (5)	Pierre Passereau (0)
Pierre Vermont (le jeune) (3)	Pierre Vermont (le jeune) (0)
Jacotin (2)	Jacotin (1)
Anonymous (2)	Anonymous (3)
Pierre Manchicourt (1)	Pierre Manchicourt (1)
Didier (?) Lupi (1)	Didier (?) Lupi (3)
Nicolas Gombert (1)	Nicolas Gombert (3)
	Benedictus Appenzeller (2)
	Pierre Certon (2)
	Sebastian Festa (2)
	Jean Guyon (1)
	François Bourguignon (1)

⁶⁷ See Howard Mayer Brown, *Music in the Renaissance* (Englewood Cliffs, NJ, 1976), 212, for further discussion of the Parisian chanson of the 1530s.

Table 3.3.2. cont. Composers represented in the two 1533 chanson prints

<i>Vingt et sept chansons</i>	<i>Chansons musicales</i>
--	Jean Richafort (1)
	Le Maire (1)
	Adorno (1)
	Bridam (1)
	Clement Janequin (1)
	Jean Le Gendre (1)

The exactitude with which Attaignant labelled the chansons, as to which can be played on flutes, which on recorders, or both, raises the obvious question of why some pieces were singled out as being better for one consort or the other. In order to answer this question, aspects of ranges, modes, and musical character must be considered.

In Anne Smith's pioneering study (1978) of the instruction books and music for the Renaissance flute, she compiled an inventory of both Attaignant's volumes for flutes and recorders, with a table of clefs, modes and ranges for each piece, and she provided a list of concordances for the incomplete *CM*.⁶⁸ I have updated and expanded Smith's important material with new and/or corrected material which has come to light since 1978. Table 3.3.3 is a list of concordances, including dates, titles, *RISM* numbers and additional sources which have come to light since Smith's article was published. Tables 3.3.4, and 3.3.5 are updated lists of all the pieces in both collections, with clefs, modes, ranges and concordances.

Analysis and Discussion of the Chansons

To facilitate the following discussion, I have edited all the 'a' pieces from both *VSC* and *CM* in Appendix 2.⁶⁹ I have edited not only complete pieces and those which I could reconstruct from concordances, but also the surviving superius parts from the incomplete *CM*, to aid the

⁶⁸ Anne Smith, 'Die Renaissancequerflöte und ihre Music', 52-54 and 64-67; see also an annotated list of the contents of both collections in Howard Mayer Brown, *IMPBS*, 43-45; Daniel Heartz, *Attaignant*, 250-252, includes bibliographical information, titles and concordances for both Attaignant prints.

⁶⁹ Two 'a' pieces have been edited by Bernard Thomas, 'Two Chansons for Flutes', *Early Music Series* 20 (Oxford, 1975); for a modern edition of only the 'ab' and 'b' pieces see Bernard Thomas, ed., 'Pierre Attaignant, Fourteen Chansons, 1533', *London Pro Musica Edition*, PC1 (London, 1972); a partial (but not wholly reliable) edition of some 'a' pieces from *Chansons musicales* is in www.allaindu.perso.neuf.fr/fluterennaissance/chansons.htm; the edition contains a number of mistakes and omissions, and 'Veule grief mal' is not the correct piece.

ongoing search for alto, tenor and bass parts, which may yet be discovered in manuscripts or printed sources.

Two further pieces are included in my edition: the anonymous ‘La plus gorgiase du monde’ (*CM*, fol. 15, superius only), for which I have found complete parts in a manuscript copy; and ‘Vostre beaulté’ (*CM*, fol. 9), which I believe should be identified as an ‘a’ piece. I discovered the complete four-part setting (lacking the text) of ‘La plus gorgiase du monde’ in D: Mbs, Ms. 1516, fol 19v. I have used the alto, tenor and bass parts of Ms. 1516 along with the superius flute part and text from *CM* (fol. 15) to reconstruct SATB flute parts.⁷⁰ The whereabouts of this complete piece were unknown to Anne Smith, Howard Mayer Brown or Daniel Heartz.⁷¹

The second piece, ‘Vostre beaulté’ by Nicolas Gombert (ascribed incorrectly to Lupi in *CM*), was designated by Attaignant as an ‘ab’ piece, that is, suitable for both flutes and recorders. I think this is a mistake, and that it should be an ‘a’ piece. The ranges of the parts (d'-g''/d'-c''/a-a'/d-f') are well-suited to a flute consort of three tenors and bass, but they are extreme or impossible for a consort of ATTB recorders. The G2 clef found in the soprano is often encountered in other ‘a’ pieces, but this clef is found in only two ‘ab’ and no ‘b’ pieces in *VSC* or *CM*; it is not a usual clef for recorder in other sixteenth-century usage.⁷²

Clefs, ranges and modes, the subject matter of the poetry and the character and style of the musical settings all have an important role to play in helping to determine why certain pieces might have been chosen especially for flute consort, others for recorder consort, and some for neither. The picture is somewhat clouded by inconsistencies and mistakes, and by the fact that *CM* does not exist complete. Nevertheless, some guidelines can be drawn about French flute consort playing practices which will further our understanding of what was thought best for flutes, and enable us to choose and arrange many more French chansons for flute consorts beyond the few which Attaignant chose.

The majority of pieces for transverse flutes conform to the theoretical ranges and modes specified by Jambe de Fer as being good for flutes. Stylistic questions can be answered by comparing the subject and character of the poetry along with rhythmic and

⁷⁰ The manuscript parts (which survive without text) were probably compiled in Augsburg, 1540. See Bruce Allen Whisler, ‘Munich. Mus. Ms. 1516: A Critical Edition’, Ph. D. diss. (Eastman School of Music of the University of Rochester, 1974), 81-3. Howard Mayer Brown, *IMPBS*, identified only a lute setting of ‘La plus gorgiase’ by Francesco da Milano: 1536/3, 21.

⁷¹ See fn. 68 for the relevant bibliographical material by Smith, Brown and Heartz. Howard Mayer Brown, *IMPBS*, identified only a lute setting of ‘La plus gorgiase’ by Francesco da Milano: 1536/3, 21.

⁷² See Peter Van Heyghen, ‘The Recorder Consort in the Sixteenth Century: Dealing with an Embarrassment of Riches’, *Musicque de Joye*, ed. David Lasocki (Utrecht, 2005), 280-284, for a good discussion of recorder clefs in the sixteenth century.

melodic nature of the pieces, to determine differences between those appropriate for recorders and those for flutes.

Clefs

A mixture of clefs is used for both recorders and flutes, and these do not seem to adopt any particular pattern which can be identified as 'high' or 'low' clef combinations (for a discussion about this subject and its relationship to flute consorts, see Ch. 4.4). However, the majority of the soprano 'a' pieces (14) use G2, a clef normally associated with high cleffing. The other soprano flute parts and most of the recorder parts are in C1. The 'a' bass parts are frequently notated in F3 as well as F4. Two 'a' and three 'ab' bass parts are in C4. There is a mixed use of C2, C3, C4 in the alto and tenor parts. The study of clefs is hampered by the missing alto, tenor and bass parts of *CM*, so no conclusions can be drawn.

Ranges

The usual practice for consorts of flutes and recorders was to play one octave higher than the notated music. The Attaignant pieces conform to this practice, and are notated an octave lower than sounding pitch. All of the Attaignant chansons are playable with the normal octave transposition, on a flute consort of three tenors and a bass – the 'French' consort as described by the French writer Jambe de Fer in 1556 – and the correct one for this repertoire.

The 'a' pieces generally have a higher tessitura and wider ranges in all the parts than the 'ab' or 'b' ones; they make full use of the ranges of the flutes, from the lowest note of the bass flute, written as G at the bottom of the bass clef, to the top notes of the tenor flute, extending upward to e''', f''' and g''' (well beyond the range of the g' recorder which is needed for the soprano parts of the 'ab' and 'b' pieces). Jambe de Fer remarked that the highest notes of the tenor are not often used because the 'vehemence of the breath required renders the sound very crude and rough'. They are flat in pitch and difficult to play quietly, requiring good breath and embouchure control to tune them and to produce a sound which is musical and gentle enough to blend with the lower parts. The use of these high notes in Attaignant's chansons indicates an expectation that players of these pieces were better than the average amateur player, for whom these high notes represent a major obstacle.

The 'a' piece 'Jectes moy sur l'herbette' covers wide ranges in all the parts: the bass part, one of only three notated in C4 clef, has a written range from B₁ extending up to f', making it the highest piece for bass in the two collections. The upper range of the soprano part extends to sounding g''', while the tenor and alto parts have ranges from written d – the bottom note on the instrument – to g'', also unusually high for the inner parts. By contrast, two further 'a' pieces, 'Elle veult donc' and 'Si bon amour' seem out of place, because the

ranges of the parts are narrow and within range for recorders; these pieces should perhaps have been labelled as 'ab', since they are playable on both recorders and flutes.

Two 'a' pieces go below the ranges for flutes: 'Sur tous regrets' has one written c in the tenor part, a tone below its lowest note. 'Souvent amour' has a written low F in the bass part, also a tone below its lowest note. Musicians then – as now – might find their own way around these isolated problems without resorting to transposing the pieces by making small local changes, such as shifting octaves for a few notes or rewriting passages which are too low or too high, techniques which are known to have been applied by musicians in order to play vocal music without resorting to transposition.⁷³

Mistakes of range also occur in two of the 'ab' pieces, designated for both flutes and recorders, where bass parts descend to F, fine on the bass recorder but a tone lower than the bass flute's bottom note, G. These are 'Voyant souffrir' and 'Allons ung peu plus avant', both from VSC. These could as easily be 'b' pieces, since all the parts share the ranges of other recorder pieces. In order to perform these on flutes, the bass flute must play the low Fs up an octave in 'Allons ung peu' while the bass part of 'Voyant souffrir' requires more extensive rewriting in order to be playable.

Modes

The preference for pieces in *cantus mollis* (that is, transposed) for flutes is borne out in the 'a' pieces. Nearly all are in *cantus mollis*, while the recorder pieces are in *cantus durus*, with no flat in the signature. 21 of the 26 'a' pieces are in *cantus mollis*: 18 of these have finals on G and three have finals on F. Only five flute pieces are in *cantus durus*: three with the final on D, one with the final on G, and one with the final on A. Attaignant's choice of *cantus mollis* for most of the flute pieces thus corresponds to the observations by Philibert Jambe de Fer in 1556, Virgiliano in 1600 and Praetorius in 1619 that the flute sounds best in transposed modes, in other words, those with a flat in the key signature.

Playing in *cantus mollis*, with B \flat and F natural in the scale, does generally have the advantage of being sweeter-sounding and easier for tuning on flutes than playing in *cantus durus*, which regularly require added C \sharp , F \sharp , G \sharp and B – notes which are low in pitch and crude in tone – at important cadences and as major thirds above finals on A, D, E and G respectively. But there are some difficulties with *cantus mollis* too. Pieces in *cantus mollis* require the frequent addition of E \flat s in the alto and tenor parts through application of the *musica ficta* rule *una nota supra la semper est canendum fa*, to supply the flattened sixth of

⁷³ I have suggested this solution in Ch. 3.2 for some German pieces in Arnt von Aich, *Hubscher lieder*, based on practices documented in Ferrara by Lewis Lockwood, *Music in Renaissance Ferrara 1400-1505* (Oxford, 1984), 269-271.

the scale beginning on G, rising to E and returning (g-a-b_b-c-d-e[_b]-d-c-b_b-a-g). E_b is a difficult note to sound well, requiring half-shading the bottom finger-hole on a D flute. Players must learn to produce this note readily and with control over sound – which is extremely quiet – and tuning – which is too sharp. ‘En espoir’ is particularly difficult to play, because E_b occurs at important melodic points at many points in the tenor and alto parts.

F_♯ is another difficult note, but one needed frequently at cadences on G, to raise the minor sixth to a major sixth leading to the octave (tonic). This is problematic, because F_♯ is far too flat on all flutes, even considering the sound-world of mean-tone temperaments (see Ch. 4.7 which discusses sixteenth-century temperaments in relationship to flutes). An acceptable F_♯ can be achieved by skilled players through embouchure and breath adjustments, but it is not easy to produce it softly or with a sweet tone.

None of the six ‘b’ (recorder) pieces are in *cantus mollis*: four have finals on G and two on A. The nineteen pieces for ‘ab’, or both instruments, are in a mixture: eleven have flat signatures, seven of which have finals on G, and four on F; eight have no flat in the signature, five with finals on A, one on D, and one each on E and G.

The choice of *modus* coincides with the ease of tuning certain notes and intervals, always a difficult thing for flute consorts. It is easier to correct a note which is too sharp downward than it is to make a flat note higher. B natural and F_♯ are coarse in tone and too low in pitch, and not able to be brought up to pitch with a gentle sound. The so-called ‘flat’ modes, with prevalent B_b and F natural, although too sharp in pitch, are sweeter in sound and easier to bring into tune.

Style and Character

Most of the chansons for transverse flutes are ‘lyrical’ chansons, as described above. In contrast, chansons with narrative texts, some of which have humourous (even indecent) lyrics, are also present in the collections, but these were generally assigned to the recorders. These pieces tend to be written with short motifs, repeated notes, and fast-moving points of imitation, which suit recorders better than flutes.

Seven pieces in the two collections have no designation for either consort and must have been intended primarily for singing. All are within the ranges (if not always the preferred modes) for flute consort, so the reasons for their exclusion are probably based on the style and character of the music and poetry. They offer some challenges if they are played on flutes.

Sebastian Festa’s madrigal setting of Petrarch’s sonnet, ‘O passi sparsi’ is one example, and it is worth examining the piece to see why, although playable by flutes, it is not so well suited to the flute consort. I include the complete madrigal below, Ex. 3.3.1. Only the

superius flute part survives in *CM*; the other parts are taken from the earliest publication of the piece *Canzoni frottole et capitoli libro primo de la Croce* (Rome, 1526).

‘O passi sparsi’ was well-known in France through Clement Marot’s translation of the poetry into French as ‘O pas esparz’.⁷⁴ Judging from the number of times the poem was published in French chanson anthologies, it was extremely popular, and Attaignant may have included the madrigal setting of ‘O passi sparsi’ (misattributed to Costanzo Festa) to sell more copies of *CM*. He also included the piece in his *Second livre contenant XXIX chansons eslevés*, 1549, as did Le Roy and Ballard in *Tiers livre de chansons*, 1544.⁷⁵

The music moves syllabically and homophonically in long-breathed phrases (see especially b. 31-55), with a dramatic and highly expressive text which is challenging to portray instrumentally. This is reason enough for ‘O passi sparsi’ to be omitted as a flute piece. But there are other difficulties too. The piece is in *cantus durus*, with tenor final on e’. The highest note in the soprano part, e^{'''}, is a difficult note to play gently, and it occurs at the most expressive points (b. 31 and 89). Numerous cadences on A require *facta* additions of F#, C# and G# (for example, b. 6-7, 28-9, 38, 45-6, 49, 61-3, 67-70, 78, 98, 103). The low a, which is the weakest note on the bass flute, occurs in the bass part at nearly every cadence.

No ‘a’ pieces are in *cantus durus* with an A final. Michael Praetorius, *SM*, 1619, recommends that pieces in *cantus durus* should be transposed down a tone on a consort of flutes. In this he includes pieces in modes with final on A (Hypoaolian) or on D (Dorian and Hypodorian):

For although transverse flutes are sometimes used in *cantus durus* it does not work in all modes or tones: which is why it is customary to play in the tenth mode, Hypoaolian, a tone lower on transverse flutes. And there is nothing more suitable to it than Dorian, Hypodorian and Hypoaolian *in secundo inferiore* [down a tone].⁷⁶

⁷⁴ For Marot’s translation, see Pierre René Auguis, *Oeuvres de Clément Marot* 4 (Paris, 1823), 246; for a full listing of sources for Marot’s translation, see James Haar, *Chanson and Madrigal 1480-1530: Studies in Comparison and Contrast* (Cambridge, MA, 1964), 69-70; and Iain Fenlon and James Haar, *The Italian Madrigal in the Early Sixteenth Century: Sources and Interpretation* (Cambridge, 1988), 214.

⁷⁵ Jeanice Brooks, ‘Dialogues with Italy’, *Courtly Song*, 258-266.

⁷⁶ Michael Praetorius, *SM III* (1619), iii, 7, trans. Ardal Powell, *The Flute*, 53.

O pas - si spar - si/o pen - sier - va - ghi/et pron - ti

o te - na - ce me - mo - ria/o fier - ar - do - re o

pos - sen - te de - sir o de - bil co - re o o - chi

mei o - chi non - gia - ma fon - ti. O bel vi -

so/o ve/a - mo - re/in - sie - me po - se Li spro - ni/e'l fre -

43

no/on - de/el mi pon - gh/e vol - ve Co - me/a lui pia -

51

ce/et cal - ci - trar non vale O a - ni - me gen -

59

ti - le/et a - mo - ro - se Se/al - cun ha'l mon - do/et vui nu -

67

de/om-bre/et pol - ve Deh re - sta - ti/a ve - der

77

qual e'l mio ma - le, Deh re - sta - ti/a ve - der qual e'l mio

86
ma - le Deh re - sta - ti/a ve - der

96
qual e'l mio ma - le qual e'l mio ma - le.

Ex. 3.3.1. Sebastian Festa, 'O passi sparsi', from *Chansons musicales* (1533).

Another undesignated piece, 'Or vien ça vien mamye Perrette', is in the 'good' flute mode, *cantus mollis* with final on G. The reason for its omission as a flute piece may have to do with its text, rhythmic texture and range. It is set to a rude, playful text, and is full of quick repeated-note patterns in a contrapuntal texture. The range and tessitura of the bass part is uncomfortably high – it begins solo on d' and uses that note often. These elements make 'Or vien ça' challenging for flutes (the 'a' piece 'Jectes moy sur lherbette' is also on a playful text, with higher bass notes – to written f'' – but the musical setting is more tuneful and lacks the continuous use of short repeated-note patterns).

Ex. 3.3.2. Clement Janequin, 'Or vien ça vien', b. 1-26.

The five remaining undesignated pieces in VSC, 'Mirelaridon', 'Va mirelidroge', 'Je ne diray mot', 'Ung petit coup', and 'Gentil mareschal' exhibit similar playful texts and fast-moving repeated patterns as 'Or vien ça vien'. Perhaps Attaingnant thought these word-rich 'patter-songs' were best performed by singers, who could create the needed rhetorical gestures with the words.

Conclusions

The chansons in Attaingnant's collections which were specially marked for flutes or recorders appear to have been carefully chosen to suit the two different types of consorts. Clear differences of range, *modus*, and style are observable between the pieces for flutes ('a') and those for recorders ('b'). The chansons suitable for both types of flutes ('ab') are more variable in these respects.

Attaignant seems to have catered to all levels of ability in these rewarding collections. The 'a' pieces are challenging, using the full ranges of tenor and bass flutes, and requiring a sophisticated technique and subtle musicianship. They are best suited to more experienced players, while the 'ab' pieces, with a lower tessitura in the soprano and bass parts and generally simpler textures, are well within the technical reach of amateur players.

The undesignated pieces are probably best suited to singers, but they are nevertheless challenging examples which can be performed successfully by experienced flute players. Difficulties of tuning, bringing out the character of the text, and the articulation of the fast passage-work and repeated notes aside, there is no particular reason not to play them on flutes, since they fit the ranges of the consort (except 'Mireleridon', which descends frequently to F in the bass). The stylistic and technical challenges pointed out in my discussion of 'O passi sparsi' and 'Or vien ça vien' are not insurmountable ones for players who have the necessary skills to cope with them.

Attaignant's two collections of flute pieces – few in number though they are – are a useful guide for modern players to use in choosing further pieces which are suitable for flute consort from the literally thousands of chansons published in the sixteenth century without such designation.

Table 3.3.3. Concordances for Pierre Attaignant, *Chansons musicales*, 1533 and *Vingt et sept chansons*, 1533.⁷⁷

Date	Title	RISM number
1526	<i>Canzoni frottole et capitoli libro primo de la croce</i> Rome, Valerio Dorico	1526 ₆
1530	<i>Vingt et neuf chansons musicales a quatre parties.</i> Paris, Pierre Attaignant	1530 ₃
1534	<i>Vingt et huyt chansons musicalles a quatre parties.</i> Paris, Pierre Attaignant	1534 ₁₂
1535	<i>Vingt et six chansons musicales a quatre parties.</i> Paris, Pierre Attaignant	1535 ₆
1535	<i>Second livre contenant xxxi chansons musicales.</i> Paris, Pierre Attaignant	1536 ₃
1536	<i>Tiers livre contenant xxi chansons musicales a quatre parties</i> <i>composez par Jannequin a Passereau.</i> Paris, Pierre Attaignant	1536 ₆
1537	<i>Second livre de chansons eslevés, contenant xxx chansons</i> Paris, Pierre Attaignant	1537 ₃
1537	<i>Tiers livre...xxx chansons vieilles.</i> Paris, Pierre Attaignant	1537 ₄
1538	<i>Los seyes libros del Delphin de musica de cifras para taner vihuela.</i> <i>Hechos por Luys Narvaez...</i> Valladolid, Diego Hernandez de Cordova	1538 ₂₂
1540	<i>Quart livre contenant xxviii chansons nouvelles a quatre parties.</i> Paris, Pierre Attaignant	1540 ₁₁
1540	<i>Le Parangon des Chansons, 7eme livre de xxvii chansons.</i> Lyons, J. Moderne	1540 ₁₇
1540	D:Mbs, Ms. 1516 (Augsburg, 1540)	--

⁷⁷ Concordances are identified by *RISM* numbers; sources not in *RISM* are identified and sources given where known.

Date	Title	RISM number
1542	<i>Chansons a quatre parties, composez par M. Benedictus.</i> Antwerp, Tylman Susato	1542 ⁷⁸
1542	F:CA, Ms. 125-8 (olim 124) (Bruges, 1542)	--
1544	<i>Hundert und fünfftzehen guter newer Liedlein.</i> Nuremberg, J. Ott	1544 ₂₀
1549	<i>Premier livre des chansons xxx pour les meilleures et plus frequentes, es cours des princes, convenables a tous instrumentz musicaulz.</i> Paris, Pierre Attaignant	1549 ₁₇
1549	<i>L'unziesme livre contegnant vingt et neuf chanson amoureuses a quatre parties, propices a tous instrumentz musicaulx.</i> Antwerp, Tylman Susato	1549 ₂₉
1554	<i>Tiers livre des chansons a quatre parties... convenable tant aux instrumentz comme a la voix.</i> Antwerp, Pierre Phalèse	1554 ₂₄
1555	<i>Premier livre de chansons.</i> Paris, Le Roy/Ballard	1555 ₂₃
1564	<i>Second recueil des recueils de chansons</i> Paris, Le Roy/Ballard	1564 ₁₂

⁷⁸ RISM series A I/1, 76.

Table 3.3.4. Pierre Attaingnant, *Vingt et sept chansons*, Paris, 1533, ranges, clefs, signature accidentals, finals, concordances.

Composer/ Title	Ranges S-A-T-B	Clefs S-A-T-B	Signature accidental	Final	Concordances
‘A’ Pieces:					
Gombert: Amours, amours	d'-f''/g-c''/g-f'/d-d'	g2-c2-c3-f3	b	g	none
Claudin: Elle veult donc	d'-d''/f-g'/f-f'/G-b _b	c1-c3-c4-f4	b	g	none
Vermont: Hayne et amour	d'-f''/f-b _b '/g-g'/B _b -c'	c1-c3-c3-f3	b	g	none
Claudin: Je navoys point	f'-f''/b _b -a'/g-e'/G-b _b	c1-c3-c3-f4	b	g	none
Lupi: Jectes moy sur lherbette	d'-g''/f-a'/d-g'/B _b -f'	g2-c3-c3-c4	b	g	none
Claudin: Parle qui veult	f'-f''/b-a'/g-g'/A-d'	g2-c3-c3-f3	—	G	none
Passereau: Pourquoy donc	f'-f''/g-b _b '/f-g'/c-d'	g2-c2-c3-f3	b	g	1536 ₆
Manchicourt: Pren de bon cueur	f'-f''/a-b _b '/g-g'/c-d'	g2-c2-c3-f3	b	g	none
Jacotin: Si bon amour	e'-d''/f-g'/f-f'/B _b -g	c1-c3-c4-f4	b	F	none
‘AB’ Pieces:					
Heurteur: Allons ung peu	d'-d''/e-g'/e-c'/F-a	c1-c3-c4-f4	b	F	none
Claudin: Amour me poingt	e'-c''/g-a'/g-g'/G-a	c1-c3-c3-f4	—	a	1537 ₄ ; 1549 ₁₇
Claudin: Amour me voyant	d'-d''/b _b -a'/g-f'/c-a	c1-c2-c3-c4	—	G	1537 ₄
Claudin: De vous servir	c'-c''/d-f'/f-d'/G-g	c1-c3-c4-f4	b	g	none
Heurteur: Hellas amour	d'-d''/g-g'/d-e'/A-a	c1-c3-c4-f4	—	a	1537 ₄ ; 1540 ₁₁ ; 1549 ₁₇
Heurteur: Je ne puis pas	c'-d''/f-g'/d-f'/G-g	c1-c3-c4-f4	b	g	none

Composer/ Title	Ranges S-A-T-B	Clefs S-A-T-B	Signature accidental	Final	Concordances
Anonymous: Jamais un cœur	d'-d''/f-g'/g-f'/d-d'	c1- c3-c3-c4	b	g	none
Vermont: Les yeulx bendez	d'-d''/f-f'/f-f'/B _b -b _b	c1-c3-c3-f3	b	g	none
Vermont: On dit qu'amour	d'-d''/f-g'/g-g'/B _b -b _b	c1-c3-c3-f3	b	g	none
Heurteur: Par un matin	d'-d''/f-a'/d-e'/G-b _b	c1-c3-c4-f4	b	g	none
Passereau: Tous amoureuse	d'-c''/g-g'/d-f'/G-b _b	c1-c3-c4-f4	b	g	none
Jacotin: Voyant souffrir	c'-c''/f-f'/e-d'/F-g	c1-c3-c4-f4	b	F	1536 ₃
‘B’ pieces:					
Claudin: Allez souspirs	e'-d''/g-g'/f-e'/A-a	c1-c3-c4-f4	—	a	1530 ₃
Heurteur: Troys jeunes burgeoises	f'-e''/f-a'/g-f'/G-a	c1-c3-c4-f4	—	G	none
Undesignated pieces:					
Anonymous: Gentil mareschal	e'-g''/a-c''/f-g'/B _b -c'	g2-c2-c3-f3	b	F	1536 ₆
Passereau: Je ne diray mot	e'-d''/g-g'/e-e'/G-g	c1-c3-c3-f4	—	G	none
Heurteur: Mirelaridon	c'-c''/f-f'/c-d'/F-a	c1-c3-c4-f4	b	F	none
Passereau: Ung petit coup	d'-e''/g-a'/d-e'/c-d'	c1-c3-c4-f3	—	G	1536 ₆
Passereau: Va mirelidrogue	d'-b'/f-g'/f-e'/B _b -b _b	c1-c3-c4-f4	b	F	none

Table 3.3.5. Pierre Attaingnant, *Chansons musicales*, Paris, 1533,
ranges, clefs, signature accidentals, finals, concordances

Composer/ Title	Ranges S-A-T-B	Clefs S-A-T-B	Signature accidental	Final	Concordances
'A' Pieces:					
Gombert: J'aymeray qui m'amera	d'-f'' ---	g2 ---	b	g	none
Certon: Je l'ay ayme	d'-d''[g-b'/f-g'/G-d']	c1-[c2-c3-f3]	b	g	1536 ₃
Certon: Si par fortune	d'-d''[g-a'/d-e'/B-d']	c1-[c3-c4-f3]	b	g	1555 ₂₃ ; 1554 ₂₄
Manchicourt: Desir m'assault	d'-d'' ---	c1 ---	b	g	none
Gombert: En espoir d'avoir	d'-e''[g-a'/f-f'/c-d']	g2 ---	b	g	F:CA, Ms. 125-8, f. 44r (down a 4th)
Claudin: Aultre que vous	c'-c'' ---	c1 ---	b	F	1534 ₁₂ ; 1535 ₆
Gombert: Hors envieux	e'-f''[a-b'/d-f'/B _b -d']	g2 [c4-c4-f4]	b	g	1536 ₃ (down a 4th)
Richafort: Sur tous regretz	c'-c''[f-f'/c-e _b /G-b _b]	c1-[c3-c4-f4]	—	d	1564 ₁₂
Adorno: Vous l'ares s'il vous plaist	d'-f'' ---	g2 ---	b	g	none
Benedictus: Le printemps	d'-g''[g-g''/f-g'/B _b -d']	g2-[c2-c3-f3]	b	g	1542
Claudin: Si ung oeuvre parfait	d'-c'' ---	c1 ---	b	F	none
Heurteur: ⁷⁹ Veu le grief mal	g'-g'' ---	g2 ---	—	d	none
Benedictus: Par trop aymer	g'-g'' ---	g2 ---	—	d	none

⁷⁹ A different setting for keyboard was published by Attaingnant in *Ving et six chansons musicales reduictes en la tabulature* (Paris, 1531), f. 107 (RISM 1531₂).

Composer/ Title	Ranges S-A-T-B	Clefs S-A-T-B	Signature accidental	Final	Concordances
Anonymous: La plus gorgiasse du monde	g-b'[b]-a'/f-g'/G-d']	c1/c2-[c3-c4-f4]	b	g	D: <i>Mbs</i> , Ms. 1516
Heurteur: Souvent amour me livre	d'-c''[f-g'/e-d'/F-g]	c1-[c3-c4-f4]	b	F	1537 ₃
Legendre: Si je ne dors	f'-e'' ---	g2 ---	b	g	none
Lupus (Gombert): ⁸⁰ Vostre beaulte	d'-g''[d'-c''/a-a'/d-f']	g2-[c1-c2-c4]	—	d	1544 ₂₀
‘AB’ pieces:					
Anonymous: ⁸¹ Per ch’el viso	a-c'' ---	c2 ---	—	d	none
Jacotin: J’ay tant souffert	d'-d''[g-g'/f-g'/c-c']	c1-[c3-c3-f3]	b	F	1536 ₃
Le Maire (Josquin): ⁸² Mille Regretz	c'-e''[a-a'/d-e'/A-c']	c1-[c3-c4-f4]	—	e	1538 ₂₂ ; 1549 ₂₉
Bridam: ⁸³ Faict ou failly	d'-d'' ---	c1 ---	—	d	none
Claudin: Content desir	g'-f''[g-a'/f-f'/A-c']	g2-[c2-c3-f3]	—	a	1536 ₃

⁸⁰ Attaingnant gives this as an ‘ab’ piece, but the ranges are too great, and the high clefs are unusual, for recorders; I have re-assigned this as an ‘a’ piece and included it in App. 2. For a modern edition of this piece attributed to Gombert, see J. Schmidt-Görg, ed., *N. Gombert, Opera omnia*, 11 (Rome, 1975), 71-3.

⁸¹ A different ‘canzone’ with this title, attributed to Sebastian Festa, is in Andrea Antico, *Motetti e Canzone, libro primo* (Rome, 1520), 19.

⁸² Both printed sources attribute this piece to Josquin; Daniel Hertz, *Pierre Attaingnant* (1969), 97, cites a large number of manuscript attributions to LeMaire, believing him to be the more likely composer of ‘Mille regretz’. But see David Fallows, ‘Who Composed Mille Regretz?’, *Essays on Music and Culture in Honor of Herbert Kellman*, ed. Barbara Hagg (Paris and Tours, 2001), 241-52, and *The Collected Works of Josquin Des Prez*, 28, ed. David Fallows (Utrecht, 2005), xii and xvi, where Fallows argues that the attribution to Josquin is ‘safe enough’, and accepts the view that it was composed in 1520 for the Emperor Charles V.

⁸³ A setting in 1529₃ by Claudin de Sermisy is not the same.

Composer/ Title	Ranges S-A-T-B	Clefs S-A-T-B	Signature accidental	Final	Concordances
Claudin:					
Vivre ne puy content	e'-e''[a-a'/g-g'/A-e']	g2-[c2-c3-f3]	—	a	1536 ₃
Lupi:					
Changer ne puy	c'-d''[g-a'/c-g'/A-c']	c1-[c2-c3-f3]	—	a	1554 ₂₄
‘B’ pieces:					
Guyon:					
De noz deux cueurs	d'-d''[e-a'/d-f'/A-c']	c1-[c3-c4-f4]	—	a	1536 ₃
Bourguignon:					
O desloialle dame	d'-d'' — — —	c1 — — —	—	G	none
Lupi:					
Puisque jay perdu	c'-d''[g-g'/f-f'/A-c']	c1-[c3-c3-c4]	—	G	1536 ₃
Anonymous:					
Eslongné mes amours	c'-d'' — — —	c1 — — —	—	G	none
Undesignated pieces:					
Sebastian Festa: ⁸⁴					
O passi sparsi	a-e'' [g-a'/e-f'/G-a]	c1-[c3-c4-f4]	—	e/a	1526 ₆
Janequin:					
Or vien ca vien	f'-f''[c'-b)/g-a'/c-d']	g2-[c2-c3-f3]	b	g	1540 ₁₇

⁸⁴ Misattributed to C. Festa.

Chapter 4. Playing the Renaissance Flute

song

wind

wood

wind

song

wood

wood

-wind

song

Ian Hamilton Finlay, *The Blue Sail* (2002)

Chapter 4.1

Source Materials for Renaissance Flute Technique

Introduction

Fourteen sources dating between 1511 and *ca.* 1638 provide valuable material about one or more aspects of Renaissance flute playing. All of these sources are listed below, with complete bibliographical information for the original publication and modern editions and translations. Two sixteenth-century instruction books should be singled out, because they treat the transverse flute and flute consort in more detail than any others and contain the most information about flute technique. These are: Martin Agricola's *Musica instrumentalis deudsch* (1529, revised edition 1545) and Philibert Jambe de Fer's *Epitome musicale* (1556). Both books discuss instrument sizes and ranges, fingerings, how the flute was held and blown, tonguing, tuning, clefs, transpositions, and modes for playing consort music.

The remaining sixteenth- and seventeenth century sources listed below offer information and instruction about one or more aspects of flute technique and performance practice. These are not as comprehensive as Agricola and Jambe de Fer. Nevertheless, each of the writers – Virdung, Frisius, Cardanus, Arbeau, Zacconi, Virgiliano, Praetorius, Mersenne, Trichet, and Van Eyck – offers valuable technical advice (and opinions, sometimes idiosyncratic and entertaining) about flute playing.

Diminution and ornamentation manuals form a separate but related body of literature. Those by Brunelli (1614) and Francesco Rognoni (1620) are listed here because they specifically mention the transverse flute – amongst other instruments such as cornett, violin and recorder – as an instrument well-suited for performing diminutions. Brunelli is unique for printing notated examples of rhythmic alteration and inequality, while Rognoni includes valuable notated examples of how to apply articulation syllables on the flute and other wind instruments.

Following this brief introduction to the sources, the remaining seven sections of Ch. 4 draw on the historical techniques described in instruction books and other source materials, and interpret them in an attempt to develop a modern pedagogy for the Renaissance flute. To provide a general context for the discussion of Renaissance flute pedagogy, Ch. 4.2 offers background about the theoretical language of music, music education, and instruction books in the sixteenth century. Chapters 4.3 to 4.8 examine individual aspects of pedagogy and performance practice which are necessary for playing the Renaissance flute with historic techniques: posture, fingering, range, transposition, embouchure, breath, sound, tuning and articulation.

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Frisius, Johannes (attr.). 'Scala sur la fleutte', ca. 1536. Ms., Basel, private collection.

Smith, Anne. 'A Newly Found Fingering Chart for the Renaissance Flute', *Glareana*, 54, no. 2 (2005), 62-70; facs. of the fingering chart and discussion.

Cardanus, Hieronymous (Jerome Cardan). *De Musica*, written ca. 1546, published (over 100 years later) in Lyons, Sponius, 1663. *De Musica*. 1568, rev. 1574. I: Rvat: Ms. 5850.

Cardanus, Hieronymous. *Writings on Music*, trans. and ed. Clement A. Miller (Rome, 1973); includes translations of both *De Musica* treatises (ca. 1546, published 1663, and 1568, rev. 1574).

Jambe de Fer, Philibert. *Epitome musical des tons, sons et accordz, es voix humaines, fleustes d'Alleman, fleustes à neuf trous, violes, et violon* (Lyons: Michel du Bois, 1556).

Lesure, François. 'L'epitome musical de Philibert Jambe de Fer (1556)' *Annales musicologiques*, 6 (1963), 341-46; includes facs. of the complete treatise.

Allain-Dupré, Philippe. 'L'Epitome musical de Jambe de Fer', *Les flutes de Rafi* (Courlay, France, 2000), 28-43, includes facs. and trans. and discussion (in English, German, Japanese) of the complete treatise.

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Thomas, Bernard. *Aurelio Virgiliano, Thirteen Ricercate from Il Dolcimelo* (London, 1980).

Brunelli, Antonio. *Varii esercitii...per una, e due voci, cioe Soprani, Contralti, Tenori, & Bassi: per I quail si po trà con facilità acquistare la dispositione per il cantare con passaggi: e per esercizio di Cornetti, Traverse, Flauti, Viole, Violini, & simili strumenti, con alcuni ruggieri a dua soprani per sonare. Opere Undecima* (Florence: Zanobi Pignoni, 1614).

Erig, Richard, ed. *Varii Exercitii* (Zurich, 1977).

Praetorius, Michael. *Syntagma musicum...tomus secundus: De Organographia* (Wolfenbüttel: Elias Holwein, 1619).

Gurlitt, Willibald, ed. *Syntagma musicum. Band II: De Organographia, Wolfenbüttel, 1619, facs.* (Kassel, 1958).

Blumenfeld, Harold, Eng. trans. *The Syntagma musicum of Michael Praetorius. Volume two: De Organographia, First and Second Parts* (New York, 1949; 2nd. ed. New York, 1962; rpt. New York, 1980).

Crookes, David Z, trans. and ed. *Syntagma Musicum, II: De Organographia, Parts I and II* (Oxford, 1986).

Rognoni, Francesco. *Selva di varii passaggi parte seconda, ove si tratta dei pasaggi difficili, per g'instromenti del dar l'archata, portar della lingua, diminuire di grado in grado; cadentie finali, essempli, canti diminuiti, con la maniera di suonar la viola bastarda* (Milan, Filippo Lomazzo, 1620).

Barblan, Guglielmo, ed. facs., Rognoni, Francesco, *Selva di varii passaggi parte seconda* (Bologna, 1983).

Dickey, Bruce, trans. Rognoni, Riccardo, *Passaggi per potersi essercitare nel diminuire* (Bologna, 2002) (includes a translation of Francesco Rognoni's treatise).

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Chapter 4.2

Music Teaching in the Sixteenth Century

Prior to the proliferation of published instructions in the sixteenth century, music was taught by personal apprenticeship, through example and imitation. Court musicians and city *stadtpeifer* recruited talented young musicians to learn from them in order to pursue court and city appointments as professional musicians. Court musicians also taught the kings, queens, duchesses and courtiers who were eager to learn to play an instrument or sing. Such teaching by apprenticeship nurtured a wide interest in playing musical instruments and fostered the development of consort playing amongst both amateurs and professionals.

Masters were strict and expected students to follow a rigorous routine. Surviving documents related to the long-established teaching practices of the court lutenist at Ferrara, Pietrobono (*ca.* 1417-1497) provide an example of a typical regime.¹ Daily lessons focussed on learning popular melodies which were then used as the basis for improvisation. Musical and technical exercises used for teaching purposes were taught by rote from master to pupil, which was a slow and laborious process – it was not unusual for a student to spend a month learning two or three pieces.² Although musicians would have needed a large amount of music on which to draw for their daily performances and teaching, it was not common practice to write instrumental music down. It is notable that in spite of Pietrobono's formidable reputation as one of the leading musicians and teachers in Europe, not a single piece of music by him survives, although he taught many pupils and performed regularly in polyphonic ensembles and as a soloist, accompanied by his *tenoristi*, Zanetto and Malacise, who played well-known tenors for Pietrobono to improvise upon.³

By the end of the fifteenth century a few books of instrumental music were copied and circulated for use amongst courts and households – this is a clear indication that that instrumentalists were able to read music, and that they wished to preserve a written polyphonic repertoire for their use. Three representative sources of instrumental repertoire from this period are: the north Italian Casanatense manuscript, *ca.* 1480-90, primarily French chansons without texts, copied for the use of the *alta capella* at the court of Ferrara; the Glogauer manuscript, *ca.*

¹ For discussion of Pietrobono's teaching see Lewis Lockwood, 'Pietrobono and the Improvisatory Tradition', *Music in Renaissance Ferrara* (Oxford, 1984), 103-08.

² See Lockwood, *Ferrara*, 107-08, for translations of letters from music students of Pietrobono, naming specific vocal pieces learned by lutenist-singers.

³ See Walter Rubsamen, 'The Earliest French Lute Tablature', *JAMS*, 21 (1968), 286-299, for a discussion of lute improvisation and its relationship to the earliest sources of lute music in Italy and France.

1480, a German songbook which contains a substantial amount of instrumental music; and the first printed book of music, Petrucci's *Harmonice musices Odhecaton A* (1501), issued in Venice, containing three and four-part textless French chansons by Josquin, Isaac, Hayne van Ghizeghem, Busnois, and others, along with Italian, Spanish Flemish and German pieces. Although many pieces are known from vocal sources, none of the music in the above sources is texted – all of the pieces were probably intended for playing in consorts, and some pieces were certainly originally conceived for instruments.⁴ A few pieces in particular seem to have formed an 'international' popular repertoire for instrumentalists: 'J'ay pris amours', 'Tandernaken', 'De tous biens playne' and 'La Martinella' are a few well-known examples of pieces which are found in the above sources and were circulating widely in other manuscripts and early printed sources – sometimes under different names, in different transpositions or with 'si placet' parts or borrowings.⁵

A Short Digression on Music Theory

Any modern discussion of Renaissance instrumental practices must start with an understanding of how the subject of music theory was taught. Renaissance musicians used a different vocabulary to describe a musical language which was based on modes, not scales, including the 'hexachord' and the *scala*, hard, soft and natural intervals, solmisation, a large number of clefs, and eight church modes and their transpositions.

Music instruction was cultivated especially in Germany during the time of Martin Luther, where a substantial number of music theory textbooks were written for Lutheran pupils (see discussion, Ch. 3.2). These were in an abbreviated and simplified format. Training was practical – first came hexachords, solmization, the modes and their application to plainchant. Only after mastering these, did they move on to notation of mensural music, proportions, counterpoint, transposition, *musica ficta* and ornamentation.

The modal system was in use during the sixteenth and seventeenth centuries, gradually to be superseded by functional harmony.⁶ Modes were theoretical constructs, in much the same way as functional harmony might theoretically describe a page of Wagner's *Ring* as being 'in' a key, where numerous chromatic alterations and shifts of harmony cloud any reference to such a thing. However, because sixteenth-century theorists described music modally, it is useful to briefly outline the basic principles.

⁴ For a discussion of this point, see Louise Littrick, 'Performing Franco-Netherlandish Secular Music of the Late Fifteenth Century', *EM*, 8 (1980), 474-87.

⁵ See Keith Polk, *German Instrumental Music*, 152-5; Polk also makes the point that pitch levels were very often consistent through a variety of sources.

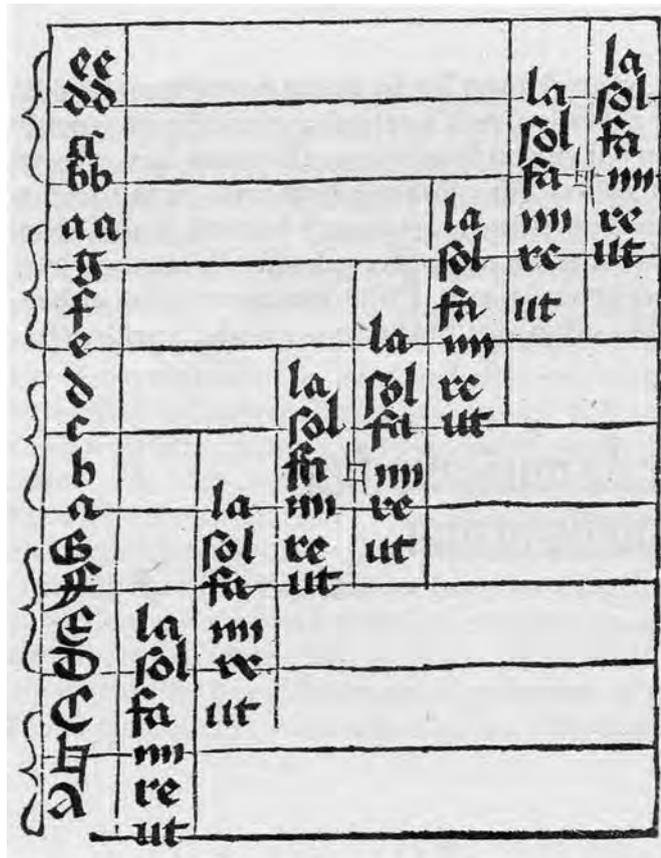
⁶ But see the illuminating discussion on the limited relevance of modes to actual polyphonic practice in Harold Powers, 'Is Mode Real', *BJbHM*, 16 (1992), 9-53.

There were eight modal scales at first, four ‘authentic’ and four related ‘plagal’ modes, that is, modes with the same final as the authentic modes but with ranges a fourth below and a fifth above the final. By the mid-sixteenth century the eight fundamental church modes were augmented by four more, making twelve modes, shown in Ill. 4.2.1. Each modal scale had a different arrangement of tones and semitones, unlike the modern scale system in which all major keys have the semi-tones between 3-4 and 7-8, and minor scales between 2-3 and 5-6):



Ill. 4.2.1. Authentic and plagal modes (x = Final, o = Tenor, or ‘Dominant’)

Singers were taught to read music by a system involving the use of six syllables in conjunction with the letter names for each note: ‘ut re mi fa sol la’. This series of six notes was known as a hexachord (Ill. 4.2.2). There were three overlapping hexachords, the ‘hard’ hexachord beginning on G, so-called because of the presence of B natural, or ‘hard’ B, the ‘soft’ hexachord beginning on F, with a B flat, or ‘soft’ B, and the natural hexachord beginning in C, which had neither B natural or B_b in its configuration of six notes. Each hexachord has the identical interval series of tone-tone-semitone-tone-tone sung to the solmisation syllables. The single semitone interval ‘mi-fa’ was distinctive, and its place in the modal scale gave each mode a particular and unique character.



Ill. 4.2.2. Hexachord *scala*, Sebastian Virdung, *MG*,1511, showing the full theoretical *gamut* of overlapping hard, natural and soft hexachords from Gamma-ut at the bottom to ee at the top.

Singing the interval ‘mi-fa’ in the correct place was the most important feature of solmisation, and enabled musicians to sight-sing and to transpose easily, because the same configuration of syllables existed for each of the three hexachords; thus, for example, ‘ut’ can occur on F, G or C. To ascend beyond the six-note scale, it is necessary to mutate from one hexachord to another, according to fixed rules. Modes, hexachords, solmisation and mutation were the foundation for music teaching and for sight-singing in the sixteenth century.

Instruction Books for Instruments

The growth of music education in the early decades of the sixteenth century and the subsequent popularity of music as an amateur pastime engendered the need for instruction books for teaching how to play instruments of all kinds. The earliest ones were written in German. Italian, Spanish and French sources followed after, but no English instructions for instruments other than keyboard or lute were published in the sixteenth century. Listed below are all of the sixteenth-century treatises which contain instructions for wind and stringed instruments (a more

complete list of sources for flute instruction is in Ch. 4.1).⁷ It seems that the aim of most writers was to include instructions for a number of instruments (see Virdung, Agricola, Gerle, Jambe de Fer, Virgiliano). Only Ganassi and Ortiz singled out the recorder and viola da gamba for special instruction.

1511 Virdung *Musica getutscht* (Basel, 1511): recorder, lute, keyboard.

1529 Martin Agricola *Musica instrumentalis deudsch* (Wittenberg, 1528, rpt 1530, 1532, 1542, rev. ed. 1545): comprehensive, all winds and strings.

1532 Hans Gerle, *Musica teusch* (Nuremberg, 1532): stringed instruments.

1535 Sylvestro Ganassi, *Fontegara* (Venice, 1535): recorder.

1542 Sylvestro Ganassi, *Regola Rubertino* (Venice, 1542): viola da gamba.

1553 Diego Ortiz, *Tratado di glosas* (Naples, 1553): viola da gamba.

1556 Philibert Jambe de Fer, *Epitome musical* (Lyons, 1556): transverse flute, recorder, viola da gamba, violin.

ca. 1600 Aurelio Virgiliano, *Il Dolcimelo* (Rome?, ca. 1600): transverse flute, recorder, cornett, violin (other instruments were intended, but the source is incomplete).

The treatise by Sebastian Virdung provides a good model of the ‘one size fits all’ approach to learning families of instruments. Practical instructions are included for only three instruments, clavichord, lute and recorder, which Virdung says are the only instruments one needs to learn, because the playing techniques of these three types can be transferred to all other instruments.⁸

Agricola’s instructions present more complete instructions for most of the instruments which were then known, including whole families of instruments in different sizes and tunings, followed by basic instructions for representative instruments which were transferable to all the other instruments of that family. For winds, his model is the recorder, which serves as a basis for instruction in the fingering and blowing of most of the other wind instruments; however, Agricola devotes separate chapters to the transverse flute because of the different techniques needed for fingering and blowing it.

Agricola emphasized in his preface to *MID* (1529) that students must know how to read music as a prerequisite for learning to play instruments. The woodcut in Ill. 4.2.3 depicting a German music classroom illustrates Agricola’s point: boys are being taught to read from staff notation (drawn on the wall) by instructors with disciplinary bundles of switches in their hands.

⁷ Treatises solely for lute and keyboard are not included in this list; sources for these instruments are listed in Howard Mayer Brown, *IMPBS*, 478-80.

⁸ Henry Van der Meer, ‘Introduction to Virdung’s ‘Musica getutscht’’, *Early Music Theory in the Low Countries*, 9 (Amsterdam, 1973), vi-viii.



Ill. 4.2.3. Hieronymus Hölzel, *ca.* 1500, woodcut, a music lesson.

Training in the rudiments of music theory was also important, and to this end most writers began their instrument instruction books with brief explanations of the hexachord system and the gamut, modes, solmisation and mutation. Ganassi acknowledged, however, that not all aspiring instrumentalists had training in theoretical matters. He indulged his readers by including both the solmization syllables and the note names in his fingering charts for recorders:

To make the fingering charts easier to understand, I have added the names of the notes below each diagram, so that you can sing them. The syllables above the notes should help you when going up the scale; you should then come down again according to the syllables under the notes. Should you have no knowledge of solmisation or practise in singing, take the recorder and let yourself be guided by it. It will be a sure guide.⁹

Instruction books were not progressive or methodical and included little in the way of specific technical instruction; the ‘what’ was covered but not the ‘how’. Practice materials in

⁹ Ganassi, *Fontegara*, 9 and App. 1.

the form of exercises or music were limited or non-existent (apart from the manuals specifically aimed at diminution techniques, which included practice formulas for intervals and cadences, tonguing and bowing, and ornamented chansons and madrigals). The lack of pedagogical materials may be a reflection of the personal relationship that many of the writers had with their pupils. Individual or class lessons would have enabled oral explanations and supervised rehearsals to supplement the written ones. These would have inculcated more refined and advanced technical skills than were possible through rudimentary written instructions (on the flute, for example, the difficult task of developing an embouchure, which cannot be learned by simply reading about it).¹⁰

Conclusions

From the lack of specific instructions and practice materials, and the colloquial tone of much of the writing, it would appear that most music instruction books were written for a close-at-hand world of friends, colleagues and pupils. Instructions are individual, personal, and sometimes amusingly anecdotal. Jambe de Fer, for example, advises flautists to drink often, in order to safeguard the tongue against mold (the full quote is in Ch. 3.3). Agricola introduces *MID* (1529) with a tongue-in-cheek reference which must have been calculated to appeal to his young students:

What I've planned for this book
I've accomplished, I took
One big risk, I confess,
Like a girl who said 'yes'!¹¹

Vague and contradictory as the early writers sometimes are, their texts are nevertheless a vital starting point for learning to play the Renaissance flute.

¹⁰ Personal contact as a supplement to written instructions was evident in the Baroque period too; for example, when the flautist Michel de la Barre published his *Pièces pour flûte traversiere* (Paris, 1702), he wrote a preface which advised pupils to 'stop by his house' for help with fingerings.

¹¹ Agricola, *MID* (1529), trans. Hettrick (1980), 103.

Chapter 4.3

Posture and Holding the Flute

Holding the flute correctly is the first thing to be addressed by most method books, be they old or new. But advice about posture, hand and finger positions, and the angle at which the flute must be held have changed over time, and what works well on a modern flute is not necessarily best for earlier flutes. Aspects of design such as the length, the relative position of mouth hole and finger holes, the spacing of finger holes and the angle of the embouchure hole directly affect how the flute is held and fingered. Attention must be given to balance and gracefulness; on the Renaissance flute it is difficult to avoid strain in the neck, shoulders, arms and fingers, and contortions are apparent in some pictures.

Design Features Which Affect Posture

On all surviving one-piece tenor and bass Renaissance flutes the embouchure hole and finger holes are bored in a straight line. Because of the one-piece construction, the relative positions of the embouchure hole and finger holes cannot be altered, and this feature can be identified as intentional. To play in this position, the head and neck must be held high, the embouchure hole is relatively open, and the lips must blow directly across the embouchure hole, resulting in a sound which is bright and clear.

The Baroque flute was made with a separate head-piece, which allows the player to adjust the position of the embouchure hole. Quantz instructed that the head-joint should be rolled inward in relation to the finger holes, so that the outer edge of the embouchure is in line with the centre of the finger holes.¹ This inward position results in a more covered sound on the Baroque flute, somewhat rounder and darker than its Renaissance counterpart.

Another design feature which affects how the Renaissance flute is held is the spacing of the finger holes. The finger holes on surviving instruments are in two groups of three, but are not equally spaced within those groups, and large finger stretches must be made to cover not only the third but also the sixth hole. This spacing was a compromise made between placing the finger holes for the optimum tone and tuning and what could be reached by human hands. The third and sixth fingers must be held nearly straight to reach and cover the finger holes. To further complicate things, the straightened sixth finger must be able to half-shade the bottom hole in order to obtain E_b, fingered ●●● ●●ø. This fingering hampers facility in chromatic passage-work (more on this in Ch. 4.4).

¹ Johann Joachim Quantz, *Versuch*, 36.

The left arm must stretch from the elbow and the left wrist be bent sharply in order for the fingers of the left hand to reach all three finger holes; the third finger is particularly strained. This is true especially for instruments at low pitches; even on surviving instruments pitched above $a' = 410$ it is necessary to stretch.

Table 4.3.1, a comparison of the hole placement between a Renaissance tenor flute and a Baroque flute of similar length, is instructive and allows us to make some comparisons of the relative distances between the holes. The overall length of both flutes is virtually the same (56cm measured from the middle of the mouth-hole to the end), although the pitch of the baroque flute, a copy of a Rottenburgh, Jr. (*ca.* 1745) by Alain Weemaels, is $a' = 415$, while the Renaissance tenor, a copy of an instrument in the AFV by Filadelfio Puglisi, is at $a' = 410$.

Table 4.3.1. Comparison of Renaissance and Baroque finger hole distances

Measurements (in centimetres)	Rottenburgh Jr.	AFV
Overall length	56	56
Distance from plug end to mouth hole	8	11
Distance of mouth hole from 1st finger hole	23	25.5
Distance between finger holes:		
Left hand:		
1 to 2	3.5	4.5
2 to 3	3.5	3.6
3 to 4	6.2	5.3
Right hand:		
4 to 5	3.5	4
5 to 6	3.5	4
6 to 7 (operated by a key on the Rottenburgh)	5.5	--
6 to end of flute	12.8	10.5

On the Renaissance flute, the distance between the mouth hole and first finger hole is 2.5 centimetres greater than on the Baroque flute, which means that not only the left arm but more crucially, the third finger must stretch by this extra amount, although the distance between the second and third finger holes on both flutes is nearly the same. The fourth hole on the Renaissance flute is closer to the third, with a resulting larger distance between fourth and fifth holes. This means that the fourth finger must stretch back nearly a centimetre, while the fifth finger stretches towards the bottom of the flute by an extra half-centimetre. Some players are depicted resting the unused fourth finger of the right hand on (or even under) the flute, as an aid to balancing and holding.

The Baroque flute replaced the cylindrical Renaissance bore with a conical one, enabling a closer spacing of the finger holes which resulted in a more comfortable hand position and more relaxed curvature of the fingers. The earliest Baroque flutes were made with six finger holes on a single joint. During the eighteenth century the middle joint was split into left and right hand joints with three finger holes on each, furthering the potential for adjusting the relative angles of the fingers. A seventh hole covered by a key was added to a separate foot joint, making it possible to finger E_b without half-shading.

Posture and Hand Position

Although the Renaissance and Baroque flute are different in design and playing characteristics, the manner of holding them is similar. No Renaissance writer discusses how to hold the flute; the French flute-maker and player Jacques-Martin Hotteterre was the first to offer specific written advice on posture and hand position:

Whether one plays standing or seated, the body must be kept straight, the head high rather than low, turned slightly towards the left shoulder, the hands high without lifting either the elbows or the shoulders, the left wrist bent in and the left arm near the body. When in a standing position, one must be firmly fixed on one's legs, the left foot advanced, the body resting on the right hip, all without strain... When this posture is achieved, it is quite graceful and will gratify the eye no less than the sound of the instrument will delight the ear.²

The illustration accompanying Hotteterre's text shows this 'graceful aspect' (Ill. 4.3.1). The head is tilted very slightly to the right, and shoulders, arms and fingers are relaxed and without strain.

² Hotteterre, *Principes de la Flute traversiere* (Paris, 1707), trans. Lasocki (1968), 9.



Ill. 4.3.1. Bernard Picart (1673-1733), frontispiece, Hotteterre, *Principes de la Flute traversiere* (1707).

A slightly different attitude to posture for the Renaissance flute can be observed in some sixteenth-century pictures, a good example being the portrait of a female flautist by Dirk de Quade von Ravesteyn (1589-1608) (Ill. 4.3.2). She holds her head, arms and fingers high. Her body is straight, the head turned slightly to the left shoulder, just as Hotteterre advises. But the left arm is stretched close across the body and the left wrist is bent to a more pronounced degree. The right arm is held higher and pushes the flute slightly forward of the body, at an angle which eases the tension on the neck, fingers and wrists somewhat. All the fingers are stretched further and straighter in order to reach the finger holes. The result is a more awkward position than for the Baroque flute.

A more graceful posture is illustrated in the ‘Jouissance vous donneray’ paintings *ca.* 1520 (see Ill. 3.1.3), where the female flautist rests her elbow on the table and appears hardly to be aware of any effort at all (this is akin to the ideal attitude of graceful effortlessness referred to as *sprezzatura* by the Italian humanist writer Baldesar Castiglione (1478-1529) in his book on courtly behavior, *Il libro del Cortegiano*).³

³ First published in 1528, Castiglione’s highly influential book was published in an English translation by Sir Thomas Hoby as *The Book of the Courtier* in 1561 (rpt. London, 1948); see also Northrop Frye’s illuminating essay on Castiglione in Frye’s *Myth and Metaphor* (Charlottesville, VA, and London, 1990), 307-21.



Ill. 4.3.2. Dirk de Quade von Ravesteyn, *An Allegory of Music*, ca. 1600.

Pictures of nineteenth-century flautists serve to illustrate how much things changed from the ‘graceful aspect’ of Hotteterre and the flute-playing women of the Renaissance. The virtuoso English flautist Charles Nicholson (1895-1837) illustrated good posture in his flute tutor of 1836 (Ill. 4.3.3). He showed that the accepted posture was upright, with arms and head held high, with both elbows held well away from the body in a ‘buttressing’ position. Similar posture was illustrated in the *Méthode* by the late nineteenth-century teacher at the Paris Conservatoire, Paul Taffanel (1844-1907).⁴ These represent not only a technical change – keyed flutes were heavier to hold – but also a philosophical one, away from the relaxed and seemingly effortless *sprezzatura* to the powerful ‘working’ performance style of later virtuosos such as Nicholson and Taffanel.⁵

⁴ First published in 1923, after Taffanel’s death, by his pupil Philippe Gaubert; Paul Taffanel and Philippe Gaubert, *Méthode Complète de Flûte* (Paris, 1923), 4.

⁵ For a good overview of the rise of the virtuoso in the early nineteenth century, and especially about Nicholson’s playing, see Ardal Powell, *The Flute*, 127-143; for a fascinating study of the life and teaching of Paul Taffanel and flute playing in Paris at the turn of the twentieth century, see Edward Blakeman, *Taffanel, Genius of the Flute* (New York, 2005).



Ill. 4.3.3. Charles Nicholson, *School for the Flute* (ca. 1836), illustration of perfect posture.

The Bass Flute

On Renaissance basses the third finger hole of the left hand and the sixth hole on the right hand are nearly unreachable; strain of fingers and neck is evident in Urs Graf's drawing of a bass flautist (see Ill. 3.2.1). The seventeenth-century French historian Pierre Trichet describes a peculiar method of holding the bass Renaissance flute in brief remarks about holding the bass obliquely across the chest and blowing it 'from behind', which I interpret as placing the embouchure hole at the back of the flute. This may offer a way of avoiding neck strain, and may also offer the player more control over the angle of the air stream, and lessen the strain on the fingers:

Il faut pour les entonner les tenir de travers joignant la bouche, et metre la levre inférieure sur la bord de l'emboucheure en poussant le vent fort doucement, comme on faict au fifre, sauf la basse qui s'entonne quelquefois par derriere et se tient pres de la poitrine.⁶

It is necessary for playing them [flutes] to hold them crossways joined to the mouth, and to put the lower lip on the edge of the embouchure hole in issuing for the air very gently...except on the bass which is played sometimes from behind and held next to the chest.

⁶ See Francois Lesure, 'Le traité des instruments de musique de Pierre Trichet', *AM* 3 (1955), 348-349.

Trichet's position, though seemingly peculiar and not entirely credible, may have been adopted by some players. This position is illustrated in an English bench end carving of a flautist holding a very large flute in St. Michael's Church, North Cadbury, Wincanton, Somerset, dated 1538 (Ill. 4.3.4). Though rather crude, almost comical, and lacking in detail, it shows that the flautist, little taller than his instrument, holds his flute at a pronounced oblique angle, almost vertically and 'next to' the chest, and blows from behind, just as Trichet describes a century later.



Ill. 4.3.4. St. Michael's Church, North Cadbury, Wincanton, Somerset, 1538, bench end carving; facsimile drawing by Derek Lindo, 1994.

The Soprano Flute

No particular information exists for the smallest member of the flute consort, and there are few pictures.⁷ The smallest flute requires adjusting to finger holes which are even smaller and closer together than on the tenor. For a person with slim fingers this does not present difficulties, but it is bothersome for someone with large hands. The picture of a tavern scene, Ill. 4.3.5 is notable and amusing for depicting a small flute in the hands of a large, pudgy

⁷ The flute in Hendrick ter Brugghen (1588-1629), *The Concert* appears to be a soprano, judging from the narrow bore and close finger holes; see below, Ill. 4.5.2. Another painting, portraying players of a theorbo and a small flute, is illustrated in Robert Spencer, 'Chitarrone, Theorbo, and Archlute', *EM* 4 (1976), ill. 6, 419; Lodovico Lana (1597-1646), *Geronimo Valeriani, lutenist to the Duke of Modena*.

soldier. The flute and flute case are somewhat foreshortened, which may be an artistic effort on the part of the artist to exaggerate the small size of the flute in order to emphasise the sluggish appearance and ignoble posture of the drunken soldier. In any case, it is in stark contrast to the fine military bearing of the soldiers illustrated in Ch. 2.2.



Ill. 4.3.5. Willem Buytewech (1591-1624), *Scene at an Inn*.

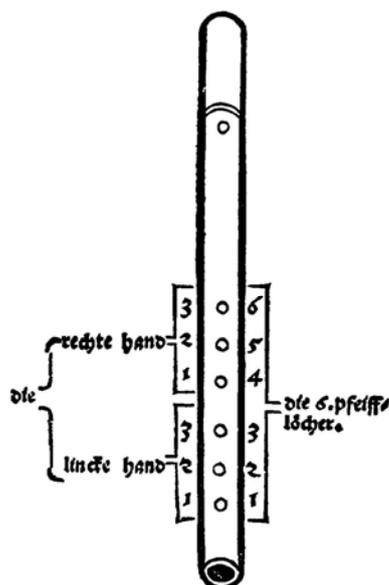
Left-Handed or Right-Handed?

Pictures show that the flute was usually held to the right, but a significant number show left-handed players. In the *Triumphzug* of Maximilian I both right and left-handed players were shown together. Right-handed playing was not standard even in the eighteenth century – the French court flautist Michel Blavet (1700-68) played left-handed, while his contemporary, Jacques-Martin Hotteterre, writing in his *Principes de la flute traversiere* (Paris, 1707), discouraged this:

Il y en a d'autres, qui, faute d'avoir eu des principes, posent la main gauche en-bas, la droite en-haute, et tiennent la Flute à gauche; Je ne condamneray pas absolument cette position de main, puisque l'on peut jouer aussi-bien de cette maniere que d'une autre, et qu'il y auroit de la difficulté à en vouloir prendre une differente: mais ceux qui n'ont point encore contracté ces mauvaises habitudes doivent se donner de garde d' tomber.

There are some who hold the left hand below and the right hand above, and hold the flute to the left. I will not absolutely condemn this position of the hands, since you can play as well in this way as in the other, and there would be difficulties in trying to change it. But those who have not yet contracted this bad habit must guard themselves against falling into it.⁸

Agricola (1545) illustrated a left-handed playing position in his drawing of a transverse flute (Ill.4.3.6).⁹ He labelled the hand nearest the mouth hole *rechte hand* (right hand), the lower one, *lincke hand* (left hand). On the right *die 6 pfeifflocher* (the six finger holes) are numbered from the bottom, 1 to 6, corresponding to the open and closed holes shown on Agricola's fingering charts.



Ill. 4.3.6. Martin Agricola, *MID*, (1545), showing the left-handed playing position.

On the surviving flutes in the BCV, the embouchure hole is slightly rotated clockwise and the angle of the opening and chimney undercutting is not symmetrical.¹⁰ These flutes were probably made to play to the right. Both Filadelfio Puglisi and Martin Wenner found that this differs from the '!! !!' flutes in the AFV, which are more symmetrically cut, a feature which allows the flute to be played either to the right or left.¹¹ Today virtually all players hold the flute to the right, and this will be the assumed posture for the following discussion.

⁸ Jacques-Martin Hotteterre, *Principes de la Flute Traversiere* (Paris, 1707), trans. Lasocki (1968), 4.

⁹ Agricola, *MID* (1545), fig. 24, fol 25r.

¹⁰ See Filadelfio Puglisi, *The Renaissance Transverse Flutes in Italy* (Florence, 1995), 37 and plates II to IX.

¹¹ Martin Wenner, pers. comm., May, 2009.

Standing or Sitting Positions

Flutes were played both standing and sitting, and military flautists are also depicted marching and on horseback. Pictures of the military Swiss pair show that most players stood up to play (See Ch. 2.2). One picture of particular power is Sebald's soldier (Ill. 2.2.18). Shown from behind on his solitary watch in a desolate landscape, the player is remarkable for the noble perfection of his bearing as he plays his lonely flute. This is the posture of a skilled and disciplined player, as indeed the reputation of the Swiss fifiers held them to be.

Even when the Swiss flautists were depicted playing for their own general amusement their stance combines elegance and strength (for example, the anonymous drawing of *Zechende Landsknechte emit Dirnen* ('boon drinking companions of the peasant soldiers with a prostitute', Ill. 2.2.21) illustrates the flute and drum duo in full flight, accompanying a rather comical dancing man). By contrast, the majority of flute players – mostly female – in chamber music settings are shown sitting down, often at a table (as in the 'Jouissance vous donneray' paintings, Ill. 3.1.3).

Players on Horseback

Playing on horseback was not likely to have been normal practice, since the bouncing of the horse would have made it impossible to keep the flute positioned on the lip. Few pictures document this rather risky stance. There is only one known example which depicts a mounted flautist and drummer in the midst of a battle.¹² A second picture, and a more realistic one for playing the flute, depicts several mounted flautists, in the *Triumphzug* of Maximilian I (see Ill. 2.2.8). Here three fifiers with upright bearing play on horseback. Perhaps in a stately procession such as this, producing a sound while mounted on a horse was possible.

Conclusions

Whilst pictures provide good source material for determining how players held their instruments, no sixteenth- or seventeenth-century treatises offer written instructions, even the most basic ones. For this, we must turn to written treatises for the one-keyed Baroque flute, and it is most interesting to compare these, along with pictures, to see that there were subtle differences in the ways of standing, sitting and holding the flute, which had to do not only with

¹² See Erhard Altdorfer (ca. 1485/87- 1561) 'Pfeifer mit Wappenkette', Schwerin, 1512, reproduced in www.renaissanceflute.ch.

the differences in length, weight, finger hole position, but also marked a change in the aesthetics of visual appearance.

Chapter 4.4

Fingerings, Ranges and Transpositions

An Introduction to the Sources

Eleven sources, dating between 1529 and 1649, provide fingering charts, range charts and are the most comprehensive, but they have proven to be problematic to interpret, as will be shown in the discussion below. In 1529, Agricola gave three different sets of fingering charts to be applied to a consort of *Schweitzerpfeiffen* (Swiss flutes, interchangeably labelled as *Querflöten*) a fifth apart: in 1529, one set is for flutes with bottom notes D, A and e; and in 1545, he published two more sets, one for flutes in C, G and d and the second set in GG, D and A.

Jambe de Fer published fingering charts for D tenor and G bass *fleutes d'Alleman* (German flutes) (*EpM*, 1556); neither mentions transposition. Unfortunately, the tenor chart does not survive.¹ His surviving bass chart is an important document with several unique features which show that Jambe de Fer was familiar with the problems of playing the bass.

Two manuscript charts survive: a somewhat unusual and problematic chart for a *fleutte* (flute) in G, written by Johannes Frisius (*ca.* 1536), and a chart for D tenor *traversa* (transverse flute) by Virgiliano (*Dol*, *ca.* 1600).²

Seventeenth-century range charts by Praetorius (*SM II*, 1619) treat the consort flute and Swiss flute as entirely separate instruments, with different sizes and ranges, showing that by the seventeenth-century, Swiss flutes and consort flutes had developed along different lines. It is impossible to pinpoint exactly when the two types of instruments may have developed their separate identities and fingerings, but it appears to be a late development, since no sixteenth-century source differentiates between Swiss flutes and consort flutes.

This chapter offers an analysis of all the fingering and range charts and transposition instructions known to have been in circulation for consort flutes and Swiss flutes. Each source is discussed and analysed separately, in an attempt to clarify the vagaries, anomalies and

¹ A surviving fragment which is probably from Jambe de Fer's tenor fingering chart is illustrated in Philippe Alain-Dupré, *Rafi* (Paris, 2000), 31. But see Herbert Myers, 'The Idea of Consort', *Musicque de Joye* (Utrecht, 2005), 57-8, fn. 49, who points out inconsistencies which make it difficult to say with certainty that this fragment belongs to Jambe de Fer's treatise.

² Another book, now lost, which may have contained fingerings, was published by Simon Gorlier, *Livre de Tabulature de flutes Allemande* (Lyons, 1558). Gorlier is listed in Howard Mayer Brown, *IMPBS*, as [1558]₂, 180. There is no certainty about the contents of Gorlier's 'tablature' – the term could refer to a collection of music, but may be an indication for fingering charts as well.

contradictions found amongst them. To facilitate my discussion, I have compiled a complete set of fingering charts from the original sources, for all sizes and types of flutes in Table 4.4.1. Facsimiles of original fingering charts are reproduced in Appendix 1. For bibliographic information about each source, including original editions, facsimiles and modern editions, see Ch. 4.1.

The Historic Fingering Charts Explained

Martin Agricola, *MID*, 1529

Three charts for *Schweitzerpfeiffen* (Swiss flutes), labelled Bassus in D (range D-d’), Tenor/Altus in A (range A-a’), Discantus in e (range E-e’’) with the chapter heading which reads:

Ein anders schönes und recht fundament wie drey oder vier
Schweitzerpfeiffen noch forderung des gesanges mit einander gebraucht
und wie die sech löher noch den Noten recht gegriffen sollen warden.

another fine and proper foundation for combining three or four Swiss flutes to play vocal music, and how the six holes should be properly fingered to play the notes.³

Agricola’s introduction to the fingering charts for flute are the first published fingerings for a consort of flutes. Although Agricola does not mention transposition, it is clear from studying his fingering charts in the 1545 edition (see below) that these are transposing charts for use with the normal flute consort, pitched in G, D and A. Here the fingerings are notated to facilitate playing up a fourth (notated an octave and a fourth below sounding pitch, since flutes played at 4’ pitch). On the tenor, for example, if the flautist reads the bottom note A with six fingers down, a d’ will sound.

Agricola’s three-octave ranges for each instrument are beyond the compass of any other fingering charts, most of which range between two and two-and-a-half octaves. Agricola misunderstood the flute’s capabilities (especially the limited capability of the bass flute, which cannot play more than a range of two full octaves). In my own experience with original instruments and copies, the highest three notes of his three octave range are extremely difficult

³ Agricola, *MID* (1529), fol. 12r; trans. Hettrick, ‘Martin Agricola’s Poetic Discussion’, *AR*, 21 (1980), 109-10.

to produce on tenors – even with extreme force of air – and are not of any practical use.⁴ The highest three notes are barely possible on sopranos and not at all possible on basses (some isolated notes lower in the third octave can be coaxed out, but a complete scale is not available, so these few notes are not of any practical use). Agricola's transfer of fingerings from one chart to another is naïve, and indicates that he did so without a true understanding of the demands of each instrument.

Martin Agricola, *MID*, 1545

In 1545, Agricola published six more charts for *Schweitzerpfeiff*. The first three are labelled 'Sequuntur tres irregulares harum Tibiarum Scalae ad Epidiatess. Transpositae' (here follow three irregular scales for flutes, transposed to the upper fourth), notated for Bassus in C (range C-g'), Tenor/Altus in G (range G-d'), Discantus in D (range D-g'').⁵

Like the 1529 charts, these are transposing charts, this time for playing up a fifth (notated an octave and a fifth below sounding pitch), on a 'normal' consort of flutes in G, D and A. On the tenor, for example, if the flautist reads the bottom note G as shown, with six fingers down, a d' will sound. As in 1529, Agricola does not mention transposition, but in 1529 he makes clear that the fingerings sounding up a fourth are meant for playing vocal music, in other words, to bring music which was outside the normal tessitura for flutes into playing range. Presumably these later charts sounding up a fifth were made for the same purpose.

Following these are three charts which he calls 'regular' charts, for Bassus in G (range GG-d, Tenor/Altus in D (range D-a'') and Discantus in A (range A-f''). Agricola calls these 'regular' charts the 'easiest and most natural fingerings' for the obvious reason that they are written at the normal pitches for flutes and do not require any mental gymnastics of transposition. Agricola was an octave too low in his notation of these 'regular' charts, and flautists must interpret them two octaves higher than written (with resulting 4' sounding pitches of g-d'' for the bass, d'-a''' for the tenor, and a'-f''' for the soprano). It seems to me that his mistake was based on an attempt to notate these 'regular' pitches in accordance with the fixed ranges of the hexachord *scala*, where the lowest note is GG (gamma-ut).

In all of the 1545 charts, the three-octave ranges were dropped, and ranges were differentiated somewhat amongst the three sizes. But in spite of this, the ranges are not entirely realistic. In the first 'irregular' chart, both tenor and bass ranges were given as 19 notes. This is fine for the tenor, but not for the bass, which cannot play contiguous notes of more than two octaves. The soprano chart, rather oddly, shows a range of 18 notes.

⁴ It may be that soldiers developed some flutes which could emit these high notes on the battlefield, where such loud, penetrating tones would have been useful. But these notes are never required for playing consort music.

⁵ Martin Agricola, *MID* 1545, fol. 26v.

The second set of fingerings – for flutes at ‘regular’ pitch – again shows a realistic range of 19 notes for the tenor, and again, 19 notes for the bass, but now 20 notes for the treble. Not every chromatic fingering was included in every chart, but by combining all the fingerings most of the chromatic notes needed for flute music are there (B \flat , E \flat , F \sharp , G \sharp , but no C \sharp , for reasons unknown). The inconsistencies and mistaken upper limits for basses and trebles are cause for suspicion that Agricola did not have a first-hand knowledge of the flute consort.⁶

Agricola’s fingering charts were presented in vertical columns, with a layout similar to diagrams of the *gamut* which were illustrated in theory books of the time (for a diagram of the *gamut* see Ch. 4.2). The fingering charts can best be understood by comparing the original charts (reproduced in App. 1) with the column-by-column explanations below.

Column 1: clefs

Clefs:	Γ	gamma ut G
)	bass F clef
	⋈	C clef
	g	treble g clef
	dd	treble d clef

Theoretically, all the notes of the hexachord could be designated as ‘clefs’. The ‘gamma ut’ and ‘dd’ clefs were not in practical use. Flute music was most commonly notated in G2 or C1 for the soprano, C2, C3, C4 for the alto and tenor, and C4, F3, F4 for the bass.

Column 2: chromatic alterations ‘mi’ and ‘fa’

Fingerings for sharps, designated ‘mi’, and flats, designated ‘fa’, include B \flat , E \flat in the bass and tenor charts, and F \sharp , C \sharp and G \sharp in the discantus chart. Finger holes are numbered from one to six, and the numbers indicate which finger holes are un-covered (see below, column four).

Column 3: names of notes

The octaves are shown with reference to the system of the hexachord *scala*, with DD indicating notes below *gamma ut*, E-G the first octave, a-g the second octave, and aa-dd the third octave.

⁶ Herbert Myers, ‘The Idea of “Consort” in the Sixteenth Century’, 57, also suggests that the misprints in the fingering charts indicate that he was copying the information second-hand.

Column 4: fingerings of natural notes

Fingerings of all natural notes, with blackened circles indicating ‘al zu’ (all fingers hole closed) for the bottom note, and numbers one to six to indicate combinations of fingerings for other notes. For example, the note immediately above ‘al zu’ shows only the bottom hole (1) as uncovered. As in column 2, finger holes are numbered consecutively from one to six, showing which finger holes should be open for each note. Half-open holes are shown with a slashed line through the number.

Column 5: solmisation syllables

The right-hand column gives the solmisation syllable for each note according to its place in the hexachord. The bottom note of the tenor flute A, is labelled *re*, the second note of the hard hexachord; the *discantus*, starting on E, is *mi*, the third note of the natural hexachord; the bass from D begins with *re*, the second note of the natural hexachord. Mutations to the next hexachord are shown at *sol* and *la*, the fifth and sixth notes of the hexachords. B and E are shown as *mi*, denoting their place in the hard hexachord (*fa*, representing the soft hexachord notes with flattened B \flat and E \flat , are shown in column 2).

Column 6: blowing instructions

Here are instructions for blowing each octave, labeled ‘vento’. Agricola offers a basic ‘blow harder’ approach for ascending. The first octave is labelled ‘mediocri’ (1529) or ‘blas messig’ (1545), to indicate blowing with a moderate breath. The second octave is ‘schnelle veloci’ (1529), or ‘blas etwas harter’ (1545); in other words, blow with a faster (somewhat harder) breath. In the 1529 charts the next three notes are marked ‘noch schneller velociori’ (even faster breath), and the highest three notes of these three octave charts are ‘auss schnellst velocissimo’ (the fastest breath). In 1545, when the three octaves were dropped from the charts, the notes above two octaves are marked ‘blas ganz stark’ (blow quite strong).

Johannes Frisius ‘la scala sur la fleutte’, ca. 1536

This hand-written fingering chart for a *fleutte* in G was discovered in Basel in 2005.⁷ The Swiss writer of the chart, Johannes Frisius (1505-1565), was a member of the Zwingli Protestant movement, a music theorist and teacher, who wrote several

⁷ Full details of the circumstances surrounding the discovery of the Frisius chart and its provenance, along with an analysis of the fingering chart, are in Anne Smith, ‘A Newly Found Fingering Chart for the Renaissance Flute’, *Glareana*, 54, no. 2 (2005), 62-70.

humanist tracts on music.⁸ He studied music in Zurich (1527-31) and Paris (1533-35). He taught in Basel for a year, returning to Zurich in 1537 to teach Latin, Greek and music at the cathedral school. His fingering chart, labelled 'la scala sur la fleutte', was scribbled on the fly-leaf of a volume of Seneca tragedies printed in 1536 (probably in Paris), owned and signed by Frisius: *Les Tragedies treseloquentes du grand Philosophe SENEQUE ... 1536*.

Most likely the chart was a private *aide-memoire*. The flute fingerings show a range from G-e' (exactly the range of the theoretical *gamut*), with fingerings given in tablature. This range is notated an octave below the sounding pitch for a bass flute, but is greater than any practical or possible range for a bass flute – as I have discussed above, Agricola gave a similar range for a bass in his 1529 chart, reducing it to 18 notes in 1545 (still greater than is possible on the bass).

It is possible that Frisius's chart was not for the bass at all, but a transposing one, meant for playing up a fifth on a tenor flute in D; this accords with Agricola's *MID* (1545) transposing chart for a tenor, written in 'G'. For an amateur player such as Frisius undoubtedly was, a tenor flute would have been a more likely instrument to learn than a bass. As in the Agricola chart described above, if a player reads the fingering for G, with all fingers down on a tenor in D, it will sound as d' – up an octave and a fifth from the notated pitch.⁹

The chart is arranged in three columns, similar to Agricola's but without Agricola's attention to detail. In the left-hand column, clefs are marked next to the appropriate notes, showing Γ, F4, C1, g2. The middle column has the name of each note, using appropriate octave designations, again as Agricola – upper case for the first octave, lower case for the second, and double letters for the third – and the special symbols for the lowest G (Γ), the square B-mi, or B natural (#), and the soft B-fa, or B♭ (♭). An indication of the note's position in the staff, whether a line or a space, is super-imposed on the note name. In the right-hand column are the fingerings in tablature. Some of his fingerings do not match other charts, and it appears that Frisius has made some mistakes. The fingerings he marks for low E natural (●○○○●) and the octave e natural (●○●●●●) produce E♭s. The highest note, 'ee' (●●○○○●) cannot be produced on a bass flute (nor is it possible on a tenor, for which the comparable note b''' is fingered ●●○○●●, according to Agricola). The lowest B-mi (#) fingering produces B-fa (♭) (●●●●○●). The same fingering is shown correctly as B♭ for the octave above, but the third octave B♭ is again mistakenly fingered (●○○○○●), and produces B natural. Frisius gives no

⁸ This and following details of Frisius's life are from Clement A. Miller, 'Frisius, Johannes', *GMO* 6. Coincidentally, I discovered and purchased a small sixteenth-century engraving of Frisius in an antiquarian print shop in Prague in 1992, long before the 2005 discovery of Frisius's fingering chart.

⁹ Anne Smith, 'A Newly Found Fingering Chart', 63-4, says that Frisius's chart is 'probably for a bass flute in G'; she also suggests that it could be for a tenor in D, but for transposition up a fourth.

fingerings for E, e', or B. Other accidentals were omitted by Frisius, and some fingerings are at variance with Agricola's tenor in 'G' charts, notably F, shown as ○●○ ○●○ (Agricola's is ○●○ ○●○), f, ○●○ ●●● (Agricola's is ○●○ ○●○), and c', ○●○●●● (Agricola, no fingering).

Frisius was a knowledgeable theoretician and music teacher, who would have understood the hexachord and its system of notation. But the errors he made in the fingering chart suggest that he was not an experienced flute player. Anne Smith offered the intriguing hypothesis that Frisius may have received instructions on how to play the flute during his Paris stay from one of the flute players or makers working there.¹⁰ Frisius's fingering chart bears the signs of a casually or hastily notated *aide-memoire*, and it is not a wholly reliable source.

Philibert Jambe de Fer, *Epitome Musicale* (1566)

Jambe de Fer's surviving chart is for *Le Bas des Fleutes d'Alleman*, a bass with a two-octave range, G-g''. A tenor chart for a flute has not survived (see the fragment in Appendix 1).. In the text he describes the tenor as having a natural range of two octaves d'-d''', with a further three or four notes (up to g'''- a''') obtainable by force, but these are 'crude and rude' and not much used. The two-octave range of the bass is 'all that is necessary for most bass parts in polyphonic music'.¹¹

Jambe de Fer further states the flute consort was complete with these two sizes, because the D flute played not only tenor and alto parts but also soprano parts (*dessus*) in a consort. The soprano flute in A is not mentioned at all. From this it is clear that French consorts – in 1556, at any rate – and there is no earlier information in France – were different from the German consorts illustrated by Graf in 1523 (Ill. 3.2.1) and described by Agricola in 1529 and 1545. These sources document the 'German' preference for three sizes of flutes: soprano in A, two alto/tenors in D and bass in G.

The bass fingering chart is arranged in two columns, the left one for notes with # (*cantus durus*) and the right one for those with ♭ (*cantus mollis*). The chart gives all of the chromatic notes needed for playing the bass flute: two flats, B♭ and E♭ (Jambe de Fer inverted the fingerings for e' and e♭'; this is the only error in his chart), and three sharps, F#, C# and G#. Chromatic inflections more distant than these were rare in modal polyphony, and flutes were not called upon to play them.¹²

Several of his fingerings are unique to the bass. For example, Agricola's tenor chart gave a fingering of ●●● ●○○ for f#'' (which is more than 50 cents flat in the low octave);

¹⁰ Anne Smith, 'A Newly Found Fingering Chart', 65.

¹¹ Jambe de Fer, *EpM*, 50.

¹² See Karol Berger, *Musica Ficta, Theories of Accidental Inflections in Vocal Polyphony from Marchetto da Padova to Gioseffo Zarlino* (Cambridge, 1987), for a thorough discussion of the meanings and conventions governing the practice of implied accidentals in Renaissance music.

this fingering is even flatter on the bass for the equivalent note, b' , and Jambe de Fer gave an different fingering with half-shaded sixth hole, as $\bullet \bullet \bullet \circ \bullet \emptyset$. No other chart suggests this. Although it is more than 20 cents sharp, and it is not a stable note but must be fine-tuned using embouchure and breath, it is easier to adjust the tuning and to make a more pleasant sound with this fingering than with the flat fingering.

Jambe de Fer gives another unique fingering on the bass, for f' as $\circ \bullet \bullet \circ \circ (\bullet)$ (closing the sixth hole is optional; he remarks that some people leave this finger off). This is a more stable fingering both in pitch and tone quality on the bass than Agricola's equivalent tenor fingering for c'' , $\circ \circ \bullet \bullet \bullet$. A word of caution: some players use Jambe de Fer's fingering for f' on the tenor, but it should not be used, because the sound is dull and lifeless.

The surviving fragment from the tenor chart reveals only solmisation and clef annotations for the diatonic notes between d' and d'' , including both $B\flat$ (fa) and B natural (mi). Above the place for 'Ccc.sol fa ut dit C' is written 'Fainte du...'. This may indicate the presence of a fingering for $c\sharp''$ but since no fingering is visible it is impossible to verify this. Philippe Allain-Dupré made the plausible suggestion that a fingering for $c\sharp''$ can be derived from Jambe de Fer's fingering for the bass $f\sharp'$ as $\circ \circ \circ \circ \circ \bullet$.¹³

Jambe de Fer annotated his fingering chart with comments about the use of breath to control the sound and intonation. These comments are included in the discussion about breath and sound in Ch. 4.6.

Aurelio Virgiliano, 'Il Dolcimelo', ca. 1600

The manuscript of the treatise 'Il dolcimelo' by Aurelio Virgiliano (fl. ca. 1580-1600) appears to have been intended for publication, but was not completed. Some pages are blank in the manuscript save for an instrument name, as if awaiting a fingering chart or further instructions. The only completed fingering charts are for the *flauto* (recorder), *traversa* (transverse flute) and *cornetto* (cornett). Apart from illustrations and fingering charts for these instruments, and a page of basic rules for performing diminutions, there are no other instructions.

The fingering chart for a *traversa* is for a tenor in D, labelled 'Modi da sonar le traverse', with a range of 19 notes notated as $d-a''$ (as normal, this chart is notated an octave below sounding pitch). The chart includes only fingerings for a modal scale beginning on D, with F natural and $B\flat$ (this scale can be described in theoretical terms as being in transposed Dorian mode, or G-Dorian). There are no fingerings for B natural, or any other chromatic fingerings. This implies that Virgiliano, like Jambe de Fer, considered *jeu de b mol*, or transposed modes with a $B\flat$ to be the best ones for the flute.

¹³ Philippe Allain-Dupré, *Rafi*, 31-4, 74-6. Since no other fingering chart includes $C\sharp$, this is a useful derivation.

To the right of the fingerings are instructions for transposition: next to f is a C clef with ‘alla 5a bassa per ♯’; next to g is a C clef with ‘alla quarta bassa per ♯.♭’, next to c’, a C clef with ‘in tuono per ♭ e per ♯’, and a G2 clef with ‘alla quinta bassa per ♯’; next to d’ is a G2 clef with ‘alla quarta bassa per ♭’, next to f’, a C2 clef with ‘alla quarta alta per ♯’, and finally, next to g’, a G2 clef with ‘a suo luogo per ♯’. These annotations indicate transpositions – a fourth higher or lower and a fifth lower – similar to those recommended by Agricola. These are fewer than those he gave for cornett and recorder, where transpositions by a by a tone, third, fourth, fifth, sixth and seventh are indicated, and show that flutes were more limited than other instruments were in the number of transpositions they could achieve

Following the book of instructions is a set of 13 *Ricercate*, presumably written by Virgiliano himself. Each is carefully labelled with the preferred instrumentation: recorder (*flauto*), cornett, violin, flute (*traversa*), viola da gamba and lute.¹⁴

Marin Mersenne, *Harmonie Universelle*, 1636

The latest fingering charts for the Renaissance *flustes d’Allemand* are the three by Marin Mersenne (1588-1648) in *HU* (1636): two are labelled *flustes d’Allemand*. The first is in G with a range of 19 notes from g to c”, and notated in C2 and G2 clefs. Mersenne did not specify the actual size of the flute, but with that range and those clefs, it is unlikely to be a bass, and Mersenne himself labels this chart *fifres suisses* in the Latin version of his book.¹⁵ Bass flute parts (or bass parts in general, for that matter) were not notated in the C2 and G2 clefs. If it is a bass chart, it is notated at sounding pitch; if it is a soprano Swiss flute, the notation is an octave below sounding pitch.

Mersenne’s second chart is for a *fluste d’Allemand* in D with a range of 18 notes, d’-g””. It is notated at sounding pitch. The clef is G2, which was a clef used frequently for the notation of soprano flute parts (for example, in many of Attaignant’s chansons of 1533). Like *Jambe de Fer*, Mersenne said that the *dessus* part should be played on the tenor flute in consorts.

The third fingering chart, labelled *fifre*, is also in D, and notated at sounding pitch in G2 clef. Mersenne remarks that the *fifre* differs very little from the *fluste d’Allemand*, only in that it was made in one size, was shorter and louder and speaks more strongly (‘plus fort’).¹⁶ But the fingering chart indicates more differences, including a more restricted range of only two octaves and some different fingerings from the *fluste d’Allemand*. Mersenne described it

¹⁴ For a modern edition of these pieces, see Aurelio Virgiliano, *Thirteen Ricercate from Il Dolcimelo, for solo treble instrument*, ed. Bernard Thomas (London, 1980). For discussion of one of the pieces for *traversa*, see Ch. 2.2 above.

¹⁵ Noted by Ardal Powell, *The Flute* (New Haven and London, 2000), 58.

¹⁶ Mersenne, *HU*, 244.

as ‘the instrument of the Swiss, who play it with the drum’ (‘le propre instrumente des Suisse, qui batten le Tambour’), and that it was never played in consorts like the *fluste d’Allemand*.¹⁷ A drawing of the *fifre* shows it to be a plain cylinder with six equally spaced and rather large finger holes, while his drawing of a *flustes d’Allemand*, which he calls ‘the best flute in the world’, is a more refined instrument, with smaller finger holes in two groups of three and turnings at the head and foot.¹⁸ Engravings and poems by the late seventeenth-century French artist Robert Bonnard depict similar distinctions between a long and elegantly turned *flute allemande*, played by a gentleman along with ladies playing lute and tympanum, while a much shorter and more simple flute is played by a solitary hunch-backed peasant.¹⁹

Mersenne’s text presents several more problems and inconsistencies which have not been convincingly explained.²⁰ No one has yet noted, for example, that Mersenne seems to be describing flutes at two different pitch levels, each related to a different use. First, he gives a description and detailed measurements for ‘the best flute in the world’, which he says plays the soprano part in consorts (‘dans les parties’). From the measurements, Philippe Alain Dupré has calculated this flute to be at a sounding length of 522 mm., which works out at a hypothetical pitch quite high, around $a' = 450$. This indicates that if Mersenne is correct in his measurements, the consort flutes he knew were at a higher pitch than the pitches generally assumed by most scholars and players to have been in use; the pitches of surviving consort flutes are much lower in pitch (see Ch. 1.3).

Mersenne goes on to say a few pages later that *flustes d’Allemand* are pitched at *ton de chapelle* ‘pour faire des concerts’, and that because one is not able to play a bass which is at such a low pitch, one uses a sackbut or serpent to play the bass part.

Flustes d’Allemand, qu l’on met au ton de chapelle pour faire des concert; et parce que l’on ne peut faire de Basse assez longue pour descendre assez bas, l’on use de la Sacquebute, ou du Serpent, ou de quelqu’autre Basse pour supplier.²¹

¹⁷ Mersenne, *HU* (1636), 244.

¹⁸ Mersenne’s instruments are reproduced conveniently side by side in Powell, *The Flute*, 59.

¹⁹ For these two engravings and the verses which describe them, see Robert Bonnard, *Symphonie du tympanum, du luth, et de la flûte d’Allemagne* and *Gentilhomme jouiant de la flûte d’Allemagne*, 1692, Paris: Bibliothèque nationale de France, Département des Estampes. The *Symphonie* engraving is reproduced in Ardal Powell, *The Flute*, 64.

²⁰ The difficulties of interpreting Mersenne’s text are noted and briefly discussed in Ardal Powell, *The Flute*, 58-9. Trevor Robinson, ‘A Reconstruction of Mersenne’s Flute’ *GSJ*, 26 (1973), 84-5, made an attempt to address the problem of Mersenne’s conflicting measurements for a flute, but without convincing results.

²¹ Mersenne, *HU*, 243.

Here he seems to be describing a completely different situation, where flutes are playing in a mixed ensemble ('en concert') with a bass instrument at eight foot pitch, and at low chapel pitch, which was a whole tone (or more) lower than $a' = 440$ (see Ch. 1.3 for a discussion of flutes at this pitch).

Still later, after describing the Swiss flute, which he says only plays with a drum, he goes back to the consort flute, and gives an example 'a quatre parties' (in four parts) of an *Air de Cour pour les Flustes d'Allemand*. The piece (unidentified by Merseune) is 'Su su la berger' by Pierre Guedron (not Henri le Jeune as stated by Roger Chapman).²² The music is in C, a rather unusual mode for flutes, and all the parts are high in tessitura (original clefs are F3, C3, C2, G2). The soprano part ascends to a''' (b. 5, sounding pitch), and there are awkward passages (b. 4-5). A soprano flute in A would negotiate these passages easily, but no French source recommends its use. The most likely 'French' solution is to play the piece on three tenors and a bass, bearing in mind that a skilled player is needed to negotiate the third octave passage-work. Transposition down a fourth is also possible. This puts the soprano part in a better range, although it puts the piece in G, with added F#s.

Ex. 4.4.1. Marin Merseune, *HU* (1636), 'Air de cour pour les flustes d'Allemand' ('Su, su la berger', by Pierre Guedron).

Going back to Merseune's fingering charts, there are some differences and idiosyncrasies which call for explanation. The two D charts agree with each other in

²² Roger E. Chapman, trans. *Harmonie Universelle: The Books on Instruments* (The Hague, 1957); Chapman's translation of the flute material is not wholly reliable. Ardal Powell repeated Chapman's mistake, see *The Flute*, 57.

fundamental ways, but the *fluste d'Allemand* chart has a more extensive upper range, to g''', while the *fifre* ascends only two octaves, to d'''. Mersenne includes fingerings for a Dorian scale in both charts, with both B natural and F natural. The fingerings for F are wrong, however: ● ● ● ● ○ ○ is given in both octaves of both charts. This fingering normally produces F#, while F natural is normally fingered ● ● ● ● ○ ●. It may be that Mersenne simply made a mistake. But Rudolf Tutz has demonstrated the use of the F# fingering as a convincing method for playing simple Dorian scales on the military flute (perhaps without much attention to intonation) without the need for cross fingering.²³ F#s on tenor Renaissance flutes are extremely low in pitch – so low in fact, that it is possible to produce F natural using the F# fingering and lipping down. Whether this was Mersenne's intention cannot be verified.

Sources Which Give Only Ranges²⁴

Jerome Cardanus, *De musica*, 1546: *fifola* in D.

Cardanus mainly concerned himself with the recorder, but wrote briefly about the transverse flute. Cardanus studied and worked in Milan and Padua, visited Scotland in 1552, and moved to Rome in 1571. He briefly mentioned the *fifola* in D, with a range of nine notes. Cardanus's reference was clearly to transverse flutes, but the range is likely a mistake, and meant to be 19 notes. His use of the term *fifola* is the same as that used by another Milanese writer, Francesco Rognoni (*Selva di varii passaggi* 1620), nearly 80 years later, who gave the range of the *fifola* as 18 notes. It could be that Cardanus mistakenly wrote nine instead of nineteen notes; the latter is more in keeping with Rognoni's and other written ranges for transverse flutes.

Ludovico Zacconi, *Prattica di Musica*, 1596: *traversa* in D.

Zacconi discusses only the tenor *traversa*, giving it only two octaves, d' to d'''.

Michael Praetorius, *Syntagma musicum*, II, 1619.

²³ Rudolf Tutz, unpublished paper read at the Basel Conference on Renaissance Flutes, 6-8 September, 2002. A different approach to playing without resorting to cross fingering was put forward by Ardal Powell, 'Military Flutes of the Sixteenth Century', unpublished paper given at the meeting of the American Musical Instrument Society, 18 June, 1999; Powell suggests that military flutes may have fingered more like tabor pipes, overblowing at the twelfth, with the first eleven notes playable using only the lowest three holes. There is no evidence to support this intriguing theory.

²⁴ For bibliographic material for these sources, see Ch. 4.1.

Praetorius is the only writer after Agricola, nearly one hundred years earlier, to describe a consort of flutes in three sizes. I have identified this as the ‘German’ consort in Ch. 3.2. Praetorius includes ranges but no fingering charts for *traversa* or *querflöte*: bass in G, two octaves, G-[g’]; tenor in D, fifteen ‘natural’ notes, d’ - d^{'''}, with further four notes, e^{'''} - a^{'''}, obtainable by ‘experienced players’; soprano in A, with a two octave range, a’ - a^{'''}. Ranges are notated at sounding pitch, but he remarks that music on flutes was always played an octave higher than written (as I have shown was common practice for both flutes and recorders).

On a separate stave, ranges for two sizes of *Schweitzerpfeiffen* are shown: tenor with a two-octave range, d’ - d^{'''}, and a smaller instrument in G, with a range of only eleven notes, g’ - c^{'''}. This is the first written evidence for a soprano flute in G. Judging from their restricted ranges and the relationship of a fourth between them, these ‘Swiss flutes’ were not consort instruments, but military ones. This accords with the surviving seventeenth-century military flutes and cases in Graz and the Alten Klingen flute case, also military, which indicate instruments a fourth apart, and the cases do not have slots for bass sizes.

A further difference from the consort flute is indicated by the clearly marked sharpened third degree of the scale for *Schweitzerpfeiffen* (an F[#] for the D instrument). This is a radical difference from the minor third which was the preferred scale for the consort flutes (but also reminds me of Tutz’s suggestion above, in which the simple fingering suffices for both F₄ and F[#], for signalling and simple monophonic tunes or improvised patterns, none of which require the subtlety or perfection of tuning demanded in consort playing).

Francesco Rognoni, *Selva di varii passaggi*, Milan, 1620: *fifaro*, size unspecified, but with a range of 18 notes (*dieciotti*).

Given the range, and the fact that Rognoni’s book is meant for teaching to play diminutions, the instrument is most likely a tenor.

Jacob Van Eyck, *Der Fluyten Lust-hof*, 1649, *dwars-fluit* in g, range g’ - d^{''}.

Van Eyck’s collection of well-known tunes and diminutions were written primarily for the recorder. Most of the music was written with a range down to c’, which requires upward transposition to be playable on the flute. Included in Kees Otten’s edition are several pages which were bound in with the 1654 edition of *Der Fluyten Lust-hof*, which illustrate a soprano recorder and transverse flute.²⁵ ‘Vertoninge en Onderwyzinge op de Hand-fluit’, shows a soprano recorder in C with a range from c’-d^{'''}. ‘Vertooninge op de Dwars-fluit, wat de onderste G is’, illustrates a flute in G with a notated range of g-d^{'''}. Presumably this is a

²⁵ Kees Otten, ed. *Der Fluyten Lust-hof*, facs., Amsterdam [1979]. The 1654 edition is in D-Bds: Mus. Ant. Pract. E280; see Ruth van Baak Griffioen, *Jacob Van Eyck’s Der Fluyten Lust-Hof (1644- ca. 1655)* (Utrecht, 2005), 47.

soprano flute in G, notated – as usual for flutes – an octave lower than sounding pitch.

Praetorius (1619) and Van Eyck are the only sources which describe the soprano flute in G (Van Eyck's with a greater upper range). It may be that Dutch players preferred the sound and immediacy of response of small flutes and recorders for playing diminutions. But the flute chart may also be a transposing one. While all of Van Eyck's pieces are playable on a C recorder at the written pitch, in order to play the pieces on the flute, transposition upward by a fourth or a fifth is usually required. Van Eyck's music can also be performed on a tenor flute in D or a soprano flute in A, with appropriate transpositions.

Conclusions

Some fingering charts provided far more than fingerings. Instructions about breath, sound, range and transposition – all important tools needed for playing the Renaissance flute – form part of the fingering charts by Agricola, Jambe de Fer and Virgiliano. The natural range given in most sources for all sizes of consort flutes is two octaves, for soprano, a'-a''', tenor, d'-d''' and bass, g-g'' (these are sounding pitches, notated one octave lower in the fingering charts). Jambe de Fer and Praetorius extended the range of the tenor to g''' or a''' for experienced players, while Virgiliano gave the upper range to a''' without comment; Agricola first indicated an astonishing three octave range (twenty-two notes) for all sizes of flutes in *MID* 1529, which are impossible for practical use.²⁶ In the revised edition of *MID* 1545, Agricola reduced the ranges to between 16 and 21 notes, depending on the size of flute, but these are still greater ranges for bass and treble than those given by any other writer.

Transposition practices are indicated by both Agricola and Virgiliano. Agricola's three different sets of fingerings for soprano, tenor and bass flutes are for playing at pitch, and for transpositions by a fourth and a fifth, while Virgiliano indicates these same transpositions through reading different clefs. Agricola advised to pick the fingering which was 'most pleasing', which indicates that as well as being a necessity, transposition was also an aesthetic choice. Thomas Morley (1597) also remarked on the aesthetic choices of transposition, cautioning against wrong use:

Those songs which are made for the high key be made for more life, and others in the low key with more gravity and staidness, so if you sing in contrary keys they lose their grace and will be wrested out of their nature; for take an instrument as a lute or such like being in the natural pitch, and set it a note or two lower, it will go much heavier and duller ... likewise take a voice and cause it sing above the natural reach, it will make an

²⁶ Agricola (1529), fol. 13-14; Jambe de Fer (1556), 47; Praetorius (1619, trans. Blumenfeld, 1962), 35, Virgiliano (*ca.* 1600).

unpleasing and unsweet noise ... Even so, if songs of the high key be sung in the low and they of the low key sung in the high, though it will not be so offensive as the other, yet will it not breed so much contentment in the hearer as otherwise it would do.²⁷

The fingering charts themselves are remarkably consistent. The charts of Agricola and Virgiliano, for example, are nearly identical (Agricola's being the more comprehensive, with most of the chromatic fingerings, while Virgiliano gives fingerings only for a basic Dorian scale with B \flat). Some of Jambe de Fer's fingerings for bass flute are unique, and show special attention to the tuning problems and tonal deficiencies of the bass.

The overall consistency of fingerings is not really surprising, given the consistency of the bore ratios, finger hole placement and tuning found in surviving Renaissance flutes (see Ch. 1.3). This consistency contrasts with the diversity of fingerings which are revealed in the published fingering charts for the one-keyed Baroque flute.²⁸ Changes in bore size and conicity, finger hole size and placement, embouchure size and tuning at every stage of the Baroque flute's development (between about 1670 and 1760) necessitated changes in the fingerings as well.²⁹

²⁷ Thomas Morley, *A Plaine and Easy Introduction to Practicall Musicke* (London, 1597), ed. Alec Harman (New York, 1963), 275.

²⁸ For a comprehensive study of original Baroque flute fingering charts, and discussion of this diversity of fingerings, see Margaret Neuhaus, *The Baroque Flute Fingering Book* (Naperville, ILL), 1986.

²⁹ Also pointed out by Janice Dockendorff Boland, *Method for the One-keyed Flute* (Berkeley and Los Angeles, California, 1998), 55.

A Modern Guide to the Fingerings for Renaissance Flutes

For purposes of detailed comparison and discussion, I have compiled a comprehensive chart for all sizes of flutes – soprano in A, tenor in D and bass in G – in Table 4.4.1 below. Closed holes are indicated by blackened circles ●, open ones are white ○. Half closed holes are indicated with ø. Ambiguous (but probably closed) holes (such as those shown by Mersenne as double rings), are shown as white circles inside a black square ◼. Separate columns identify sounding pitch, fingering, source, and comments from the sources and from my own observations.

None of the charts is fully chromatic, but it is possible to find fingerings for a full chromatic scale by combining the fingerings from Agricola's nine charts and Jambe de Fer's bass chart. Enharmonic differences were not notated by anyone.³⁰ But in practice, inflections beyond two flats (B \flat and E \flat) or three sharps (F \sharp , C \sharp , G \sharp) are not called for in any music for Renaissance flutes. Tuning differences between flats and sharps can be accomplished by skilled players using embouchure, breath and finger shading or alternate fingerings of their own devising.

³⁰ Enharmonic differences were notated in seventeenth- and eighteenth-century fingering charts for Baroque flutes; see also Bruce Haynes, 'Beyond Temperament: Non-Keyboard Intonation in the Seventeenth and Eighteenth Centuries', *EM*, 19 (1991), 357-8. Quantz designed a flute with separate keys for E \flat and D \sharp , which he described in his *Versuch* (1752), trans. Reilly, 46-7.

Table 4.4.1. Composite Fingering Charts for Renaissance Flutes

Tenor in D:

	Sounding pitch	Fingering	Source	Comments
1	d'	● ● ● ● ● ●	Agricola 1529	Tenor in A for transposition up a fourth applies to all 1529 fingerings
		● ● ● ● ● ●	Agricola 1545a	Tenor in G for transposition up a fifth applies to all 1545a fingerings
		● ● ● ● ● ●	Agricola 1545b	Tenor in D for playing at written pitch applies to all 1545b fingerings
		● ● ● ● ● ●	Virgiliano <i>ca.</i> 1600	
		● ● ● ● ● ●	Mersenne 1636 1	<i>flute allemand</i> (1)
		● ● ● ● ● ●	Mersenne 1636 2	<i>Fifre</i> (2)
	e _b '	● ● ● ● ● ∅	Agricola 1529	The only source for this fingering; must be focussed and gently blown
2	e'	● ● ● ● ● ○	Agricola 1529	
		● ● ● ● ● ○	Agricola 1545a	
		● ● ● ● ● ○	Agricola 1545b	
		● ● ● ● ● ○	Virgiliano	
		● ● ● ● ● ○	Mersenne 1 and 2	
3	f'	● ● ● ● ○ ●	Agricola 1529, 1545a, 1545b	The pitch is sharp and must be lipped down for this note
		● ● ● ● ○ ●	Virgiliano	
		■ ● ● ● ○ ○	Mersenne 1 and 2	Mersenne shows an odd combination of dashes and rings for closed holes; some writers have interpreted the ring as an open hole, but surely it is meant to be closed; this fingering is f _♯ ' in other sources, but can produce f' if blown gently
	f _♯ '	● ● ● ● ● ○ ○	Agricola 1545a	pitch is -35 cents flat
4	g'	● ● ● ○ ○ ●	Agricola 1529	Covering the 6th hole is for stability, it does not affect pitch
		● ● ● ○ ○ ○	Agricola 1545a	
		● ● ● ○ ○ ●	Agricola 1545b	
		● ● ● ○ ○ ○	Virgiliano	
		● ● ● ○ ○ ●	Mersenne 1 and 2	

Sounding pitch	Fingering	Source	Comments
g \sharp '	● ● \emptyset ○ ○ ●	Agricola 1529	no other source gives a fingering for g \sharp '; blow very gently for this
	● ● ○ ● ○ ○	Agricola 1529	no other source gives a fingering for g \sharp '; sharp but stable
5 a'	● ● ○ ○ ○ ○	Agricola 1529, 1545a, 1545b	
	● ● ○ ○ ○ ○	Virgiliano	
	● ● ○ ○ ○ ●	Mersenne 1 and 2	
b \flat '	● ○ ● ● ● ●	Agricola 1529	too flat, must be lipped up
	● ○ ● ● ○ ●	Agricola 1545a	a bit higher
	● ○ ● ○ ○ ●	Agricola 1545b	higher still
	● ○ ● ○ ○ ○	Virgiliano	the sharpest fingering
6 b'	● ○ ○ ○ ○ ●	Agricola 1545a, 1545b	Neither Agricola 1529 nor Virgiliano gives a fingering for b'; a bit flat and bland, closing 6 makes no difference to tuning or tone
	● ○ ○ ○ ○ ●	Mersenne	
7 c''	○ ○ ● ● ● ●	Agricola 1529, 1545b	This is more stable and bright than the cross-fingered ones below
	○ ● ○ ○ ○ ●	Agricola 1545a	Slightly sharp; covering the 6th hole is for stability, no effect on pitch
	○ ● ○ ○ ○ ○	Virgiliano	sharper in pitch than Agricola 1529
	○ ● ● ○ ● ●	Mersenne	The tone is warm, pitch is a little flat, but stable
c \sharp ''	no fingerings survive, but see equivalent bass fingerings for f \sharp '		The surviving fragment of the fingering chart for tenor flute in D indicates that Jambe de Fer provided a fingering for c \sharp '', but the fragment does not preserve the fingering
8 d''	○ ● ● ● ● ●	Agricola 1529, 1545a, 1545b	strong and focussed
	● ● ● ● ● ●	Virgiliano	Closing hole 1 makes no difference to pitch
	○ ◻ ● ● ● ●	Mersenne	
e \flat ''	● ● ● ● ● \emptyset	Agricola 1529, 1545b	Agricola is the only source for E \flat fingering (not in 1545a). Unstable; blow extremely gently and cover half of 6.

	Sounding pitch	Fingering	Source	Comments
9	e''	● ● ● ● ● ○ ☐ ● ● ● ● ● ○	Agricola 1529, 1545a, 1545b Virgiliano Mersenne	
10	f''	● ● ● ● ○ ● ● ● ● ● ○ ● ☐ ● ● ● ● ○ ○	Agricola 1529, 1545a, 1545b Virgiliano Mersenne 1 and 2	This note is too sharp and must be lipped down As for Mersenne f', a bit thin in tone and sharp in pitch
	f#''	● ● ● ● ○ ○ ○	Agricola 1545a	The only source for this fingering, pitch is extremely flat
11	g''	● ● ● ○ ○ ● ● ● ● ○ ○ ○ ● ● ● ○ ○ ○ ☐ ● ● ● ○ ○ ○	Agricola 1529, 1545b Agricola 1545a Virgiliano Mersenne 1 and 2	This note is flat in pitch and somewhat dull in tone, must be lipped up and carefully controlled; covering the 6th hole is for stability and does not affect pitch
	g#''	● ● ○ ● ○ ○ ● ● ∅ ○ ○ ●	Agricola 1529 Agricola 1529	As for g#', Agricola is the only source for g#'' Lower in pitch and less stable
12	a''	● ● ○ ● ● ● ☐ ● ● ● ● ● ●	Agricola 1529, 1545a, 1545b, Virgiliano Mersenne	Much too high in pitch and must be substantially lipped down and blown with a very soft and focussed air stream; no source recommends half-shading hole 3, as is often found in modern fingering charts. Unusual fingering, slightly flat without venting 3
	b, ''	● ○ ● ● ● ● ● ○ ● ● ● ●	Agricola 1529, 1545a, 1545b Virgiliano	
13	b''	● ○ ○ ● ● ●	Agricola 1545a, 1545b	This fingering is consistent in all Agricola's charts. It is too low in pitch, must be blown strongly; is never reproduced in modern fingering charts, but should be considered as a fingering for 1/4 comma mean-tone.

Sounding pitch	Fingering	Source	Comments	
	☐ ○ ○ ● ● ○	Mersenne 1	Slightly sharper, most modern charts use this.	
	☐ ○ ○ ● ● ●	Mersenne 2	Agrees with Agricola (13)	
14	c'''	○ ○ ● ● ● ●	Agricola 1529, 1545b	This is the most stable fingering.
	○ ○ ○ ○ ○ ●	Agricola 1545a	Sharp, closer to c#'''.	
	○ ○ ○ ● ● ●	Virgiliano	Slightly sharp, must be lipped down a bit.	
	○ ○ ○ ☐ ● ○	Mersenne 1	Sharp, must be lipped down.	
	○ ○ ○ ☐ ● ●	Mersenne 2	Slightly sharp, must be lipped down a bit.	
	c#'''	no fingerings in any source		
15	d'''	○ ● ● ● ● ●	Agricola 1529, 1545a, 1545b	strong and stable.
	○ ● ● ● ● ●	Virgiliano		
	○ ☐ ● ○ ● ●	Mersenne 1	Sharp, must be lipped down.	
	○ ☐ ● ● ● ●	Mersenne 2	This is the highest note for <i>fifre</i> .	
	e _b '''	● ● ○ ● ○ ●	Agricola 1529, 1545b	This is the only source, a good stable fingering; e _b ''' often required in seventeenth-century German flute music.
16	e'''	● ● ○ ○ ○ ●	Agricola 1529, 1545a, 1545b	Flat, hole 2 can be vented slightly to raise the pitch.
	● ● ○ ○ ● ○	Virgiliano	Higher and more stable than Agricola	
	☐ ● ○ ○ ● ○	Mersenne 1		
17	f'''	● ○ ○ ○ ○ ●	Agricola 1529, 1545b	A veiled tone, does not speak easily.
	● ○ ○ ○ ● ○	Virgiliano	Slightly higher in pitch, does not speak easily.	
	☐ ○ ○ ○ ● ○	Mersenne 1		
	f#'''	no fingerings in any source		
18	g'''	○ ○ ● ● ● ●	Agricola 1529, 1545b	Overblown from C, must be blown strongly, a crude tone.
	● ○ ● ○ ● ○	Virgiliano	More sweet in tone, and well in tune	
	☐ ● ● ○ ○ ○	Mersenne 1	Overblown from g; must be blown strongly, loud and inflexible in tone.	

	Sounding pitch	Fingering	Source	Comments
19	a'''	○ ● ● ● ● ● ● ●	Agricola 1529, 1545b	A good clear note, must be blown strongly, somewhat sharp.
		○ ● ● ● ● ● ● ●	Virgiliano	
20	b'''	no fingerings in any source		
	b _b '''	● ● ○ ○ ● ●	Agricola 1529	Obtainable by vehement force of air, barely a usable note.
21	c'''	○ ○ ● ○ ● ●	Agricola 1529	Barely obtainable by vehement force of air, not a usable note.
22	d'''	○ ● ● ● ● ● ● ●	Agricola 1529	Overblown from d with much force, but not usable

Bass in G:

	Sounding pitch	Fingering	Source	Comments
1	g	● ● ● ● ● ●	Agricola 1529	Bass in D for transposition up a fifth Bass in C for transposition up a fifth Bass in G for playing at written pitch 'le plus bas ton vent bien doux' (the lowest note, blow very softly)
			Agricola 1545a	
			Agricola 1545b	
		● ● ● ● ● ●	Jambe de Fer	
		● ● ● ● ● ●	Mersenne	
	g#	no fingerings in any source for bass		
2	a	● ● ● ● ● ○	Agricola 1529, 1545a, 1545b	
		● ● ● ● ● ○	Jambe de Fer	
		● ● ● ● ● ○	Mersenne	
	b _b	● ● ● ● ○ ●	Agricola 1529, 1545b	not in 1545a
	● ● ● ● ○ ●	Jambe de Fer		
3	b	● ● ● ● ○ ○	Agricola 1545a	Flat in pitch, must be lipped up.
		● ● ● ● ○ ○	Jambe de Fer	
		● ● ● ● ○ ○	Mersenne	
4	c'	● ● ● ○ ○ ○	Agricola 1529, 1545a	Covering six is for stability and does not affect pitch
		● ● ● ○ ○ ●	Agricola 1545b	
		● ● ● ○ ○ ○	Jambe de Fer	
		● ● ● ○ ○ ○	Mersenne	
	c#'	● ● ○ ○ ● ●	Jambe de Fer	Jambe de Fer is the only source for this bass fingering; must be blown softly and turned inward
5	d'	● ● ○ ○ ○ ○	Agricola 1529, 1545a, 1545b	
		● ● ○ ○ ○ ○	Jambe de Fer	
		● ● ○ ○ ○ ○	Mersenne	
	e _b '	● ○ ● ○ ● ●	Agricola 1529	Slightly flat
	● ○ ● ○ ○ ●	Agricola 1545b		
	● ○ ● ○ ○ ●	Jambe de Fer		

	Sounding pitch	Fingering	Source	Comments
6	e'	● ○ ○ ○ ○ ●	Agricola 1529, 145a, 1545b	Covering 6 is for stability and also makes the tone stronger for this note.
		● ○ ○ ○ ○ ●	Jambe de Fer	
		● ○ ○ ○ ○ ○	Mersenne	
7	f'	○ ○ ● ● ● ●	Agricola 1529, 1545b	aucuns laissant cest luy' (some leave this [6th] finger off)
		○ ● ○ ○ ○ ●	Agricola 1545a	
		○ ● ● ○ ○ ●	Jambe de Fer	
	f#'	○ ○ ○ ○ ○ ●	Agricola 1545a	Covering the 6th hole aids in holding, does not affect pitch.
		○ ○ ○ ○ ○ ●	Jambe de Fer	
		○ ○ ○ ○ ○ ○	Mersenne	
8	g'	○ ● ● ● ● ● ●	Agricola 1529, 1545a, 1545b	The only source of a fingering for g#', must be blown softly and turned in.
		○ ● ● ● ● ● ●	Jambe de Fer	
		○ ● ● ● ● ● ●	Mersenne	
	g#'	● ● ● ● ● ● ∅	Agricola 1529	
	9	a'	● ● ● ● ● ● ○	
● ● ● ● ● ● ○			Jambe de Fer	
● ● ● ● ● ● ○			Mersenne	
b♭'		● ● ● ● ● ○ ●	Agricola 1529, 1545a, 1545b	
		● ● ● ● ● ○ ●	Jambe de Fer	
		10	b'	● ● ● ● ● ○ ○
● ● ● ● ○ ● ∅	Jambe de Fer			
● ● ● ● ● ○ ○	Mersenne			

	Sounding pitch	Fingering	Source	Comments
11	c''	● ● ● ○ ○ ●	Agricola 1529, 1545b	Opening or closing the 6th hole is for stability, and lowers pitch slightly in this octave
		● ● ● ○ ○ ○	Agricola 1545a	
		● ● ● ○ ○ ●	Jambe de Fer	
		● ● ● ○ ○ ○	Mersenne	
	c#''	no fingerings (but see equivalent fingering for tenor g# Agricola 1529)		
12	d''	● ● ○ ● ● ●	Agricola 1529, 1545a, 1545b	Too sharp, must be blown gently and turned in; extremely soft-toned.
		● ● ○ ● ● ●	Jambe de Fer	'Vent doux et bien couvert' (blow softly and well covered).
		● ● ○ ○ ○ ○	Mersenne	This fingering is far too flat and crude in tone, and must be blown strongly; not recommended; not found in other sources until the 1-keyed flute (= a'').
	e, ''	● ○ ● ● ● ●	Agricola 1529, 1545b	Soft-toned in quality, must be blown gently and well focussed.
		● ○ ● ● ● ●	Jambe de Fer	
	13	e''	● ○ ○ ● ● ●	Agricola 1529, 1545a, 1545b
○ ● ○ ● ● ●			Jambe de Fer	Another interesting fingering, still with hole 6 closed; never found in modern charts, Higher in pitch than Agricola, must be blown gently.
● ○ ○ ○ ○ ○			Mersenne	An odd fingering, which is far too flat and must be blown strongly, not recommended; not found until 1-keyed flute charts (b'').
14	f''	○ ○ ● ● ● ●	Agricola 1529, 1545b	Slightly flat, strong and well focussed, bright tone; overblown from c.
		○ ○ ○ ○ ○ ●	Agricola 1545a	Slightly sharp but clear, Agricola is consistent in showing this for all the 1545a charts
		○ ○ ○ ● ● ●	Jambe de Fer	Slightly sharp but clear.
		○ ○ ○ ○ ● ●	Mersenne	Slightly sharp; raising 4 makes no difference in pitch.

	Sounding pitch	Fingering	Source	Comments
	f [#] ''	no fingerings		
15	g''	○ ● ● ● ● ● ●	Agricola 1529,1545b	Raising or lowering 1 makes no appreciable difference to pitch.
		● ● ● ● ● ● ●	Agricola 1545a	
		○ ● ● ○ ● ● ●	Jambe de Fer	Raising 4 vents and softens the tone slightly; a little too sharp, blow gently.
		○ ● ● ● ● ● ●	Mersenne	
	g [#] ''	● ● ○ ● ○ ● ●	Agricola 1529, 1545b	No fingering in 1545a; Jambe de Fer does not give fingerings above g''; air stream must be well focussed or the tone will split, not a reliable note.
16	a''	● ● ○ ○ ● ● ●	Agricola 1529	Flat, airstream must be focussed well; unstable and not reliable
		● ● ○ ○ ○ ● ●	Agricola 1545a, 1545b	Slightly more stable
		● ● ○ ○ ● ● ●	Mersenne	
	b ^b ''	● ○ ○ ○ ○ ● ●	Agricola 1529, 1545b	Only coaxable by shading hole 2; not reliable.
17	b''	● ● ● ● ○ ○ ○	Mersenne	No other source for this fingering, must be blown strongly and well focussed.
18	c'''	○ ○ ● ● ● ● ●	Agricola 1529, 1545b	Must be blown open and strong to make it speak.
		● ● ● ○ ○ ○ ○	Mersenne	Too flat; blow strongly and lip up, a dull tone.
19	d'''	○ ● ● ● ● ● ●	Agricola 1529, 1545b	Overblown from g, must blow strongly, a good loud note.
		● ● ○ ● ● ● ●	Mersenne	Not reliable, splits easily.
20	e ^b '''	● ● ○ ○ ● ● ●	Agricola 1529, 1545b	Not obtainable
21	f'''	○ ○ ● ○ ● ● ●	Agricola 1529	Not obtainable
22	g'''	○ ● ● ● ● ● ●	Agricola 1529	

Soprano in A:

	Sounding pitch	Fingering	Source	Comments
1	a'	● ● ● ● ● ●	Agricola 1529	Soprano in e for transposition up a fourth applies to all 1529 fingerings
		● ● ● ● ● ●	Agricola 1545a	Soprano in d for transposition up a fifth applies to all 1545a fingerings
		● ● ● ● ● ●	Agricola 1545b	Soprano in a for playing at written pitch applies to all 1545b fingerings
	b _b '	● ● ● ● ● ∅	Agricola 1529	Agricola 1529 is the only source for this fingering; blow gently and well focussed.
2	b'	● ● ● ● ● ○	Agricola 1529, 1545a, 1545b	
3	c''	● ● ● ● ○ ●	Agricola 1529, 1545a, 1545b	Sharp, must be blown softly and well covered.
	c [#] ''	● ● ● ● ○ ○	Agricola 1529	Flat, must be lipped up.
4	d''	● ● ● ○ ○ ●	Agricola 1529, 1545b	
		● ● ● ○ ○ ○	Agricola 1545a	
	e _b ''	● ● ∅ ○ ○ ○ ● ● ○ ● ○ ○	Agricola 1529 Agricola 1529	
5	e''	● ● ○ ○ ○ ●	Agricola 1529, 1545a, 1545b	
6	f''	● ○ ● ○ ○ ●	Agricola 1529, 1545b	Slightly sharp
		● ○ ● ● ○ ●	Agricola 1545a	
	f [#] ''	● ○ ○ ○ ○ ●	Agricola 1529, 1545a	Slightly flat
7	g''	○ ○ ● ● ● ●	Agricola 1529, 1545b	Slightly sharp
		○ ● ○ ○ ○ ●	Agricola 1545a	Sweet sounding
	g [#] ''	no fingerings		
8	a''	○ ● ● ● ● ●	Agricola 1529, 1545a, 1545b	

	Sounding pitch	Fingering	Source	Comments
	b ₂ '''	● ● ● ● ● ∅	Agricola 1529, 1545b	
9	b'''	● ● ● ● ● ○	Agricola 1529, 1545a, 1545b	
10	c'''	● ● ● ● ○ ●	Agricola 1529, 1545a, 1545b	
	c ₂ #'''	no fingerings		
11	d'''	● ● ● ○ ○ ●	Agricola 1529, 1545b	
		● ● ● ○ ○ ○	Agricola 1545a	
	e ₂ '''	● ● ∅ ○ ○ ○ ● ● ○ ● ○ ○	Agricola 1529	A good choice, flexible tuning A bit sharp, dull and inflexible for tuning
12	e'''	● ● ○ ● ● ●	Agricola 1529, 1545a, 1545b	Too high in pitch, must be lipped down
13	f'''	● ○ ● ● ● ●	Agricola 1529, 1545a, 1545b	
	f ₂ #'''	● ○ ○ ● ● ●	Agricola 1529, 1545b	Flat, but this fingering is consistent in all Agricola's fingering charts
14	g'''	○ ○ ● ● ● ● ○ ○ ○ ○ ○ ●	Agricola 1529, 1545b Agricola 1545a	Much too sharp, nearly g ₂ #'''
15	a'''	○ ● ● ● ● ●	Agricola 1529, 1545a, 1545b	
	b ₂ '''	● ● ○ ● ○ ●	Agricola 1529, 1545b	
16	b'''	● ● ○ ○ ○ ●	Agricola 1545a, 1545b	Flat in pitch; no fingering in 1529
17	c ₂ '''	● ○ ○ ○ ○ ● ● ● ○ ○ ○ ●	Agricola 1529, 1545a Agricola 1545b	must be a mistake, same fingering as b'''

	Sounding pitch	Fingering	Source	Comments
	c#'''	no fingerings		
18	d'''	○ ○ ● ● ● ●	Agricola 1529, 1545a, 1545b	Must be blown very strongly. Loud and crude.
19	e'''	○ ● ● ● ● ●	Agricola 1529, 1545b	Not obtainable.
20	f'''	● ● ○ ○ ● ●	Agricola 1529, 1545b	Not obtainable.
21	g'''	○ ○ ● ○ ● ●	Agricola 1529	Not obtainable.
22	a'''	○ ● ● ● ● ●	Agricola 1529	Not obtainable.

Chapter 4.5

The Embouchure

Unlike other winds, which have a reed or mouthpiece, the flute forms its sound solely through the air passing through the player's lips and impinging on the edge of the mouth hole. The lips control the emission of air and guide the air-stream. Their size and shape exert a strong influence on the formation of the embouchure; whether the lips are thick or thin, the teeth small or large, the chin and jaw are even or have an under- or over-bite. Thus no two players have precisely the same tone quality.

The formation of the embouchure and the management of the airstream are linked together inseparably, and must be considered together in a discussion of tone production. The flute embouchure is not formed, as some mistakenly believe, by making an opening in the lips and then blowing through it. With this technique, often seen in use by amateur players, the opening is invariably too large and the lips are held too rigidly. This results in a breathy, inflexible and uncontrolled tone. Rather, it is the airstream itself which forms the aperture in the lips, as it passes from the mouth. The resistance in the lip muscles determines the amount of air and the size of the opening which is formed by the air stream. The middle of the lips must remain soft and pliable in order to guide the subtle changes of speed and direction of air which are vital for controlling tone quality and intonation. The lips and the airstream must work together, and flexibility is paramount.

The size and shape of the mouth hole also influence the sound and dynamic range. On Renaissance flutes the mouth-hole opening is round and small; a diameter of 8-8.5 mm is quite consistent on surviving Renaissance tenor instruments – Baroque flute mouth-holes are also round but larger (see Ch. 1.3). In the late eighteenth century the shape changed from round to elliptical, and was made a bit larger, to increase the volume. In the nineteenth century, when a more powerful sound was sought, mouth holes became increasingly larger. Nicholson's 'improved' flute of *ca.* 1822 had a very large oval mouth-hole measuring about 12 mm by 11 mm, and other English flutes, notably those by Rudall and Rose, adopted this pattern.¹ The German flute maker Theobald Boehm introduced the square embouchure still current on modern flutes (see Ill. 4.5.1). All of these sizes and shapes dictated different approaches to lip formation and amounts of tension and air.

¹ As described by Richard Rockstro, *A Treatise on the Flute* (London, 1890, 2nd ed. 1928, rpt. 1967), 287-290; Rockstro cited the measurements as .48 x .43 inches.



Ill. 4.5.1. Theobald Boehm, Munich, flute, 1840s; Washington, D. C., Library of Congress, Dayton C. Miller Collection (Miller 974).

On the Renaissance flute, in order to direct the air precisely to the small mouth hole the lips must be joined firmly together, with slight muscle tension at the corners of the mouth and a very small lip aperture and well-focussed airstream. Note the tension and small aperture around the mouth and chin of the boy in Ill. 4.5.2.



Ill. 4.5.2. Hendrick ter Brugghen (1588-1629), *The Concert*.

Only two sixteenth-century writers, Martin Agricola and Philibert Jambe de Fer, attempted to explain the formation of an embouchure and the accompanying use of breath. Agricola (MID 1529) wrote:

Aber das blasen hat ein ander art
 Wie die figur zcygen zu disser fart.
 Die untersten achte ganz messig blas (von D zu D)
 Die andern sieben etwas schneller las. (von E zu d)
 Die nechsten vier begeren ein schnellern wind (e f g aa)
 Die obirsten in gehen ganz geschwind. (bb cc dd)

... The technique of blowing to make the flute sound is a different matter. Now all this is found in the charts, which show well that the first eight notes need only moderate breath; then you increase your speed for the seven that follow, and then the next four somewhat faster, and then the top three even more.²

Agricola did not follow up his observations with further discussion, but the ‘different matter’ stated in his opening sentence is surely that the flute is the only wind instrument which does not have a mouthpiece or reed which determines the sound of the instrument. The charts which Agricola referred to are the fingering charts, which include instructions for blowing each octave (see the discussion in Ch. 4.4 and the original fingering charts in App. 1).

Philibert Jambe de Fer, in his *Epitome Musicale*, 1556, acknowledged the difficulty of giving sufficient written explanations on the subject of the embouchure. Nevertheless, he attempted to discuss it in more detail than Agricola. In the instructions below, he emphasized putting the flute ‘exactly in the middle of the lower lip’ and using a soft, moderate breath as the basis for good tone. Like Agricola, Jambe de Fer advised strengthening the air for ascending, lessening the air little by little in descending.

L’Emboucheure

Quand à l’emboucheure de cesdicte fleute d’Alleman, il est bien difficile d’en donner bonne et suffisante raison, toutes fois je vous en diray mon opinion en deux petitz motz, à celle fin que ne m’accusiez de paresse. Il faut donc prendre l’adresse, et l’ardiesse de mettre ladicte fleuste justement au milieu de la levre dessoubz, avec un vent doux, et moderé, l’augmétant en force, petit à petit pour monter, et pour descendre il la faut faindre de peu à peu selon l’assiete de la Musique sans crainte de faire la moue.

The embouchure

When speaking of the embouchure on the German flute, it is very difficult to give a good and sufficient discussion, all the same, I will tell you my opinion, briefly, so that you do not accuse me of laziness [incompleteness?]. It is necessary, then, to use dexterity and boldness, to put the flute exactly in the middle of the lower lip, with a soft and moderated breath, augmenting it in strength little by little for ascending, and for descending it is necessary to drop it little by little according to the position of the note, without fear of pouting.³

² Agricola 1529, fol 12r, 1545 fol. 24r; trans. Hettrick *AR*, 21, 110.

³ Jambe de Fer, *EpM*, 59.

Jambe de Fer's choice of the words *l'adresse* (dexterity) and *l'ardiesse* (boldness) to describe the necessary techniques for forming a good embouchure are at first reading obscure, but these words echo the earlier and more eloquent explanations of the Venetian recorder virtuoso and teacher Sylvestro Ganassi (b. 1492), who used these same terms and clarified their meaning in his recorder treatise *Fontegara* (Venice 1535). He defined 'boldness' (It. *ardito*), as one of the 'chief attributes' of the human voice, and one which all instruments should endeavour to imitate:

You can imitate the expression of the human voice on a wind or a stringed instrument. The painter reproduces the works of nature in varied colours because these colours exist in nature. Even so with the human voice, which varies the sound with more or less boldness according to what it wishes to express.⁴

'Dexterity (It. *prontezza*) in the manner of breathing' is described by Ganassi as one of the fundamental requirements of the 'true art of recorder playing'.⁵ To acquire *prontezza*, or dexterity, he points out that one must adopt 'a manner of breathing which produces the greatest variety of contrast', necessary for 'extremes of expression', blowing sometimes gently and other times with a 'very strong flow' of breath.

Boldness and dexterity are vital techniques for achieving contrast and variety of tone, expression and dynamics. Ganassi made it clear that for the recorder player these techniques depend on the manipulation of the breath flow. But on the recorder if one blows stronger or weaker the tuning is affected. The breath flow cannot be controlled directly by the embouchure as it can be on the flute, but must be changed by a combination of breath and finger hole shading – or different fingerings entirely – to alter the tone quality, dynamics and tuning.

On the Renaissance flute embouchure and breath work together to achieve tonal and expressive contrast. Variations in the strength and speed of the air stream are controlled directly by changing the size, shape and position of the lips. These changes affect the tone colour, dynamics, intonation and phrasing. The aperture must change in response to changes in air supply and register; when the thread of the breath stream is gently increased in strength for ascending, the direction of the air must also change – and the lower lip must move forward to cover more of the embouchure hole. When descending, the lower lip recedes, and the embouchure hole is more open.⁶

⁴ Sylvestro Ganassi, *La Fontegara* (Venice, 1535), trans. Hildemarie Peter (Berlin, 1956), 9.

⁵ Ganassi, trans. Peter (Berlin, 1956), 87.

⁶ Quantz, in 1752, describes this technique for the Baroque flute with a diagram showing the relative opening of the embouchure hole, about $\frac{3}{4}$ open for low notes, $\frac{1}{2}$ open for the middle register, and $\frac{3}{4}$

The manipulation of the embouchure forward and backward is no doubt what Jambe de Fer meant in his reference to blowing ‘without fear of pouting’, meant to remind the reader of the mythological story of the Greek goddess Athena, a story well-known in Renaissance humanist circles. As told in the sixteenth century, Athena was the first to discover the ‘flute’.⁷ But because the Olympians laughed at her when she blew out her cheeks and pursed her lips, she threw it away and pronounced a curse on any person who picked it up and played it.

According to Plutarch (*ca.* 46-120), when Alcibiades (d. 404 B.C.E.) began to study, he obeyed all his other masters fairly well, but refused to learn upon the ‘flute’, a ‘sordid thing, and not becoming a free citizen’ and because ‘playing the flute of Athena causes facial distortion which causes one hardly to be known by one’s most intimate friends’.⁸ Plutarch went on to say that Alcibiades preferred to learn stringed instruments, because:

Playing a wind instrument stops one from speaking or singing, which one can do while playing a stringed instrument. Wind instruments stop the mouth, intercept the voice, and prevent all articulation. Let the Theban youths pipe, who do not know how to speak, but we Athenians, as our ancestors have told us, have Minerva [Athena] for our patroness, and Apollo for our protector, one of whom threw away the flute, and the other stripped the flute-player [Marsyas] of his skin. Thus, between raillery and good earnest, Alcibiades kept not only himself but others from learning to play the flute, as it presently became the talk of the young boys, how Alcibiades despised playing it, and ridiculed those who studied it. In consequence of which, it ceased to be reckoned amongst the liberal accomplishments, and became generally neglected.⁹

Classical stories such as this were well-known in Renaissance humanist circles, where emulation of the Greeks was of paramount importance. In numerous Renaissance paintings of the famous musical duel between the string-playing Apollo and the wind-playing Marsyas, to

closed for the upper notes; although the Baroque flute embouchure hole is bigger, the principle is the same as for the Renaissance flute.

⁷ The instrument which Athena originally discovered was not a ‘flute’ at all; in classical Greek mythology it was the reed instrument, αὐλός, or ‘aulos’. The term ‘flute’ was used throughout the Renaissance in translations of the myth, however, and in paintings of Athena her instrument is invariably depicted as a transverse flute or recorder. For a discussion of the transmission, re-integration and translation of Greek myths in Renaissance art, manuals and dictionaries, see Jean Seznec, *The Survival of the Pagan Gods: The Mythological Tradition and its Place in Renaissance Humanism and Art* (New York, 1953), especially ‘The Science of Mythology in the Sixteenth Century’, 219-256.

⁸ *Plutarch’s Lives*, ed. Arthur Hugh Clough (New York, 2001), ‘Alcibiades’, 258-9.

⁹ *Plutarch’s Lives*, ed. Clough (Boston, MA, 1890), ‘Alcibiades’, 259.

which Plutarch made a fleeting reference, Apollo is nearly always depicted with a *lira da braccio*, while the mortal Marsyas played a variety of wind instruments, including pan-pipes, bagpipes, recorder, and transverse flute.¹⁰ Marsyas lost the musical contest and was flayed alive for his trouble.

The Athena myth caused particular prejudice against playing flutes and recorders at the Italian court of Isabella d'Este, the musical patroness of Mantua, who makes clear her disdain for wind instruments in her response to a letter dated 3 August, 1497 from her instrument-maker, Lorenzo da Pavia.¹¹ Lorenzo describes a beautiful piece of bone which had come into his possession, and which he proposed to make into a *fiauto* (likely a recorder):

It is as white as ivory, and one could make a lovely flute (*fiauto*), from it. It has a beautiful shape and is two and a half *quarte* long (about 28 cm), and two fingers wide, and I am holding it for your Ladyship's command.

Isabella answered him on 11 August:

Concerning that bone, don't drive us mad with talk about flutes (*fiautti*); we don't want it.

A preference for strings over winds is echoed by the Italian court chronicler of manners, Baldasar Castiglione (1478-1529), whose book of court etiquette *Il Corteggiano*, written in Urbino *ca.* 1507, published in Venice 1528, and translated into English in 1588, paraphrases Plutarch in extolling the virtues of singing to the accompaniment of stringed instruments and avoiding 'those that Minerva [Athena] and Alcibiades refused':

All Instrumentes with freats are full of harmony, because the tunes of them are very perfect, and with ease a man may doe many things upon them that fill the mind with sweetnesse of musicke ... without medling much with the instruments that Minerva and Alcibiades refused, because it seemeth they are noisome [ungraceful].¹²

¹⁰ For a detailed study of the Apollo and Marsyas myth, see Edith Wyss, *The Myth of Apollo and Marsyas in the Art of the Italian Renaissance: An Inquiry into the Meaning of Images* (Newark, DE, 1996).

¹¹ The letters are translated in William F. Prizer, 'Isabella d'Este and Lorenzo da Pavia', *Studies in Music History*, 2 (1982), 113.

¹² Baldassare Castiglione, *The Book of the Courtier*, trans. Thomas Hoby (London, 1588; rpt. 1948), 101.

Outside Italy the Athena myth was also known, but it did not engender the same prejudice against flute playing. Transverse flutes were often portrayed by Dutch, French and German artists being played by female flautists, in obvious reference to Athena. In *Allegory of Music* by the Dutch painter Dirke de Quade von Ravestejn (1589-1608) the female flautist looks anxiously into a mirror at her exaggerated red lips ‘pouting’ over the mouth-hole, surely an allusion to the Athena myth (Ill. 4.3.2).

The elegantly dressed female flautist in Ill. 4.5.3, with her exaggerated pouting lips, comes from a series of wood-cuts of female musicians published in Strasbourg (1578), attributed to the Swiss artist Tobias Stimmer (1539-1584). Rhymed couplets by Johann Fischart (1545-1590) accompany the picture and leave no doubt about the mythical association of this flute-playing female to Athena. Fischart dismisses the prejudice towards Athena (Minerva), praising the versatility and refinement of the transverse flute.



Ill. 4.5.3. Tobias Stimmer, *Minerva*, woodcut, Strasbourg, 1578.

Wiewol Minerve gar missfalle die Pfeiff

Weil sie den mund verstell:

Soll man sich doch nicht ärgen fon

Dan sie red wie ein Weib dar von:

Und vil mehr auf Peten geben

Die solche Pfeif gar hoch erheben

Weil sie ihn der Nature bestehet

Und auch zu allen Spilen gehet.

Die Zwerchpfeif erstlich Midas macht

Although Minerva is displeased with
pipes

because they distort her mouth,

one should not pay her heed,

it is just her woman's chatter:

Listen rather to the poets,

who highly praise this pipe

because it holds its own outdoors

And also goes well in any ensemble.

The transverse flute was first crudely
made by Midas

Nur auss Krauchbeinen ungeschlacht:	from the bones of cranes,
Die man darnach macht auss den Roren	later they were made from reeds,
Heut kan man sie zum schönsten boren.	Today they are very finely bored. ¹³

Developing the Embouchure

No sixteenth-century writer explained how the embouchure works, or its crucial relationship to the air stream, nor did they offer any advice about how to develop the symbiotic relationship of air and lips. Without control over this fundamental aspect of flute playing there is no hope of influencing the tone quality, dynamics, tuning, phrasing and articulation on the flute. In the absence of original descriptions, a few of my own thoughts and exercises are suggested below which may help (bearing in mind the difficulty of describing in words such a technique of great complexity and elusiveness).

Start the air by pronouncing a gentle ‘p’ with the lips closed gently together. The breath should push the lips open from the inside outward, keeping enough resistance in the lips to allow a thread of air to pass through, without strain or restriction of the lips. The lips should feel supple and relaxed in the middle. Then bring the flute to your lips, with the edge of the mouth hole on the middle of the lower lip, and start the air again, using the above technique. Do not force any air into the flute, or the tone will be breathy and lacking in nuance – the primary feeling should be that the airstream is retained behind the lips and in the mouth and cheeks, with no need to expel it artificially. Aim for a sound which is clear, vibrant and singing and above all, completely focussed.

Raising and lowering the direction of the airstream by tightening the lips and pushing the jaw forward and back was also a recognized technique for controlling the sound. The action of the jaw and lips results in slightly covering or uncovering the embouchure hole with the lower lip. This technique must be developed in order to find the sound in each octave and to achieve flexible intonation and dynamics. Jambe de Fer alluded to this technique briefly in the bass fingering chart, where he wrote ‘vent doux et bien couvert’ for the lowest note, G, but he did not explain how or why to do it. Quantz described the technique in more detail in his *Versuch* (1752) for Baroque flute. His advice is useful for the Renaissance flute as well:

I wish now to give a general rule for how much you must withdraw or advance your chin and lips in each octave. Examine the drawing of the mouth hole ...

¹³ The poem is translated by Ardal Powell, *The Flute* (New Haven and London, 2002), 3; see also Jan LaRue and Jeanette B. Holland, ‘Stimmer’s Women Musicians: A Unique Series of Woodcuts’, Unity Sherrington and Guy Oldham, eds., *Music Libraries and Instruments: Papers Read at the Joint Congress, 1959, of the International Association of Music Libraries and the Galpin Society* (London, 1961), 261-8, 266. The print is in USA: Nyp: Bartsch 37-45.

In it you will discover four horizontal lines. The second line from the bottom indicates the middle [covering half the embouchure hole], and how much of the hole must be covered for d". The lowest line shows how far both lips must be drawn back to produce d' [covering only one quarter of the embouchure hole] ... If you wish now to begin to form your embouchure, and have placed the flute to your lips so that the mouth hole is covered half-way, you must blow in this position without placing the fingers upon the holes, using the same embouchure until the lower lip becomes weary ... and can produce the note immediately and without great difficulty; d" is sounded in this fashion. Next play the descending notes in the first octave down to d', drawing the lips back, together with the chin, to the lowest line, in the proportion indicated [in the drawing] above. Then reverse the procedure and play the same notes in their ascending order up to d", pushing the lips and chin forwards just as they were earlier drawn back. Continue this exercise until you can produce all these notes surely one after the other.¹⁴

¹⁴ Quantz, *Versuch* (1752), trans. Reilly, 52-3; for more of Quantz's advice on the formation and exercise of the embouchure, see chapter 4, 'Of the Embouchure', 49-59.

Chapter 4.6

Breath and Sound

Introduction

The sound of the Renaissance flute is clear, limpid, and remote, akin to a sweet and focussed soprano voice. The simple but sophisticated design, with its thin walls and tapering external bore unencumbered by key-work, allows the player to achieve remarkable delicacy and ‘immediacy’ of sound, and control over the dynamics and intonation, particularly in the ‘celestial’ ranges of the second and third octaves. These features are noticeable on original instruments, particularly those of the AFV, but still rare in modern copies, many of which have walls too thick, embouchure holes too large, and finger-holes with too little undercutting, resulting in flutes that sound grand in the ‘earth-bound’ first octave but are dull, coarse, and unyielding in the upper octaves. The breath is the single most important element of flute playing. It is also, frustratingly, the aspect of technique which was least addressed in instruction books for the flute, perhaps because it was also the most subjective and difficult to put into words. Other avenues of historical inquiry, though not directly about the flute, nevertheless offer insights into the elusive subjects of breath and sound, and offer inspiration and ideas for the sound of a flute. Several areas will be explored in this chapter, including poetic recitation, singing techniques, which were the model on which instrumentalists based their concepts of sound and delivery, and the flute stops on early organs.

Instructions for the Use of Breath

The treatises by Agricola and Jambe de Fer are the only ones which give instructions about blowing. Agricola’s advice consists of brief annotations on the fingering charts which indicate how much air to use for each octave: blowing the lowest notes with ‘moderate’ (*mediocre*) breath, then blowing faster and faster to ascend through the twenty-two notes he optimistically gave for its range (see Ch. 4.4). Agricola is the only writer to point out that the flute is played with a breath vibrato, which he calls ‘zitterndem winde’ (trembling breath). This seems very clear advice, and yet it is ignored by most modern players (for discussion of this technique and some historic evidence for its use, see below).

Jambe de Fer *EpM* (1556) offers more sophisticated instructions involving breath and embouchure adjustments for certain difficult notes, which show that he was well acquainted with particular problems on the bass flute. As in Agricola, instructions for managing the breath are attached to the fingering chart. At the bottom of the page under the left-hand-column

(marked ‘par le chant de #’, or, *cantus durus*), is the instruction: ‘Le plus bas ton, vent bien doux’ (for the lowest note, blow very softly). Under the right-hand column (*cantus mollis*) is the same instruction: ‘vent bien doux par le chant de b.mol.le plus bas ton’ (blow very softly, in *cantus mollis*, for the lowest note).

Two more instructions for blowing are in the chart itself. Under the fingering for d^{''}, fingered ●●○ ●●●, is written: ‘vent doux et bien couvert’ (blow softly and well covered). Above the fingering for e^{''} (but clearly meant for e^{b''} ●○● ●●● in the right-hand *mollis* column) is written: ‘feinte de b, vent bien doux’ (for the flat, blow very softly).¹ These notes require a gentle breath to bring them down to pitch, but along with reducing and concentrating the airstream, the aperture must be made quite small and the breath must be carefully guided to achieve a sound which is not only delicate, but also focused and full of colour.

Jambe de Fer’s advice for d^{''} shows that he recognized its particular difficulty. But his rather vague instruction to blow ‘softly and well covered’ requires a bit more explanation. This note is consistently sharp in pitch and the tone is difficult to control on all Renaissance flutes. It is produced as the second partial of the overblown fundamental (D on a tenor), and can be sounded (crudely) without venting the third hole at all. Opening the third hole, as Jambe de Fer shows, allows the tone to resonate more freely and delicately, but a better sound can be achieved when this is aided by the direction and speed of the air. I believe that Jambe de Fer surely meant that the breath must be soft and concentrated and the lower lip must cover the embouchure hole slightly more than normal, to bring the sound and pitch under control.² By using this rather advanced technique, a skilled player can search for and find a note which sings beautifully and delicately, and is stable and in tune.

It is worth noting that some unenlightened makers and players use a half-shaded fingering of ●●ø ●●●, in place of using the fingering and embouchure techniques recommended by Jambe de Fer. I do not recommend it. Although half-shading was a valid technique described by Zacconi and others for emergency tuning, it should be used sparingly, because it is a clumsy way to manipulate the tuning, and it makes the tone unstable and blurred. It is significant that no early fingering charts suggest half-covering the third finger-hole for this note (Agricola does suggest an alternate half-covered fingering for the rarely used G[#], and a half-shaded sixth hole for E^b on the tenor, which is the only way, and not a very satisfactory one, to find this note at all. Jambe de Fer’s fingering for B on the bass – a note similarly rare in *cantus mollis* – includes a half-shaded sixth-hole, proving that he was not averse to this technique, but chose not to use it for d^{''}. On the flute, the tenor a^{''} / bass d^{''} is prominent and frequently used, and needs to sound well. In all situations, manipulating the breath and embouchure provide a more subtle and efficient technique than finger-hole shading

¹ Fingerings for e['] and e^{b'} are also reversed in Jambe de Fer’s fingering chart (see App. 1).

² The first to explain the mechanics of this embouchure technique was Quantz, *Versuch* (1752), Ch. 4.11; see Ch. 4.5 of this thesis for discussion of his instructions.

for controlling the sound and intonation.

Singing as a Model for Sound

Apart from those few blowing instructions attached to the fingering charts, there is scant information about the techniques and aesthetics of tone production on the flute in sixteenth-century sources. Instrumentalists looked to singers and vocal techniques as a model for their playing. A fruitful example of this is the opening chapter of Sylvestro Ganassi's recorder treatise, *Fontegara*, which encouraged recorder players to imitate the breath and words of singers:

& si il dipintore imita li effetti de natura con uarii colori lo instrumento imitera il proferir della humana voce con la proportion del fiato & offuscation della lingua con lo agiuto de deti & di questo ne o fatto esperientia & audito da altri sonatori farsi intendere con il suo sonar le parole di essa cosa che si poteva ben dire a quello instrumento non mancarli altro che la forma dil corpo humano si come si dice ala pintura ben fatta non mancarli iolum il fiato: si che haveti a essere certi del suo termine per dite rason de poter imitar il parlar.

And if the painter imitates the effects of nature with various colors, the Instrument imitates the utterance of the human voice with the intensity of the breath and the attack of the tongue with the help of the fingers. And I have had experience of this and heard other instrumentalists arrive at making words heard with their playing, so one could well say that nothing is lacking for these instruments except the form of the human body, as one says of a well-made painting that nothing is lacking but the breath. You can, therefore, be certain that your goal, for the reason mentioned above, is to be able to imitate speech.³

His advice to shape with the breath and tongue 'helped by the fingers' is necessary here, since the recorder lacks a lip-controlled embouchure to help shade the tone and tuning. On the Renaissance flute however, one can achieve subtle shading and tuning by using the lips in combination with the breath.

In order to follow Ganassi's advice to imitate the human voice we must first ask how singers sang. What were the important expressive techniques for singers in the sixteenth century? What were the sounds to which they aspired? How did they use the breath, cited by

³ Sylvestro Ganassi, *Fontegara* (Venice 1535) ed. Peter (Berlin, 1959), 9.

Ganassi as the most important element of expression for both singers and wind players? Sources for singers – which are most plentiful from Italy – provide information about vocal breath techniques, along with important expressive ornaments dependent on breath, such as the *messa di voce* and *tremolo*, techniques which also relate to playing the transverse flute.

Several Italian humanist documents discuss poetic recitation and the related art of singing. These documents extol classical Aristotelian concepts, whereby the transmission of energy from singer to listener reaches the soul via the breath.

Marsilio Ficino's *De vita coelitus comparanda* (Florence, 1489) expounded on this:

Remember that song is the most powerful imitator of all things, for it imitates the intentions and affections of the soul and speech... the matter of song is warm air and breathing... musically moved air is alive, like a disembodied human spiritus.⁴

The Florentine academician Giovanni Del Bene, writing around 1575, prized both music and poetry, which ‘have in common the power to alter the mind and soul’ (as Claude Palisca puts it):

... et id il verso, il quale e opinione che sia il parlare delli dei exprimere inoltre concerti et imitare gli affetti et i costumi altrui, e delectare et giovare l’uno laltro per questa cosi piacevole et bella arte.

... through verse, which is thought to be the speech of the gods, to express, besides, ideas and to imitate the affections and mores of others, and to delight and profit one another through this so pleasing and beautiful art.⁵

Girolamo Mei's *Della compositura delle parole*, written ca. 1540, explained the delivery of Tuscan speech, in which pitch patterns arise from ‘acute’ or accented syllables and ‘grave’ or unaccented syllables. Most words have a single acute accent, some have none, and some have both acute and grave accents. The height of pitch in each word is generated by ‘the climax of the impulse of the breath that is emitted in a single thrust when pronouncing a word.’⁶ Thus the force with which the breath is expelled determines whether its pitch is acute or grave. Within a single word the breath pressure reaches a climax where the acute accent falls. Acute and grave accents are alternated in an organized way in poetry. Taking a well-known

⁴ See D. P. Walker, ‘Ficino’s Spiritus and Music,’ *Annales musicologiques*, 1 (1953), 131-50.

⁵ Giovanni Del Bene, discourse ‘Del conuiuio delli Alterati,’ I: Fn: MS Magi. IX.137, ff. 12r-22r, ca. 1575; text and English trans. in Claude Palisca, *Humanism in Italian Renaissance Musical Thought* (New Haven and London, 1985), 338.

⁶ Palisca, *Humanism*, 349.

example, the text ‘Ancor che col partire’ by Alfonso d’Avalos, we can see how this works. I have underlined the acute accents, as this seems to be the first step towards finding a breath-related musical approach for declaiming the poem.

Ancor che col <u>partire</u>	Although in parting,
io mi <u>sento morire</u> ,	I feel myself dying,
<u>Partir</u> vorrei ogn’ <u>hor</u> , ogni <u>momento</u> .	I would part every hour, every moment,
<u>Tanto</u> e il <u>piacer</u> ch’io <u>sento</u>	So great is the pleasure that I feel
De la <u>vita</u> ch’ <u>acquisto</u> nel <u>ritorno</u> ;	In the life I gain on my return;
E cosi <u>mille</u> e <u>mille</u> volt’ <u>il giorno</u> ,	And so thousands and thousands of times a
<u>Partir</u> da voi <u>vorrei</u> ,	day
<u>tanto</u> son <u>dolci</u> gli <u>ritorni</u> miei.	I would part from you,
	So sweet are my returnings

I suggest that it is both the taking of the breath and the journey it makes during the word or phrase that Mei was keen to describe. He believed, as Giovan Pietro Capriano was to put it more succinctly fifteen years later, that the voice or an instrument could touch ‘every note of the keyboard of the soul’:

Nasce questa forza maggior’ e’ dello spirito dalla virtu natural’ de musicali e’ altri strumenti che v’intervengono. i quali nello spignier io fuora io violentano hor piu e’hor’ meno, secondo l’arbitrio e’ disegno delta volonta, che comanda loro. quasi toccando i fasti naturali delle corde, o’aprendo i pertugi del flauto.

This major force of the spirit [i.e., breath] is born of the natural power of musical and other instruments that are involved. These in pressing the spirit out now with more, now with less violence, according to the choice and design of the will that commands them, as if touching the natural frets of the strings, or opening the finger-holes of the recorder.⁷

Mei and Capriano’s descriptions of the ‘impulse of air in a single thrust’ ‘pressing ... now with more, now with less violence’ for giving shape and meaning to the words are very like Ganassi’s advice to wind players to ‘increase and lessen the flow of breath in imitation of the nature of the words’. Mei further described singing as ‘heightened speech’, the poetic delivery of which should be in ‘a manner between fluent speech and [the normal delivery of] song’. This ideal is familiar to us from the Florentine monodists of the early seventeenth century, but it

⁷ Capriano, *Della vera poetica libra uno* (Venice, 1555), quoted in Palisca, *Humanism*, 354.

is clear that these ideas existed well before Caccini wrote *Le nuove musiche* in 1602. In the fifteenth century, the practice of heightening the expression of the declamation of poetry by singing it to the accompaniment of a lute or *lira* was already championed by the poet-improvisors.

How, then, did singers mirror the inflections of speech? I believe that if one transfers the breath techniques as described by Mei to singing or to playing on an instrument it produces small crescendos and decrescendos on accented syllables and long notes, making fluid shapes within the longer phrase, with much rising and falling in short dynamic bursts, corresponding to the inflections of speech. A performance of Cipriano de Rore's skilled and sympathetic madrigal setting of Alfonso d'Avalos's 'Ancor che col partire' invites such an interpretation. With its primarily syllabic declamation, the rhythms of the music echo the rhythms and accents of the words. It is a revelation to speak the text to the rhythms of de Rore's music: emotionally evocative words such as 'vita', 'ritorni' 'morire' are emphasized with long-held notes, often going across the beat; a sense of urgency is achieved with faster note values and dotted rhythms, for example, 'e cosi mille mille volt' il giorno'; and always the word accents, breath accents, pauses and syncopations swirl around the text in perfect symbiosis with the poem (Ex. 4.6.1).

Superius

An - chor — che col par - ti - re Io mi sen - ta

6 mo - ri - re Par - tir vor - rei o - gn'hor, o - gni mo - men - to: Tan - t'è il pia -

11 cer ch'io sen - to, Tan - t'è il pia - cer ch'io sen - to De la vi - - ta ch'è -

16 qui - sto nel ri - tor - - - no. E co - si mil - l'e mil - le vol - t'il gior -

21 no, mil - l'e mil - le vol - t'il gior - no Par - tir da voi vor - re - i: —

27 Tan - to son dol - ci gli ri - tor - - - ni mie - i. E co - si

32 mil - l'e mil - le vol - t'il gior - no, mil - l'e mil - le vol - t'il gior - no Par - tir da voi vor - re - i: —

37 — Tan - to son dol - ci gli ri - tor - ni — mic - i. —

Ex. 4.6.1. Cipriano de Rore, 'Ancor che col partire', superius part.

Dynamics and the *Messa di Voce*

Dynamic control over individual notes and phrases is described in vocal and instrumental treatises throughout the Renaissance and early Baroque periods. By the early seventeenth century, the technique of crescendo and diminuendo, known as the *messa di voce*, was one of the most important expressive devices developed by singers for shaping the melodies that clothed the words. The concept of *messa di voce*, first described as a musical ornament by Giulio Caccini in his preface to *Le nuove musiche* in 1601,⁸ developed naturally from the speaking breath impulses described by Mei and others for declamation of Tuscan poetry. It transferred directly from singing to instrumental practice as an expressive device ‘to make the words heard,’ so highly prized by Ganassi for playing vocal music on instruments.

Francesco Rognoni in his *Selva de Varii Passaggi: Parte Prima* (Milan, 1620) elaborated further on the use of the *messa di voce*, describing the diminishing and increasing of the voice as a vital component in the performance of *esclamazioni* (Ex. 4.6.2):

L’*Esclamationi* si fanno net discendere scemando a poco a poco la prima voce, e poi dando spirito, e vivacita alla nota che segue con un tremolino.

The *esclamazioni* are made on descending [figures], gradually diminishing the first note, and then giving spirit and liveliness to the note which follows by a small *tremolo*.⁹



Ex. 4.6.2. Francesco Rognoni, notated examples of *esclamazioni*.

The Vocal *Tremolo*

The *tremolo* that Rognoni described in both textual and musical examples seems to be a

⁸ Giulio Caccini, *Le nuove musiche* (Florence, 1601/R 1934), ed. Wiley Hitchcock, RRMBE, 9 (1970).

⁹ Francesco Rognoni, *Selva de varii passaggi: parte prima* (Milan, 1620); facs. [Bologna, 1983], *Avvertimenti*.

rhythmic and slow vibration of the air: in other words, a breath vibrato. But he cautioned against using *tremolo* too much:

Il tremolo si fa sovente, ma pero con gratia, et si deve guardare di non farlo come fanno alcuni senza termine, che parono Capretti; per il piu il Tremolo si fa sopra il valor del ponto di ciascuna nota.

The *tremolo* is made often, but with grace, and you must guard against making it as some do, without end, sounding like baby goats; for the most part the *tremolo* is made according to the dot of each note.¹⁰

His notated examples indicate that *tremolo* should be applied for around half the value of a long note, decorating the beginning or the middle of the note (see Ex. 4.6.3).

Ex. 4.6.3. Francesco Rognoni, notated examples of *tremolo*.

Rognoni's was not the only reference to singing with *tremolo*, or vibrato. Ludovico Zacconi, *Prattica di musica* (Venice, 1592) wrote:

Dico ancora, che il tremolo, do e la voce tremante e la vera porta d'intrar dentro a passaggi.... Questo tremolo deve essere succinto et vago; perche l'ingordo, et forzato tedia, et fastidisce.

I say that the *tremolo* – that is, the trembling voice – is the true gate to enter

¹⁰ Rognoni, *Avvertimenti*.

passaggi ... the *tremolo* should be slight and pleasing; for if it is exaggerated and forced, it tires and bores.¹¹

Michael Praetorius, *Syntagma Musicum III* (1619) voiced this opinion:

... ein Sanger erstlich eine schone liebliche zittern und benende stimme....
Tremulo: ist nichts anders als ein zittern der Stimme uber elner noten.

First a singer must have a pleasantly vibrating voice ... the *tremolo* is nothing other than a trembling of the voice on one note.¹²

But Christoph Bernhard, *Vonder Singe-Kunst oder Manier* (ca. 1649), was of another opinion:

Das fermo oder Festhalten der Stimme, wird bei alien Noten erfordert, ausgenommen, wo das *trillo* Oder *ardire* gebraucht wird, und insonderheit die Zierde des fermo ist daraus zu verstehen, weil das tremulo (welches sonst auf der Orgel, in welcher alle Stimmen zugleich tremulieren konnen, wegen der Veranderung wohl lautet) ein vitium ist, welches bey den alten Sängern nicht als ein Kunst angebracht wird, sondern sich selbst einschleicht, weilselbige nicht mehr die Stimme festzuhalten vermogen. Wer aber mehr ZeugniK begehret von Obelstande des tremulo, der hore einen alten tremulierenden zu, wenn selbiger alleine singet; so wirder urteilen konnen, warum das Tremulum von den vornehmsten Sängern nicht gebraucht wird, es sey denn in *ardire*, davon drunten.

Fermo, or the maintenance of a steady voice, is required on all notes, except where a *trillo* or *ardire* is applied. It is regarded as a refinement mainly because the *tremulo* is a defect (except on the organ, where all the voices can tremulate simultaneously, and where it sounds well because of the alteration). Elderly singers feature the *tremulo* but not as an artifice. Rather, it creeps in by itself, as they are no longer able to hold their voices steady. If anyone would demand further evidence of the undesirability of the *tremulo*, let him listen to such an old man employing it while singing alone. Then he will be able to judge why the *tremulo* is not used by the most polished singers, except in *ardire*.¹³

¹¹ Zacconi, *Prattica di musica*, f. 60r.

¹² Praetorius, *Syntagma musicum*, iii (Wolfenbuttel, 1619); facs. Willibald Gurlitt, *Documenta musicologica*, xv (Kassel, 1958), 231, 235.

¹³ John Walter Hulse, ed. and trans., 'On the Art of Singing; or, Manier, in the Treatises of Christoph

Clearly, Bernhard knew the *tremolo* both on organs and in singing, but he believed it to be best saved for bold or passionate effects.

Tremolo on Instruments: the Finger Method

Methods for producing *tremolo* with the fingers rather than the breath were adopted by instrumentalists. On the harpsichord and lute, *tremolo* was the term used to describe a regular and rhythmic alternation from the main note to its upper neighbor.¹⁴ On the viol, Ganassi described a technique of using the finger of the left hand to rock from the main note to slightly above the fret. For the recorder, Ganassi gave detailed fingerings for *vivace* and *soave tremoli*, where the pitch fluctuation varied from a microtone to as much as a major third. Even in the mid-eighteenth century, Quantz called for the *messa di voce* to finish with a *flattement*, or finger vibrato, on the transverse flute, echoing Rognoni's advice for performing *esclamazioni*.¹⁵

On the Renaissance flute, finger vibrato is not as convincing as on other instruments because of the small finger-holes, and no writer suggests its use. In any case, the Renaissance flautist had no real need of it, because a breath *tremolo* was considered to be a natural part of a flute's sound. This point was clearly made by Agricola (1529), in his instructions for the *Schweitzerpfeiff*, with the unequivocal advice that it should be played with breath vibrato:

Auch wiltu haben den grand und bodem
So lern pfeiffen mit zitterndem odem
Denn es den gesang gantz sere zyret
Auff alien pfeiffen wie man hofiret.

Also, if you want to master the fundamentals and basics,
then learn to play pipes with quivering breath
for it graces the music very much
on all wind instruments that one plays.¹⁶

The quivering breath as an intrinsic part of the flute's sound is confirmed by Agricola's similar

Bernhard', *The Music Forum*, 3 (1975), 14.

¹⁴ For examples of such notated keyboard and lute ornaments called *tremolo*, see the so-called 'Capirola Lutebook', a manuscript of intabulations by Vincenzo Capirola, copied in Venice, ca. 1517 (*US-Cn VM C.25*); Tomás de Santa María, *Arte de tañer fantasia* (Valladolid, 1565), where he calls this ornament 'quiebro'; Girolamo Diruta, *Il transilvano* (Venice, 1593).

¹⁵ Johann Joachim Quantz *Versuch*, trans. Edward R. Reilly, *On Playing the Flute* (London, New York, 1985; Rpt.: London, Boston, 2001), 165-66.

¹⁶ Agricola (1545), trans. Hettrick, *MID*, 86.

comments in his 1545 edition:

Auch sey im pfeiffen darauffgsind
 Das du blest mit zitterndem wind
 Dann gleich wie hernach wird gelart Von der Polische Geigen art
 Das zittern den gesang zirt
 Also wirts auch alhie gespuert Aufforgeln wers ein gros ornate
 Wiewol man selten gebraucht hat
 Bisher inn den Deutschen landen.

Also, it's desirable that you blow pipes
 with a quivering breath
 just as it will be taught below
 in the manner of the Polish fiddle
 so that the quivering decorates the melody.
 Therefore, it would be also felt
 as an important ornament on organs
 although it has seldom been used
 up to now in the German lands.¹⁷

Turning to Agricola's 'Method for the Polish Fiddle', the instructions for vibrato are unequivocal:

one also produces vibrato freely (auch schafft man mit dem zittern frey), to
 make the melody sound sweeter than it will be on the others.¹⁸

Agricola's remarks offer clear evidence that the flute, like the Polish fiddle, was played with vibrato.

Among all the wind instruments treated by Agricola, the *Schweitzerpfeiff* was the only one for which he recommended breath vibrato. Were it not for his reference to vibrato on the Polish fiddle and organ, one might reasonably wonder if this 'quivering breath' referred only to a slight shimmer produced by the air stream as it leaves the lips. Agricola did not elaborate on exactly how it should be used on the *Schweitzerpfeiff*. But his remarks describe clearly a breath vibrato that is 'fundamental' to the sound and also 'decorates the melody,' even if he gave no context for its use. In spite of the importance of his remarks, they are thought to be the only known references to breath vibrato on the transverse flute before the eighteenth century; most modern Renaissance flautists choose to ignore his advice.

¹⁷ Agricola (1545), trans. Hettrick, *MID*, 86.

¹⁸ Agricola, *MID* (1545), fol. 42v.

Flutes and Organs

Agricola's connection of the *Schweitzerpfeiff* to the organ suggested to me an avenue of research which has yielded further evidence of a link between transverse flutes and organs. Flute stops have been the mainstay of every organist's tonal palette from the Renaissance to modern times. But Agricola was not the first to link the two instruments. Comments by Konrad of Mengersberg in his *Yconomica* (1328-52) suggested that organists believed the sound of flute stops to be powerfully moving:

flutes arouse or inflame amorous spirits... to the sweetness of devotion. Organs, therefore, on account of their variety and multitude [of flute stops] are fittingly allotted a place in churches where divine services are celebrated.¹⁹

In the sixteenth century, organs were equipped with devices that could produce vibrato. One such device, called the *tremulant*, mechanically altered the wind pressure inside the pipe to produce an oscillating tone. A second type used in Italy was a rank of 8' pipes slightly mistuned to the principal rank, resulting in an undulating sound, in imitation of the human voice; this stop was called *voce umana*.

We find both of these types of *tremolo* mechanisms described in a letter from the organist Giambatista Morsolino of Bergamo to the officers of the cathedral of in 1582.²⁰ The following quotation described the mechanical type:

Il diro che cosa sia il tremolo et quello che con il tremolo nell'organo ci si potria aggiungere. Tremolo dunque non e altro che un ingegno che si pone nel condotto che porta il vento dai Mantici al somero, il quale non e molto difficile a farsi; ben che difficiliss: a far fare buon effetto: ondo si trova che benche ce ne stan moltiss: pochi perro sono quelli che sono buoni; et accade che non essendo detto tremolo buono; in luogo di far l'armonia languida et dolce; riesce poi aspra et spiacevole, che par un tormentato dalla febre fredda, che sbatta denti. Ma quando e buono, per certo e cosa molto buona, et di grand'aiutto ad un organo; il che sapra fare un valent'huomo consumato nell'esperienze, et rieschi, et buono, et senza pericolo, o

¹⁹ See Christopher Page, 'German Musicians and Their Instruments: A Fourteenth-Century Account by Konrad of Mengersberg', *EM*, 10 (April 1982), 192-200.

²⁰ Morsolino's letter is quoted in full in the preface to *La musica in Cremona nella seconda meta del secolo XVI e i primordi dell'arte monteverdiana*, a cura di Gaetano Cesari, con prefazione di Guido Pannain su appunti di G. Cesari, Istituzioni e monumenti dell'arte musicale italiana, 6 (Milan, 1939), xvi-xvii.

nocimento alcuno dell'organo.

I will tell you what the *tremolo* is and what you can add to the organ with the *tremolo*. The *tremolo* is nothing other than a mechanism placed in the passage that conducts the wind from the bellows to the wind chest. It is not very difficult to build, but it is extremely difficult to make it produce a good effect. For this reason one finds that, although there are many of them, only a few are good. If the *tremolo* is not good, instead of making the harmony languid and sweet, it comes up rough and unpleasant, so that it sounds like somebody tortured by fever whose teeth chatter. But when it is good, it is a very good thing and very helpful for the organ. A maker who is experienced will be able to build a *tremolo*.²¹

Further on is an astonishing piece of information about the second method for producing tremolo on the organ:

Vi si potria poi aggiungere, o vogliate un registro di canne imitante le voci humane aiutate dal tremolo; 6 ch'imitassero gli fifferi o traverse; strumenti da fiato, similrmente col tremolo; come si trovano negli organ't di s.to Pietro, et di s.ta Agata in Cremona: Et que' tai registri fanno effetti mirabili col tremolo e la dolcezza et gratiosita di esse voci

It would be possible to add a stop of pipes imitating human voices enhanced by *tremolo*, or which imitates the *fifferi o traverse*, wind instruments similarly played with *tremolo*, as you will find in the organs of St. Peter and St. Agata in Cremona. These stops perform miraculous effects with both the *tremolo* and the sweetness and charm of the voices ...²²

The organs to which Morsolino referred above were both built by the famous Antegnati family, who were active from the end of the fifteenth century to the middle of the seventeenth. The St. Agata organ was built in 1569 by Graziadio Antegnati, considered the most outstanding builder of the family. The St. Peter organ was built in 1581, one year before Morsolino's letter, by Graziadio's son, Costanzo, who later wrote *L'arte organica* (Venice, 1608).²³ Unfortunately neither organ is extant.

Yet stops called *voce umana/fiffara* with *tremolo* are to be found on an impressive

²¹ Morsolino, xvii.

²² Morsolino, xvii.

²³ Modern edition ed. Renato Lunelli with parallel German translation by Paul Smets (Mainz, 1938; R, 1958).

number of organs from the sixteenth through eighteenth centuries. The following are important examples of organs with such stops:

1. Trento, S. Maria Maggiore, 1532-39: undulating *pifferi* (seat of Council of Trent, 1543-63).²⁴
2. Lodi, organ by Costanzo Antegnati, 1546: undulating *fiffara* 8'.²⁵
3. Brescia, S. Giuseppe, organ by Graziadio Antegnati, 1581: undulating *fiffara* 8', treble only.²⁶
4. Innsbruck, Silberne Kapelle, ca. 1580: undulating *voce umana/fiffara* 8', treble (Roman, papal gift to Archduke Ferdinand).²⁷
5. Hamburg, Jakobkirche, 1512-1605: *querflote* with *tremulants* stop added, 1576.²⁸
6. Evora Cathedral (Spain), builder unknown, 1562: *vox humana/piffaro* 8'.²⁹
7. Valvasone (near Venice), organ by Vincenzo Colombo, 1532: register called *Fiffaro* with *tremolo nel canale*.³⁰

In all the organs above, the undulating *voce umana/fiffara* stop is an 8' principal that produces a continuous *tremolo* through the use of a separate rank of mistuned pipes. Normally on Italian-style organs, the undulating *fiffara* is found on some organs only in the treble, from c' up, thus used as a solo stop (as in the Brescian organ, no. 3 above). The sound of the undulating *fiffara* is as Morsolino describes it – languid and sweet – and distinguishes the treble line from the straight-toned accompaniment. Of course, on organs the *tremolo* is on or off, with no inflection or variation, which gives it strong emphasis when used as a solo voice.³¹

It may be that the French preferred a somewhat different practice, in which the *tremolo* was present in all the voices together, not just the solo soprano voice. Of particular interest is a specification of an organ in St. Etienne of Troyes (1551) calling for 'a rank of *voix humaines*

²⁴ Peter Williams, *The European Organ, 1450-1850* (London, 1966; Bloomington, IN [1978]), 211.

²⁵ Peter Williams, *A New History of the Organ from the Greeks to the Present Day* (London and Bloomington, IN, 1980), 240.

²⁶ Williams, *New History*, 83.

²⁷ Williams, *European Organ*, 208.

²⁸ Williams, *New History*, 99.

²⁹ Williams, *New History*, 240.

³⁰ I am grateful to Liane Ehlich for this information.

³¹ To hear recordings of Italian Renaissance organs with tremolo, see *Sieneese Splendor*, Kimberly Marshall, organ (Loft, LRCD 1046, 2002) and *Basilicata*, Liuwe Tammingo, organ (Accent, ACC 21147, 2001).

imitating *four* [italics mine] singers with trembling voices'.³² Further research into French organs needs to be done, but this idea could have applications for performances of French chansons, not only by singers but also those published for a consort of four *fleustes dallemant* by Attaignant in 1533, in which all four flutes might play with the vibrato which Agricola suggested as fundamental to the sound.

It is important to know the kinds of occasions for which organ *tremolo* was recommended as an expressive device. Antegnati in his *L'arte organica* recommended the *tremolante* with the principal and flute stops when playing *senza diminuire* (without diminutions) or *adagio et senza diminuire*.³³

The organist Girolamo Diruta (*Il Transilvano*, 1609) concurred with the idea that the *tremolo* should be used for slow music and not with diminutions. He suggested its use with certain mournful modes at the most passionate moment of the Mass:

Il Secondo tuono rende l'armonia malenconica, questo vuole il principal solo con il tremolo, sonata o pero nelle sue corde natural: con la modulatione mesta.... Il Quarto tuono rende l'armonia lamenteuole mesta, e dogliosa. Il registro principale con il tremolo lo fara quest'effetto, ouero in qualche registro del flauto sonato nelli suoi rasti naturali con le modulationi appropriate. Quello tuono, & il Secondo, sono quasi d'una medema armonia; vene servirete per sonar' alla levatione del Santissimo Corpo, & Sangue de N. 5. Giesu Christo, imitando con il sonars II duri & aspri tormenti della Passione.

The second tone [Hypodorian] renders the music melancholy. It calls for a solo Principal with *tremolo*, played, nevertheless, untransposed with a sad melody....The fourth tone [Hypophrygian] produces music that is mournful, sad, and sorrowful. The Principal rank with tremolo will give this effect, or some flute rank played untransposed with the appropriate melodic motion. This tone and the second have almost the same musical effect. You can use them for playing at the elevation of the Most Holy Body and Blood of Our Lord Jesus Christ, imitating with this sound (i.e. the *tremolo*) the harsh and cruel torments of the Passion.³⁴

³² Quoted in translation by Edward Lowinsky, 'English Organ Music of the Renaissance', *MQ*, 39 (1953), 528.

³³ Antegnati, *L'arte organica*, 66, 68, 70.

³⁴ Girolamo Diruta, *Seconde parte del Transilvano* (Venice, 1609), ed. Edward J. Soehnlén and Murray C. Bradshaw, *Bibliotheca organologica*, 44 (Buren, Netherlands, 1983); trans. Murray C. Bradshaw and Edward J. Soehnlén, *Institute of Medieval Music*, 38 (Henryville, MI, 1984), 153-54.

Sad and mournful modes are defined by Gioseffo Zarlino as those having a minor third in the diapason: Dorian, Phrygian, and Aeolian.³⁵ Modes with the minor third are the very modes also recommended as best for transverse flutes by several important writers, including Jambe de Fer, Virgiliano, and Praetorius. The sad and melancholy *affect* attached to the sound of transverse flutes held currency well into the eighteenth century, especially in France, and was also used to good effect in the passions of J. S. Bach. Sebastian Brossard defines the sound of the transverse flute as 'sad, languishing' (*triste, languissant*).³⁶

One final source may seem a puzzling, even a provocative choice: it is a Chinese tutor for the bamboo *Di* (transverse flute) and *Xiao* (end-blown flute) published in Hong Kong in 1973, but first published in Shanghai in 1939.³⁷ It represents a traditional approach to the technique of the *Di*, an instrument similar to the Renaissance flute and probably sharing its origins. A few interesting observations regarding its sound quality are made by the author, Xiao Jianqing:

for those who cannot achieve a round, limpid tone, this is because the breath is scattered and not concentrated. Method: the heart and breath should be still and in harmony. For the *Di* the breath should vibrate strongly.

Xiao describes a visit to Tangshah in 1928, where he heard the remarkable *Di* playing of Hua Fenghuang, whose sound had:

the delicacy of a reed; in rapid passages like pearls rolling on a tray of jade, in slow passages like tears and sighs. A skill not easily mastered

The twentieth-century Chinese flute master Xiao Jianqing eloquently expressed similar ideals of sound for the *Di* to those that have been put forward in this chapter for the Renaissance flute: a concentrated, vibrating breath stream, and a tone that is limpid, delicate, focused rather than "scattered," capable of moving the listener to tears. The image of rolling

³⁵ The properties of modes are discussed by Gioseffo Zarlino in book IV of his *Le istituzione harmoniche* (Venice, 1558); facsimile, New York, [1965]; trans. Jared Cohen as *On the Modes*, ed. Claude Palisca, *Music Theory Translation* (New Haven, 1983).

³⁶ Sebastian Brossard, *Dictionnaire de musique* (Paris, 1703); facsimile of the 2nd. ed. (1705), with introduction by Harald Heckmann, *Dictionarium musicum*, 1 (Hilversum, [1965]), s.v., 'Stilo symphoniaco.'

³⁷ Xiao Jianqing, *Xiao di chu'i zou fa [The Technique of the Di and Xiao]* (Shanghai: Guo Guang Shu Dian, 1939; rpt, Hong Kong: Xin Cheng Shu Ju, 1973). I am grateful to Anthony Blishen, a keen Renaissance flautist and Chinese scholar, for bringing this source to my attention and for translating the material quoted here (from the Hong Kong edition).

pearls is an apt one, too. Pearls are by nature unique and varied, uneven in size, shape and luster. The image of rolling pearls recalls the varied articulation syllables employed by Renaissance musicians for fast passage-work, which were prized for their clarity, delicacy, and variety of expression.

Conclusions

The discussion above presents potent images and avenues for exploring the sound of the Renaissance flute: the breath that activates the acute and grave thrusts of Mei's poetic recitations, the tonal contrasts praised by Ganassi for playing the recorder in imitation of singers, the *zitterndem winde* of Agricola, the *tremolo* and *messa di voci* of Rognoni, the *fiffaro* stops with *tremolo* on Italian organs. The player of the Renaissance flute must master these concepts and find the breath and embouchure techniques to create a sound which is dynamic, concentrated, expressive, and above all, in the words of the Chinese flute master Xiao Jianqing, vibrating, and full of delicate sweetness and melancholy.³⁸

³⁸ To hear examples of the sound of the Renaissance flute, based on the author's research and experience as a professional player, listen to recordings by Nancy Hadden, a few of which are listed here: *Sacred Concerti*, Circa 1500, dir. Nancy Hadden (CRD, 3516, 2009); *Flute Music of the Sixteenth and Seventeenth Centuries*, Nancy Hadden, Renaissance flute (Hyperion, CDA66298, 1988); *My Mind to Me a Kingdom Is*, Tragicomedia (Hyperion, CDA66307, 1989); *Carolans' Harp*, The Harp Consort (BMG Classics, 05472 77375 2, 1996); *La Plus Gorgiase du Monde: French Chansons for Flutes*, Zephyrus Flutes, dir. Nancy Hadden (forthcoming, 2011).

Chapter 4.7

The Tuning of the Renaissance Flutes and Finger Holes

What is Playing in Tune?

L'Art divin de M. Blavet est de réparer sur la Flute, par le moyen de l'haleine modifiée. Ainsi les Ecolières de Clavecin, lorsqu'elles s'applaudissent qu'il toujours d'accord, ne sentient pas pu'il n'y est jamais.

The divine artistry of Mr. Blavet consists in adjusting his flute by the means of modifying his breath. But students of the harpsichord praise the instrument for its intonation, not perceiving that it is in fact never truly in tune.¹

Hubert Le Blanc, 1740

Subjective prejudices have existed over time regarding the subject of intonation, and opinions differ widely on what is meant by playing 'in tune'. The above quote challenges the commonly held notion that tuning is a fixed thing, that pre-tuned instruments are always 'in tune' and that melodic instruments are flawed in this respect, when in fact, flutes and other flexible instruments are capable of extreme precision. Of course Renaissance players of melodic instruments worked within an atmosphere of the fixed temperaments of accompaniment instruments such as harpsichords, lutes and harps; for modern instrumentalists this means equal temperament, a compromise tuning in which all intervals are equally out of tune. For players of historic instruments, the atmosphere is most certainly not equal temperament, but one of a variety of unequal tunings which were in use during the sixteenth, seventeenth and eighteenth centuries, in which a number of intervals are able to be tuned pure. It is important to distinguish between temperaments, which are fixed and inflexible, and melodic intonation, which is used expressively and flexibly and not constrained by a temperament. While much has been written about the fixed temperaments used by keyboards, harps, lutes and other 'pre-tuned' instruments, and a little attention has been paid to the tuning of Baroque instruments, almost nothing has been written about tuning on Renaissance wind instruments.² This chapter will present information from historical sources, the instruments

¹ Hubert Le Blanc, *Defense de la basse de viole*, trans. B.G. Jackson, 'Hubert Le Blanc's "Defense de la viole"', *Journal of the Viola da Gamba Society of America*, 10 (1973), 11.

² For a historical survey of temperaments and tuning, see Mark Lindley, 'Stimmung und Temperatur', *Geschichte der Musiktheorie*, vi (Berlin, 1987). Keyboard temperaments are briefly surveyed in

themselves, and my own experience towards an understanding of expressive tuning on the Renaissance flute and how it relates to the unequal temperaments which were in use during the sixteenth century.

Temperaments and Tuning

A keyboard or other instrument of fixed pitch, such as the harp, is tuned to a specific closed system, or ‘temperament’, before it is played. Temperaments artificially divide the octave: in equal temperament, the twelve intervals are equally divided (and equally out of tune), but earlier temperaments favoured unequal divisions of the octave in the interest of achieving some pure intervals at the expense of those less frequently used. Since it is not possible to have both pure fifths and pure major thirds in the same tuning system, various systems were devised over time.

Pythagorean tuning, known in the Middle Ages and still in evidence well into the sixteenth century, produces major thirds which are considerably wider than pure – larger even than equally tempered ones – and fifths that are pure. A different system of arranging the intervals unequally came into use around the mid-fifteenth century, in response to the need for sweeter thirds, and these are now grouped together in modern parlance as ‘mean tone’ temperaments (the term was not used by theorists from the sixteenth through the eighteenth centuries; various ways of dividing the octave into unequal semi-tones were described, without labelling these divisions as ‘mean-tone’).³ Mean tone temperaments favoured pure thirds, but with that came narrow fifths. In classic ‘quarter-comma’ mean-tone, eleven fifths are tuned a quarter of a syntonic comma smaller than pure, and this produces eight pure major thirds. The twelfth fifth, known as a ‘wolf’ fifth, was sour and unusable, but this wolf could be placed at a remote interval to cause the least disruption. Other less marked divisions of the octave resulted in a less drastic comma left over; these are fifth- and sixth- comma mean tone.⁴ The mean tone scale is inherently uneven and characterful, while enabling vertical harmonies which contain pure thirds. These pure thirds produce cadences which are settled and at rest, unlike the

Alexander Silbiger, ed., *Keyboard Music Before 1700* (New York, NY, 2004), 372-76. For non-keyboard tuning of Baroque instruments see Patrizio Barbieri, ‘Violin Intonation: a Historical Survey’, *EM*, 19 (1991), 69-88, and Bruce Haynes, ‘Beyond Temperament: Non-Keyboard Intonation in the Seventeenth and Eighteenth Centuries’, *EM*, 19 (1991), 357-381.

³ For a good overview and explanation of mean tone temperaments, see J. Murray Barbour, *Tuning and Temperament, a Historical Survey* (1951); for a survey and discussion of historical temperaments see also J. M. Barbour, ‘The Persistence of the Pythagorean Tuning System’, *Scripta Mathematica* i (1933), 286.

⁴ The labels ‘quarter-comma mean-tone’, ‘sixth-comma mean-tone’ and ‘fifth-comma mean-tone’ are convenient modern inventions.

modern equally-tempered thirds, which are wide, and produce an active, vibrating quality. Unequal tuning systems were favoured until the nineteenth-century rise of equal temperament.⁵

Melodic instruments are not constrained by closed temperaments. They adjust tuning by ear during playing. When playing with an instrument of fixed pitch, they must adjust somewhat to the temperament, but there is always the option for expressive adjustments. Tuning decisions are a moveable feast, changing according to context and mode; melodic ‘pull’, vertical intervals and cadence structures all influence how an individual player might choose to tune. In his tuning *Méthode* of 1707, Joseph Sauveur classed wind instruments as those ‘on which the pitch is governed by projections, tone holes or keys, but that can be nevertheless corrected by a sensitive ear’.⁶ As Bruce Haynes puts it, playing in tune ‘is a relative and very personal affair, and no set of rules or abstractions from practice can possibly encompass its complexities, or substitute for an alert ear and a willing spirit’.⁷

Renaissance musicians were well aware of the inherent differences of tuning among different types of instruments, and the difficulties which arose when disparate instrument types tried to play together. The Renaissance humanist and musician Ercole Bottrigari (1531-1612) classified instruments by the flexibility of their tuning.⁸ He established three categories: those with stable tuning – keyboards, lutes and harps – those which were completely alterable, such as the sackbut, and in between, those stable in tuning but alterable by the player, because the pitch of each note can be changed in varying degrees by adjustments in the lip, breath and fingers. In this category were violins and most wind instruments, including recorder, cornett, shawm and transverse flute.

Ganassi, Jambe de Fer and Zacconi offered advice for correcting the tuning on ‘stable-but-alterable’ instruments through management of breath and fingers. For the recorder, Ganassi wrote:

⁵ Bruce Haynes, ‘Beyond temperament’, 380, quotes Francesco Geminiani, writing in 1751, who says that an octave is divided ‘into 12 semitones, seven of the greater and five of the lesser’, corresponding to a temperament we would now call sixth-comma mean-tone; Haynes provides documentation that unequal semi-tones were discussed as late as 1813. The persistence of unequal temperaments in the nineteenth century is also discussed in Ross Duffin, *How Equal Temperament Ruined Harmony (and Why You Should Care)* (New York and London, 2007).

⁶ Joseph Sauveur, *Méthode générale pour former les systems tempérés de musique* (Paris, 1700-13, rpt. Utrecht, 1984), 206.

⁷ Haynes, ‘Beyond temperament’, 357.

⁸ Ercole Bottrigari, *Il Desiderio* (Venice, 1594), facs. K. Meyer (Berlin, 1924), English trans. Carol MacClintock (Rome, 1962), 15-16, 22-3.

Some of the [finger] holes are half black with an ‘m’ beside them. This means that they should be half closed, a little more or a little less according to the demands of pure intonation.⁹

Similar instructions were made by Ludovico Zacconi, who suggested adjusting intonation through subtle shading of finger holes on ‘stable but alterable’ wind instruments including flutes.

For the transverse flute, breath and embouchure adjustments were an effective way of controlling the intonation. In his fingering chart for the bass flute *Jambe de Fer*, *EpM* (1556) included instructions alongside two fingerings: for the lowest note, g, ‘le plus bas ton vent bien doux’ (the lowest note, blow very softly); for d’’ (which is too sharp on virtually all Renaissance flutes), ‘vent doux et bien couvert’ (blow softly and well covered). This technique lowers the pitch by shading the embouchure hole with the lips and directing the airstream downward, and is useful as a general tuning technique (*Jambe de Fer*’s fingering charts and instructions are discussed fully in Ch. 4.4).

Tuning – Theoretical Matters

Before discussing Renaissance flute tuning in detail, it is useful to explain quarter-comma mean-tone temperament, which was widely in use in the sixteenth century, and how it relates to the tuning of a flute consort. The chart below shows the number of cents sharp or flat from equal the intervals of a quarter-comma mean-tone scale are. Note that the degree of flatness or sharpness follows the circle of fifths:

Table 4.7.1 Equal temperament vs. quarter-comma mean-tone.

Sharper than equal:	A _b	+12¢
	E _b	+10¢
	B _b	+7¢
	F	+3¢
	C	0¢

⁹ Ganassi, *Fontegara*, 9.

Flatter than equal:	G	-3¢
	D	-7¢
	A	-10¢
	E	-14¢
	B	-17¢
	F#	-21¢
	C#	-24¢
	G#	-27¢

The measurements above are derived by comparing the pitch in cents of an equally tempered scale and a scale tuned to quarter-comma mean-tone as follows (no provision is made in equal temperament for the difference in pitch between sharps and flats):

	C	C#	D	E _b	E	F	F#	G	G#	A	B _b	B	C
Equal	0	100	200	300	400	500	600	700	800	900	1000	1100	1200
¼ m-t.	0	76	193	310	386	503	579	697	773	890	1007	1083	0
Difference	0	-24	-7	10	-14	3	-21	-3	-27	-10	7	-17	0

On the Renaissance flute, playing exactly to the tuning of a closed temperament such as quarter-comma mean-tone is not fully possible, due to finger hole placement. Nevertheless, surviving flutes show that makers went to some lengths to adjust the finger holes towards modal scales and unequal temperament, favouring the tuning of certain notes at the expense of others (F over F# and B_b over B, for example). It is important to know this, because it shows that whatever intervals a Renaissance flute might have been tuned to, they certainly were not equally tempered ones.

In the modern tonal system, all major and minor scales are made up of the same configuration of whole and half-steps – in a major scale, for example, the semi-tone falls between the third and fourth and seventh and octave, regardless of the key. In the modal system, each mode has its own melodic configuration of tones and semi-tones, giving each modal scale a unique character. Theorists identified these configurations of intervals for each mode as ‘species’, through which a modal outline could be recognized. That modes had different qualities or characters was universally recognized and composers’ choices of modes were carefully and deliberately made to reflect the mood and nature of the texts they set.

From early Mediaeval times, plainchant was sung with a flexible attitude to the tuning to express the qualities of the mode. Byzantine cantors still today make use of degrees of sharpness and flatness in singing modal melodies to create a melodic ‘pull’, which sounds

strange and bizarre to our modern equally-tempered ears.¹⁰ Agricola and other writers in the early sixteenth century referred to this type of tuning of the melodic modes in discussions of the qualities of each note of the hexachord, where *mi* and *la* are seen as ‘hard’, and sung sharply and harshly, *fa* and *ut* are soft ‘because they are sung quite finely, softly, gently, pleasantly, and smoothly’, *re* and *sol* are called ‘average’ because they emit a natural sound, ‘not too soft nor too hard’.¹¹ This is modal tuning, which is first and foremost a melodic system and has little to do with a system of tuning polyphonic vertical intervals.

Tuning – Practical Matters

The closed temperaments used in the sixteenth century were developed in order to tune keyboards, lutes and harps, which the late sixteenth-century theorist Hercole Bottrigari labelled ‘stable’ instruments, because the tuning could not be adjusted whilst playing.¹² Mean-tone temperaments contained within them an inherent inequality which was used and prized by all Renaissance performers – flat sharps and sharp flats, for example, and pure thirds. But they are not in themselves wholly relevant to the more flexible tuning achievable on a Renaissance flute or other alterable instruments, of which Bottrigari wrote:

The stable but alterable instruments are those which, after they have been tuned by the diligent player, can be changed, augmented or diminished in some degree ... as straight and transverse flutes, or straight and curved cornetts.¹³

Jambe de Fer, writing in 1556, noted this flexibility when he said that control over tuning was achieved on the flute by covering the embouchure hole and blowing more softly for certain notes (see Ch. 4.6). Agricola offered another type of flexible tuning in the form of alternate fingerings for the more unstable notes on the flute, such as C and G#. Ganassi’s fingering charts also provided alternate fingerings for recorders, in order that the player could adjust

¹⁰ I have heard this type of modal tuning with powerful effect in concert performances of Byzantine chant by Greek Orthodox monks Lycourgos Angelopoulos and others. For their recorded example, see *Hymns from the Holy Mount Athos* (Dux, 0400, 2002).

¹¹ Martin Agricola, *Musica choralis deutsch* (1533), trans. D. Howlett (1979), 72-3, for these definitions and further discussion of the qualities of notes in the hexachord. See also Anne Smith, ‘Attainnant, Intonation in Flute Consorts, and Hexachord Theory’, *Musicque de Joye*, ed. David Lasocki (Utrecht, 2005), 165-86 for her rather personal interpretation of how modal tuning might be applied to flute consorts.

¹² Hercole Bottrigari, *Il Desiderio* (1594), trans. Carol MacClintock (1962), 14.

¹³ Bottrigari, *Il Desiderio*, trans. MacClintock, 15.

certain intervals. His expressive *tremolo* fingerings also exhibit flexibility and ranged from micro-tones to major thirds; these he labelled *suave* and *vivace* depending on the desired effect.

Flute players also used finger-hole shading to adjust the tuning. In his advice to wind players, Ludovico Zacconi endorsed a technique of covering and uncovering finger holes to help with tuning, which he said was used by ‘skilled and talented players’ of the transverse flute (*i Fifari*) and other winds:

A talche i Cornetti, i Fifari, i Flauti, i Fagotti, le Cornamuse, & gl’altri che sonano mediante i forami & buchi, sono quegli Istrumenti che hanno il suono stabile, i quali dopo che son fatti, non si possano rimuovere da quell suono che formano, se non che l’arte & l’ingegno del sonatore che l’ha in mano & l’adopera lo puo in qualche parte aiutare: non in altro caso se non quando che sonando si alza, il che avviene facilmente se vi sono le voci appresso: poiche allora, & in qual caso col coprire & discoprire alquanto, quei buchi & forami, che si doveriano discoprire, & coprire; si aiutano in tal maniera, che s’accomodano al meglio che possano.

So that cornetti, transverse flutes, recorders, bassoons, cornamuse, and others that sound by means of bores and holes are those instruments that have a stable sound, which after the sound is made cannot be altered from the sound that they formed; except that the skill and talent of the player, who has it in his hand and uses it, can help it somewhat; otherwise, when the pitch rises while playing, which happens easily if voices are included: at that time and in this case, by covering and uncovering a little those holes and bores that they might need to uncover and cover, they help in such a manner that they accommodate themselves as best as possible.¹⁴

On a Renaissance flute a complete mean-tone scale is not fully achievable, because hole placement must be compromised according to the reach of human hands. From the observations I have made about undercutting on original flute finger holes (Ch. 1.3), it is clear that although the holes were not in the optimum places, further fine tuning was attempted by makers. Bottrigari alluded to this with the interesting observation that transverse flutes (along with recorders and cornetts) ‘are all one species using the syntonic diatonic of Ptolemy more

¹⁴ Lodovico Zacconi, *Prattica di musica* Part 1 (Venice, 1596; facs., Hildesheim and New York, 1982), f. 214r; trans. from Kenton Terry Meyer, *The Crumhorn: Its History, Design, Repertory and Technique* (Ann Arbor, MI, 1983), 22. Bottrigari, 15, made similar recommendations to use the breath and finger-hole shading to bring them ‘closer to good accord’.

often than not ... when excellent makers ... bore the holes of such instruments they depend only on their ear, aided by nature, broadening the openings as the need is felt'.¹⁵

Although flautists and other melodic instrument players were aware of the sound-world of mean-tone temperaments and would have made every effort to adjust their tuning to fit that sound-world as much as possible, it was not always with complete success. Bottrigari documented clashes of tuning as a regular feature of combining 'stable' instruments, such as keyboards and lutes, with 'stable but alterable' instruments – wind instruments and viols:

When one combines stable-alterable instruments of two kinds (with frets and vents) with entirely alterable and entirely stable instruments, even if each player of the stable-alterable instruments makes every effort to unite with others they can never be in complete accord, because they can never perfectly agree ... and so they produce a real *concerto*, or battle, instead of a *concerto*, a union and concord.¹⁶

Instruments with fixed tunings such as lutes, harps and keyboards must come to the aid of alterable instruments which cannot quite manage the temperament, by leaving out notes which do not sound well, for example, not doubling major thirds at important cadences.

However much early music practitioners today profess to avoid equal temperament, modern performances by players of both early string and wind instruments confirm a shyness towards low leading tones and uneven scales. Most modern players raise sharps (as leading tones) and lower flats (especially minor thirds) to enhance their melodic function. This is the reverse of Renaissance practice, in which the sharps were lower in pitch than their enharmonic equivalent flats, and the tuning was not adjusted upward for cadential sharps or downward for minor intervals, tunings which contributed towards the different qualities present in a given tonality or mode.

Renaissance music is linear, and the conjunction of 'chords' is a result of two or more melodies occurring simultaneously, a point which is important in considering expressive tuning. When three or four flutes play in consort, tuning can be a moveable feast for both melodic and vertical intervals, producing pure intervals at consonant points in the phrases in much the same way that a vocal ensemble tunes. In this way, vertical pure thirds and fifths at cadences can be achieved, and melodic 'pull' can be created by bending pitches sharper or flatter to enhance the modal context and direction of melodies. Expressive consort tuning is not simply a matter of tuning constant pure vertical intervals, which is without interest and lacks direction.

¹⁵ Bottrigari, 16.

¹⁶ Bottrigari, *Il Desiderio*, trans. MacClintock, 22-3.

Tuning of Renaissance Flute Finger Holes

The following discussion of finger hole tuning is based on my observations, particularly those using the Renaissance flutes in the AFV, which is among the best and most representative of surviving Renaissance flutes (see Ch. 1.3, *Surviving Flutes*).¹⁷ I attempt here to relate the tuning characteristics to the design features of the flute, regarding placement of finger holes, their size and undercutting. Each note will be discussed individually, and finger holes will be discussed in light of the function of each hole, and their influence on each other.

On keyless flutes, each hole has two functions – to limit the speaking length of the instrument and to be closed and opened by the fingers. The holes of the Renaissance flute are normally much smaller than required to cut short the speaking length. This is the opposite of Theobald Boehm's 1832 flute design which is still in use today, in which the finger-holes are large enough to cut short the speaking length, and covered with keys.

On keyless non-European flutes, such as South Indian *bānsurī* and Chinese *dī*, the finger-holes are still larger, but are still compatible with cutting short the speaking length while being reachable by the fingers. On large-holed flutes such as these, cross-fingering – where a hole is left open between two closed holes – is not effective. Indian flutes were tuned either for sharp or flat thirds, and fingering patterns involve the opening of adjacent holes one at a time to produce a scale, without recourse to cross-fingering.¹⁸ In the case of the Chinese *dī*, flutes are made in different sizes, each of which plays in only one mode. The scale produced by lifting one finger at a time in succession includes a major third in this pattern of fingerings, and minor thirds are not obtainable.

On the Renaissance flute the speaking length and tuning are not only determined by the distance from the mouth hole to the first open finger hole, but also by the pattern of open and closed holes. For example, the fingering ● ● ○ / ○ ○ ○ for 'A' has no holes open between closed ones, while ● ● ○ / ● ○ ○ for G# has an open hole between two closed ones. This is known as cross-fingering.

In the first octave, simple cross-fingerings (that is, leaving an open hole between two closed holes), are used consistently in historical fingering chart for finding the note a semi-tone below the pitch obtained with a continuous pattern of open holes. For example:

F# ● ● ● ● ○ ○ and F ● ● ● ● ○ ●; A ● ● ○ ○ ○ ○ and G# ● ● ○ ● ○ ○;
B ● ○ ○ ○ ○ ○ and B_b ● ○ ● ● ○ ● (for more examples, see Ch. 4.4).

¹⁷ See also Nancy Hadden, 'The Flutes of the Accademia Filarmonica', *Musick*, 4 (April, 1988), 7-11. My research is also based on collaborations with Filadelfio Puglisi, to whom I am grateful for data which has been incorporated into this chapter.

¹⁸ See John R. Marr, 'Karnatic (South Indian) Music', jacket notes to *Dr. N. Ramani, Classical Karnatic Flute, Music in the Ragas* (Nimbus Records, NI5257, 1990).

There are shortcomings here: the same hole must serve for two different notes, when in fact they should be of two different sizes to carry adequately the function of the tuning. Historical instrument makers made some compromises for this, by adjusting and undercutting the tone holes, which adds to the tuning ‘personality’ of the flute. The problems and methods makers used for dealing with them are set out in the discussion below.

Problems of the Six-Finger-Hole Pattern

The six finger-holes give seven principal positions corresponding to the seven diatonic notes of a D major scale. Raising one finger at a time from the bottom produces: D E F# G A B C#. Semitones are obtained by cross-fingerings, that is, patterns of open and closed holes in non-linear (ie., non adjacent) positions (see examples above). Not every diatonic note has a semitone available. E \flat , for example, is not available with cross-fingering, only by half-shading the lowest hole.

F natural and F# present particular tuning problems. Although the fingerings differ in practice, theoretically both F and F# can be obtained with the same fingering: for F# 1234, and by lipping down, F. This instability may also be viewed as flexibility and is a positive feature. For F natural, the cross-fingering 123 46 is not very effective, due to a small fifth hole, and the sound is small and too sharp. Thus the third note of the flute’s basic scale is unstable and requires quite a lot of embouchure and breath adjustment to bring the pitch down. While F# is not a forked fingering on tenors, on the bass chart Jambe de Fer offers a variant fingering which is a forked one, for the bass’s corresponding B, 123 5 half-shaded 6. Jambe de Fer’s fingering is too high in pitch, effectively a g \flat , but it is possible to adjust it down with the lips, and it is a useful fingering on the tenor.

The Finger Hole Point of View for Tuning

Finger-hole layout is in two groups of three: 123 456. The octave of the fundamental is obtained as the second partial of the full tube, vented by opening Hole 1, a factor which aids the octave jump somewhat but does not contribute fundamentally to the tone production. On most Renaissance flutes Hole 1 is of fundamental importance in the finger-hole layout. It must be at its theoretical optimum position in tenors (less critical on basses), and its position does not affect the pitch of the second partial (the octave) whether the hole is open or closed.

For Holes 1, 2 and 3 reasons will be given in the discussion below for each of their positions; Holes 4,5 and 6 in basses are bound by the position of 4, which is large and just coverable by the index finger of the right hand, and Hole 6, which is smaller than on tenors, for the reason that the position is even more compromised. The low A (123 45) on the bass is the weakest note – such a small open Hole 6 projects very little sound. Any movement to a

position further down would make Hole 6 so small that it could not emit any sound. In tenors this requirement for Hole 6 is less stringent. A few mm. left or right are possible without altering finger-hole diameter beyond reasonable sizes.

The smallest holes are 6 and 3 on basses (5 - 5.2 mm. on surviving flutes). The largest hole is 1 on basses (10 mm.). Tenors are more uniform in the relative size between the holes. It is possible to make a tenor with all the holes around 6.3 mm., with undercutting as the final determinant for tuning. With regard to undercutting, some flutes show a preference for undercutting in a longitudinal direction.

HOLE 1: This hole determines, in the broadest sense, the finger-hole layout, since it must be in the position of the node of the first harmonic. To open or close it makes no difference to the pitch of the first harmonic, the octave d' on tenors. This feature is found on all tenors in Verona. For basses, it is not as simple; the theoretical position of the first hole, to produce the node for g' is too high up the tube, and in order to be reachable by the spread of the hand, Hole 3 would also be too high, and its diameter too small for good tone emission. A compromise is thus worked out as follows: Hole 1 on basses is moved down a bit from its ideal theoretical position, towards the bottom of the flute, with the cost of requiring a substantial amount of undercutting. Hole 3 can then be moved down somewhat and the size cut to about 5.0mm in diameter, which is the absolute minimum size required for sound emission.

On tenors, once Hole 1 has been determined, the positions of 2 and 3 are determined by the hand spread. Hole 3 can be of a size more or less like any other finger hole, with a range of between 6.0 and 7.0 mm, which is bigger than Hole 3 on basses.

Functionally speaking, Hole 1 is predominant in determining the pitch of C# and C on tenors. C can be obtained with several fingerings (see chapter on fingering charts). The relatively large number of deviations in the charts for C fingerings may be due to differing placements of Hole 1 in instruments known to Agricola, Jambe de Fer and Virgiliano. Heavy undercutting of Hole 1 (such as in basses) affects the octave tuning of g'-g''; because such undercutting widens the bore, g'' is too low in pitch. In some basses (for example, BCV no. 7), f# is not obtainable. As already noted, bass design is more varied than tenor. This is true for modern copies as well, because makers have exercised more freedom in experimenting with hole placement in order to minimize the discomfort of the hand.

HOLE 2: This hole is critical for b' and b_♭' (tenors). Hole 2 is often the biggest hole on tenor flutes. Functionally speaking, Hole 2 is predominant in determining b' and b_♭', and somewhat less critical for b'' (obtained as the third partial) and b_♭'', which can be fingered more than one way, as evidenced in the fingering charts, and for c'' fingered 3456 (Agricola's first fingering), but has no effect on c'' fingered 2 (Agricola's second fingering and Virgiliano's only fingering for c''). A compromise is found on surviving originals for a B not too low and a B_♭ which is

high enough. Problems of this hole are not so critical as for the second hole in the right hand (5) which governs F and F# more problematically.

HOLE 3: This is made small in order to be reachable with a normal handsread; even then it requires an uncomfortable stretch. But the advantage of the smallness is also that it prevents too high a pitch for a'' on tenors; since it is the only open hole for this note. Jambe de Fer says that this note on the bass must be blown 'softly and well covered'. On tenors Hole 3 is undercut towards the bottom of the flute. On basses, it is undercut towards the mouth hole. This hole is predominant in determining the pitches of a', a'', g#' and g#''. Also for c' if fingered 2 (V) or 2 456 (A).

HOLE 4: Hole 4 determines the tuning of g' and g'' (on tenors). This has a similar problem of placement to Hole 1, being the first hole of the right hand. If Hole 4 is moved up, so as to allow a hole with a diameter easily covered by the index finger (8 mm or less), then Hole 6 must also be made much too small for decent emission (less than 5 mm.). As usual, a compromise is made: Hole 4 is moved downward, cut at a diameter between 8-9 mm., which is just acceptable for finger coverage. This is more problematic on basses. On basses Hole 4 is heavily undercut towards the mouth hole: diagram here. For tenors, the problem is less stringent, and all three right hand holes (4, 5, 6) are placed so that diameters are able to be cut within 6.0-7.0 mm.

HOLE 5: This hole is critical in determining f', f#, f'', f#''. The problem is that the fingerings for both Fs and F#s are governed by Hole 5, a hole which is too small to permit a full semitone. A larger sixth hole helps 5 in venting for the f#s. Since it is easier to lower a sharp note than it is to raise a flat one, Hole 5 is sized so that Fs are 50 cents higher than optimum pitch, and F#s will fall in the range of 17-21 cents flat. This compromise necessitates covering and blowing much softer for F, sometimes even shading Hole 5 slightly with the finger, while for F#s, it is necessary to uncover the embouchure hole and blow harder to bring the pitch up. On basses, the corresponding pitch of B is far too low with the fingering 1234. The bass is less flexible or able to be adjusted by embouchure and breath. This is surely the reason that Jambe de Fer gives the (much too sharp) fingering of B for the bass, as 123 5 half 6. (This fingering is similar to Quantz's for G_b on the Baroque flute, 12356K. In early non-equal tuning systems, G_b is noticeably higher in pitch than F#). Modern makers tend to enlarge Hole 5 too much, in a mis-guided effort to bring the F#s up in pitch, but this is to the greater detriment of Fs, and if Hole 5 is made too big, Hole 6 is rendered ineffective in helping to raise the F# anyway.

HOLE 6: This is the weakest point of Renaissance flute design. Hole 6 is ineffective in radiating sound because it is too small for good sound emission.¹⁹ If it were made larger, it must also be placed further down the tube, but this is prevented by the limits of the hand spread. It is therefore best to make Hole 6 as large as possible for sound emission and also to facilitate the half shading for E_bs. For both basses and tenors this hole must be deeply undercut towards the bottom end of the flute in an effort to lower the pitch of F#.

Reconstructing Original Choices for Tuning

This study is based on fingerings for the tenor flute from the sixteenth-century charts of Agricola and Virgiliano. The tenor is the most important size, and the charts of Agricola and Virgiliano are the only surviving sixteenth-century fingerings for tenor. These fingerings are, for the most part, consistent. Differences are noted where they arise for individual notes. Note names are at sounding pitch on tenors; where basses are referred to it is made clear in the text, and these are also sounding pitches. The tenor flute in the AFV no. 13284 was used to prepare the data for the following discussion. It is one of the best of the original instruments, well preserved and well made, and plays easily in the range expected in historical fingering charts. It is therefore used as a reference point and comparison. Where other instruments can be compared these are referred to in the text below.

For the most part the fingering charts by Jambe de Fer, Frisius and Mersenne are not germane to this tuning study; Jambe de Fer and Frisius because they are for the G flute, which has fingerings of its own (a few fingerings are noted in the text below where they are of particular interest for comparison), and Mersenne because the fingerings are not in agreement with sixteenth-century charts and may refer to a flute of a somewhat different seventeenth-century design. For reference, all fingerings can be found in the composite fingering charts (Table 4.4.1) and also in the facsimiles of original fingering charts reproduced in App. 1.

d' The lowest note is stable in pitch, and not sensitive to embouchure adjustments. The sound is obtained easily, with a strong tone. It is the fundamental note of the flute. The first octave, d'-c'', is the least flexible for pitch bending. In consort music this octave is where most tenor parts lie (for example, in the Attaignant chansons).

e_b' E_b is obtainable only by half shading the bottom hole (6). It has a weak sound and is not a stable note. The hole size is a compromise – large enough to half shade for E_b, while small enough to manage an E natural only a bit too sharp. For a good E_b, a seventh hole is needed, but this would make an impossible hand stretch, and the only solution would be the

¹⁹ See Arthur Benade, *Fundamentals of Musical Acoustics* (New York and London, 1976), 449-55.

addition of a key. Renaissance recorders are able to support key-work, because the walls are thicker. But keys were consistently avoided on Renaissance flutes, designed as they were with extremely thin walls to enhance resonance and tone emission at the finger holes. The one-keyed baroque flute solved the problem of E \flat by adding a seventh hole covered by a key. The foot joint was made significantly thicker in order to support the key-work.

e' As mentioned above, the ideal place for the sixth hole is much lower down on the flute, but because this hole also must be reachable by the third finger of the right hand, the compromise was a hole that is too high up and very small, so the sound is weak – the weakest note on the flute. Original flutes are undercut at an extreme angle towards the bottom which has the effect of enlarging the hole from the inside and flattening the pitch somewhat.

f' This is a cross-fingered note, that is, with a pattern of alternating open and closed holes. Here five is open between four and six. Cross-fingered notes are generally softer-toned because the open hole affects the efficiency of the closed holes below. Here the problem is to make F and F \sharp compatible, since both are affected by opening Hole 5. The compromise chosen by makers was to make the fifth hole quite small, so that closing six for F can make a difference – even so, F is too high in pitch, and the small fifth hole leaves f \sharp ' too flat.

f \sharp ' The tenor fingering is about 35 cents flat, the bass fingering is too sharp. The pitch of the tenor is considered to be unacceptably low by modern players used to equal temperament, but minor adjustments can be made with breath and embouchure. F \sharp often occurs as a chromatic alteration, through the rules of *musica ficta* – for example, in cadential figures, where the minor sixth is required to be sharpened to a major sixth, and in final chords, which also require a raised third.

g' This note is stable in pitch and strong in sound. It is of interest to note that this is the only one where the first open hole (4) is not used as the middle of a forked fingering. The note is slightly flat in pitch and must be blown strongly and with an open embouchure. Closing the sixth hole is an option offered by Agricola, but this does not significantly alter the sound, and was probably suggested for stability in holding the flute.

g \sharp ' This can be shaded further by adding another finger, and still emits a strong sound. In addition to this option, Agricola offers a fingering with a half-shaded fourth hole.

a' Hole 3 is too small, for the same reason as 6, since it requires a big stretch of the third finger. But the small hole helps to keep the pitch of a' low enough.

b_♭' B_♭ and B natural are both governed by the size and placement of Hole 2, the middle hole of the left hand, which has the same relative placement as the other 'compromise' Hole 5, which governs F-F_♯. B_♭ is too sharp, but fingers were added for lowering the pitch, as indeed Agricola shows with 13 46 fingering.

b' b' is 25 cents too low, and is not a flexible note; it must be blown fairly strongly to bring the pitch up, and produces a rather raw and bland sound.

c'' This is not a stable note on the Renaissance flute, as evinced by the number of different fingerings for it. Virgiliano's and Agricola's second fingering is a forked note (Agricola's covering of Hole 6 makes no perceptible difference to the pitch, and was probably to add stability for holding the flute). The tone is markedly sharp in pitch, which makes it difficult to balance with the rest of the scale. Agricola's fingering 3 456 is not a cross-fingered note, and is more successful. It is bright and strong, and lower in pitch. It must be blown with intensity and controlled by the lips to achieve a steady tone. Jambe de Fer's fingering is only good for the bass flute; on the tenor this fingering gives a stuffy tone, and this fingering is not found on any tenor flute charts.

c_♯'' No fingerings are given in charts for the tenor by Agricola or Virgiliano.²⁰ There is a fingering for the equivalent note, F_♯, in bass charts, from which a tenor fingering can be derived. The pitch is too low, alterable by strengthening the breath. The closed sixth finger hole shown by Jambe de Fer for the bass does not affect the sound or tuning; the c_♯'' can be played without it, but keeping it down helps in balancing the flute – with an instrument so light, balance can be difficult with all fingers off the holes.

d'' As discussed above, the position of the first finger hole determines the overblown fundamental, and needs to be in the exact middle of the sounding length. The position of Hole 1 is chosen in order that its opening and closing is indifferent in producing d'', that is, it is placed at a nodal point for the stationary sound wave, or first harmonic. Opening or closing it does not affect the production of d''. This is true for all the tenors in the AFV, BCV, the Brussels Rafi and the three flutes in Rome. This optimum position is less true for basses.

Once the position of Hole 1 is determined, the ability of the left hand fingers to spread determines the position of Holes 2 and 3. This is the main reason for Hole 3 being too small, in order to be reachable by the third finger of the left hand. In basses the condition can not be kept exactly, because Hole 3 would be far too small for any emission of tone. So it is common

²⁰ Philippe Alain-Dupré, *Rafi*, 31, has conjectured that Jambe de Fer's missing chart for tenor may include a fingering for c_♯'', but no fingering is visible on the surviving fragment.

in basses to move Hole 1 down somewhat, making an enormous undercutting inside the hole (for example, the Rafi in Rome). On the bass, producing the second octave (g'') is altered more critically by opening the first hole than on tenors, and it 'jumps' off the pitch, so it must be articulated clearly.

e_b'' This note can only be produced by half shading the bottom hole. This is an acceptable note only if Hole 6 is undercut enough, which it is on most original flutes but not always enough on modern copies. While the Renaissance flute is fully chromatic, and the E_b speaks perfectly well – if quietly – with practice, it is not a stable note. The flute cannot easily negotiate scales or diminutions where E_b is an important melodic note. However, there is no shyness by Agricola regarding the availability of the note as normal on his fingering chart, but he is the only one to offer a fingering for it. In G dorian mode, the mode most frequently encountered in the chansons published by Attaignant for flutes, it is often approached from d'', when the *musica ficta* rule of 'una nota supra la semper est canendum fa', requires E to be altered to E_b.

e'' This note is 12 cents flat, and must be blown strongly and with focus. If Hole 6 could be made larger it would ease this problem. But melodically this note 'leads' strongly to F in Dorian and Phrygian melodic lines, and so playing it strongly and with clarity and intensity is often a pleasing expressive feature.

f'' Since the octave f'-f'' is narrow the f' must be tuned particularly sharp in order to have f'' any where nearly tunable. It is still too high in pitch, but must be a compromise for reasons of a bearable F#, as discussed above.

f_#'' This note is 55 cents flat. Jambe de Fer's fingering for the equivalent B natural on the bass, 123 5 half 6, is the opposite – significantly too high. It is unstable and weak on the tenor flute. It is more satisfactory to raise the too-low fingering by embouchure and even perhaps leaking Hole 4 slightly, as recommended by Ganassi and Zacconi. It is nearly always possible to produce an acceptable pure third using this technique.

g'' This note is low, producing a narrow octave with g'. The cork could be adjusted to make g'-g'' correct, then d' would need to be lipped down. Since D is the fundamental, it is best to leave the cork in the correct place for D and adjust the G octave.

g_#'' This is a cross fingering and is quite effective, and not a difficult note to tune. More fingers can be added in the right hand. Agricola gives an alternative fingering with Hole 4 half shaded, which is sharper in pitch.

a'' All fingering charts show the same fingering, which is made on the third partial of E, and not, as on the Baroque flute (and Mersenne), fingered 12. Playing a'' with the Baroque fingering is unacceptably low and coarse in tone on the Renaissance flute, although some makers have tried to tune the Renaissance flute using this fingering. Mersenne includes the 12 fingering alongside the Renaissance one, 12456.

No fingering charts suggest half-shading the third hole, as many modern makers' fingering charts do. This reflects a problem in many modern copies, where the third finger hole is made too large, and no amount of covering or lipping will bring the a'' down enough. Original instruments with small Hole 3 allow emission of this note with shimmering clarity and lightness if sufficient embouchure adjustments are made. For the bass, Jambe de Fer offers precisely this instruction when he singles this note out in his bass fingering chart, instructing to 'blow softly and well covered' for this note. On the bass flute, Hole 3 is even smaller than on tenors, due to the nearly insurmountable problem on the bass flute of matching tone hole placement with finger hole coverage (see Ch. 1.2 for more discussion of the bass flute design problems).

A change of tone colour is noticeable at a'', as well as a rather large step in the tuning, between the g'' and the a''. With this note we come to the 'break' in the flute's voice, which can best be described as a colour change between the 'chest' and 'head' registers.

b_♭'' There seems a clear preference by makers to tune the b_♭'' well at the expense of a flat b'', in keeping with the usual practice of playing the flute in modes with a B_♭, as advocated by Jambe de Fer and corroborated by numerous musical examples.

b'' All extant fingering charts show this fingering with all three right hand fingers down. This is puzzling, because it results in an extremely low pitch for the note. The unanimous fingering would suggest that one needs to blow quite strongly and lip it up; the right hand down gives the note a pronounced edge of tone, which vanishes when the sixth hole is opened. The right-hand-down fingering may also serve well in playing diminutions, to facilitate rapid passage work.

c''' Charts agree on this fingering, clear and bright in tone. Some modern makers suggest the Baroque fingering of 23 or 245 for this note, but it is stuffy and dull on the Renaissance flute, and this fingering does not allow for the 'right hand down' fingering pattern between a''-d''' which facilitates playing rapid passages.

c_♯''' There are no extant tenor fingerings for this note. Jambe de Fer does give a fingering for the equivalent note on the bass and this fingering works for the tenor too. Virgiliano's lack is explained by the fact that his chart only considers the G dorian scale, with no chromatic

fingerings. But for the otherwise thorough Agricola to have left it out is puzzling. On the tenor it is flat in pitch and must be lipped up.

d''' This is overblown from the fundamental note of the flute. Charts invariably show the first finger raised, which helps to vent the note, but really there is no audible difference between having it closed or open.

Above d''' , the sizes and under-cuttings of the holes governing changes of pitch have little influence over the notes. In the second octave, it is possible to trade off the position of the hole by altering its size and undercutting. In the third octave this practice is not successful. It is rather the position of the plug in its distance from the mouth hole which affects tuning. But since we have seen that the position of the plug is set in favour of the octave $d'-d''$, it can not be altered to help the highest few notes, after all, not the most important notes on the flute, used rarely and then only by 'experienced players', according to both Jambe de Fer and Praetorius. In general the maker has little control over the third octave, once the hole placement governing the tuning of the second octave is in place. For example, if one tunes Hole 3 in favour of the rarely used e''' , it means that a'' , a note in constant use, is too high. So makers chose to make a good a'' . The e''' can be leaked slightly at Hole 5 to raise the pitch.

Virgiliano, Agricola and Mersenne included chromatic fingerings up to a''' . Notes above a''' are not usable on a Renaissance flute (although Agricola's 1529 charts extend to a three octave range – perhaps there was something in the design of the early 'Schweitzerpfeiff', its length, finger hole placement, narrow bore – which allowed notes above a''' to be emitted. No original instruments will play these notes, so this is only speculation. Agricola does not repeat this upper range in 1545, but stops with the usual a''').

e_b''' Unlike the lower octave e_b' and e_b'' , this note is good and requires no half shading. The note is not found in any sixteenth-century repertoire, but is consistently needed in the seventeenth-century German chamber motets of Heinrich Schütz, Hermann Schein and Tobias Michael, and is usually the highest note called for in this repertory.²¹

e''' This note is too flat in pitch and must be blown quite hard, or leaked at the fifth finger hole.

f''' This is the most stubborn note on the tenor, and is not reliable even on some originals, although the longer the original flute, the more willingly the flute gives up this note. It can be

²¹ See Nancy Hadden, 'The Renaissance Flute in the Seventeenth Century', *From Renaissance to Baroque*, ed. Jonathan Wainright and Peter Holman (Aldershot, 2005), 126-33.

coaxed out, but produces a rather soft and unfocussed tone. The note is needed very rarely, only in two instances in Attaignant chansons, for example.

g''' This is a strong and clear note. The note is found rarely, but upward transpositions may have necessitated its use more than is indicated in the written repertoire. For the pattern of fingerings for notes above d'' , Virgiliano offered a practical solution for technical efficiency, which is particularly useful in playing rapid diminutions. With his fingerings one can easily play the scale $d'''-e'''-f'''-g'''$.

a''' This must be played quite loud to produce a firm, clear note. Although it is in fingering charts, it never appears in written music.

Chapter 4.8

Articulation

Among Renaissance wind instruments during the sixteenth and seventeenth centuries there was a common practice of articulating with a variety of tonguing syllables to express nuances of phrasing and rhythm. The instructions concerning this lost practice of articulation as the basis for musical interpretation were determined by conventions and rarely notated in the music. The syllables were described in a number of treatises, however, along with helpful examples of their application. The art and technique of performing the music by mastering these articulations was considered to be highly expressive and virtuosic.

Ten sources published in Italy, France and Germany between 1535 and 1677 devoted specific attention to wind articulation practices.¹ These are listed below. All of the sources shared similar information about articulation syllables and their application, and most made it clear that they spoke for all wind instruments. Francesco Rognoni, Brunelli, Mersenne and Virgiliano specifically mention the transverse flute along with the recorder, cornett and violin as being well suited to performing diminutions. Only Arbeau directs his articulation instructions specifically to the transverse flute.

Diminution treatises which discuss articulation syllables:

1. Sylvestro Ganassi, *Opera intitulata Fontegara la quale insegna a sonare di flauto chon tutta l'arte opportune a esso instrumento massime il diminuire il quale sara utile ad ogni instrumento di fiato et chorde: et anchora a chi si dileta di canto ...* (Venice, 1535).
2. Martin Agricola, *Musica instrumentalis deudsch* (Wittenberg, 1545).
3. Girolamo Dalla Casa, *Il vero modo di diminuir, con tutte le sorti di stromenti di fiato, et corda, et di voce humana* (Venice, 1584).
4. Thoinot Arbeau, *Orchesographie* (Langre, 1589).
5. Riccardo Rognoni, *Passaggi per potersi essercitare nel diminuire terminatamente con ogni sorte d'instromenti* (Venice, 1592).
6. Jerome Cardan, *De musica* (1546, printed Lyons, 1663).

¹ The original texts for all of these articulation sources are in Marcello Castellani and Elio Durante, *Del portar della lingua negli instrumenti di fiato* (Florence, 1987), Appendices 1 and 2. Not included in my discussion are two sources for trumpet, Girolamo Fantini, *Modo per imparare a sonare di tromba* (Frankfurt, 1638) and Cesare Bendinelli, 'Tutta l'arte della trombeta' (1614).

7. Antonio Brunelli, *Varii Eserciti ... per una, e due voci ... per I quail si potrà con facilità acquistare la dispositione per il cantare con passaggi; e per esercizio di Cornetti, Traverse, Flauti, Viole, Violini, e simili strumenti ...* (Florence, 1614).
8. Francesco Rognoni, *Selva de Varii Pasaggi parte seconda, ove si tratta dei pasaggi difficili per gl'instromenti del dar l'archata, portar della lingua, diminuire di grado in grado* (Milan, 1620).
9. Marin Mersenne, *Harmonie Universelle, livre cinquiesme* (Paris, 1637).
10. Bartolomeo Bismantova, *Compendio musicale* (Ferrara, 1677).

Treatises held that the voice was the model for all instrumental playing in the Renaissance; instruments were but a pale reflection of their art. The 'speaking' articulation of singers was of primary importance for the musical education of wind players, but we have the paradoxical situation today that singing in historical style is difficult to interpret from the sources, so that, in order to come closer to the conception of a vocal sound of the Renaissance, singers today are often guided by the sounds and techniques of historical instruments.²

In Renaissance music, melodic notes which were important structurally and musically were brought out by tonguing them clearly with strong articulation. The long notes which carried the text were played with single tonguing on wind instruments – either the syllable *te*, spoken on the teeth, or *de*, a little softer and formed on the palate. These were used for all main notes and the first note of division passages.

Fast notes, on the other hand, were ornamental, subordinate to the melody, and played with much gentler articulation syllables. The systematic use of paired tonguings created patterns of strong and weak stresses, the 'good' note beginning with 't' or 'd' and the 'weak' note with 'r'. The resulting patterns gave shape and expression to the music and facilitated rapid articulation over long passages of very fast diminutions. Being able to articulate rapidly and clearly was an essential ingredient in the Italian art of diminution. Performers were expected to memorize the articulations and learn to apply them appropriately, as Ganassi made clear:

You must know that the efficiency of your finger-work depends on two things: articulation and the art of playing divisions. The one without the other is useless. Should you have the best articulation imaginable yet have no knowledge of divisions, your pains would be in vain. The contrary is also true.³

² A point also made by Richard Erig, *Italian Diminutions* (Zurich, 1979), 31.

³ Ganassi, *Fontegara*, trans. H. Peter, 15.

There were three types of fast tonguings, each of which joined two syllables together: *lere* was the most important of these, because of its gentleness and speed. It was called *lingua riversa*, described as *dolce*. Several writers likened it to the virtuosic throat technique used in singing, and Rognoni said that it was the preferred tonguing of the best players. It is certainly the most important tonguing used for diminutions. When performed very fast, it melts into *ler*, according to Ganassi, Dalla Casa and Riccardo Rognoni. The German writer Agricola translated this type of tonguing as *tellell-le*, which he says is used for the fastest notes. He called this *die flitter zunge* (flutter tongue).

Tere, *diri* and *dere* were classified as *lingua dritta*, or direct tonguing, performed with a 'straight tongue' on the teeth, followed by a palatal 'r' (which is really closer to a 'd'). *Dere* was considered by Dalla Casa to be *per natura leda* (slow and weighty), and was used for quavers and semi-quavers to group the notes clearly into pairs.

All of the known articulation syllables from original sources are shown in chronological order in Table 4.8.1. These tonguings will be referred to and explained in the discussion following.

Table 4.8.1. Tonguing syllables in the treatises

Author	Date	Single tongue	<i>lingua dritta</i>	<i>lingua riversa</i>	Double tongue	Unarticulated
Ganassi	1535	<i>te, de</i>	<i>tere (tiri, toro, turu) dere (dara, dare, dari, daro, daru)</i>	<i>lere (lara, liri, loro, luru)</i>	<i>Teche (tacha, tichi, tocho, tuchu)</i>	<i>lingua di testa</i>
Agricola	1545	<i>de</i>	<i>Diri</i>	<i>tellell</i>		
Cardan	1546		<i>There</i>	<i>lere</i>	<i>theche</i>	
dalla Casa	1584	<i>te de</i>	<i>Tere Dere</i>	<i>ler ler der ler ter ler</i>		<i>lingua morta</i>
Arbeau	1588	<i>té</i>	<i>Tere</i>	<i>relé (re lére)</i>		
R. Rognioni	1592	<i>te de</i>		<i>ler ler der ler ter ler</i>		
F. Rognoni	1620	<i>te</i>	<i>Tere</i>	<i>lere dere tere</i>	<i>teche</i>	
Mersenne	1636	<i>ta</i>	<i>ta ra ra ra tata rata tara tara</i>			<i>coulant ou muette taaa</i>

Ganassi (1535) was the first to describe the various tongue strokes in detail:

...there are three basic kinds of articulation. We have the first kind in these two syllables *te che te che*. The second is *tere tere tere te*. The third is *lere lere lere le*. These three kinds have a link in common. That is that the first kind (*te che te che*) consists of syllables that are hard and sharp (*crudo et aspro*): the third kind [*lere lere*] consists of gentle and smooth syllables (*piacevole over plane*): the link between them is the second kind *tere tere tere tere te* and is intermediate because the first syllable belongs to the first kind and the second

belongs to the third kind and therefore has the temperament of each of the two extremes of hard and soft.⁴

Ganassi offered in his charts all the possible combinations of vowels and consonants, to allow the player to decide upon the syllable or letter which comes most naturally and which can be uttered at the greatest speed. These two concepts provide the key to an understanding of why the syllables are there in the first place: the syllables combined the elements of natural and expressive playing with virtuosity and speed, both of which were of paramount importance in the performance of the Italian diminution repertoire.

Later sources concurred with Ganassi's basic classifications of articulation into sharp, intermediate and soft consonants, but no source was as comprehensive as Ganassi with regard to vowels. The German writer Agricola preferred *de* for single tonguing, *diri* for faster notes, and *tellel-lel-le* for the fastest notes.⁵ Arbeau described 'two ways' of tonguing the *fifre*. The first he described as 'sucking' the tongue with *te* or *tere*, the second way was 'rolling' the tongue, *rele rele rele*. He gave preference to single tonguing *te* for military music 'because the sound of *te* is shriller and harsher, consequently more war-like', and did not describe the use of any of the other tonguings.⁶ Vowel differences between the Italian, German and French sources may reflect language preferences. Application of the syllables depended on the expressive qualities and speed required.

Single Tonguing

The hard tongue strokes *te* and *de* were known as *lingua dritta*, formed on the tip of the tongue just behind the teeth. They are sonorous and strong, used for minims and crotchets in slow melodies, for repeated notes on the same pitch and at the beginning of groups of two or more quavers in *passaggi*. The softer *de* works better on the Renaissance flute, but no source distinguishes softer tonguings as best for flute until Hotteterre (1707), who described the flute as using the softest tonguing: 'twill be proper to observe that tipping with ye tongue ought to be more or less articulate according to the instrument on which you play, for 'tis soften'd on ye German Flute, more distinct on the Common Flute, and very strong on the Hautboy'.⁷

⁴ Ganassi, *Fontegara*, trans. H. Peter, 13-14.

⁵ German tonguings given by Agricola are still in use by Quantz, 1752, as *ti-ri*, *di-ri* and *did-ll*, while the French sources shifted vowels, from *ta-ra* to *tu-ru* by the time of Hotteterre; see Jacques-Martin Hotteterre, *Principes de la flûte* (Paris, 1707), trans. David Lasocki (New York, 1968), 36-44.

⁶ Arbeau, *Orchesographie*, trans. Evans, 40.

⁷ Jacques Martin Hotteterre, *Principes de la flûte* (Paris, 1707), trans. *The Newest Instructions for the German Flute* (London, 1729), 18.

Paired Tonguing

Single tonguing is not sustainable for quick passage-work – the tongue begins to slow down after three or four notes at fast speeds (for the flute, somewhere between ♩ = 110-120). To counter-act this problem, players developed a system of paired tonguings, which alternated softer consonants ‘r’ and ‘l’ with direct ones to avoid fatigue and increase the speed at which long passages could be tongued. These soft tongue strokes were called *lingua riversa*, because they were made by the tongue literally rolling back against the palate. They were not pronounced at the back of the throat as in English, but were Italian dental consonants: ‘r’ was pronounced with the tip of the tongue, like a soft ‘d’. ‘l’ used the tip and the sides of the tongue. Ganassi described reversed and direct tonguing as follows:

In articulating, one differentiates between the so-called direct strokes of the tongue and those that are reversed. The direct articulation of syllables is nearest the first basic form [*te* or *de*], whereas the reversed syllables are hardly articulated at all, like in the third basic form [*lere lere*]. In rapid repetition, the stroke of the tongue is lost and is therefore called reversed.⁸

Italian sources after Ganassi were systematic and comprehensive in their discussion of paired tonguings. All of them described two kinds of paired tonguings and three combinations of *lingua riversa*. The first category of paired tonguings alternates direct and reverse syllables *tere tere* or *dere dere* (German *diri*, French *tara*).⁹ These were not fast enough to negotiate the extensive passage-work required in Italian diminutions, however, and the musical examples in Agricola and Dalla Casa used paired syllables up to the value of quavers. Francesco Rognoni said that this tonguing was good up to the value of *croma*.

The paired tonguing *teche* was thought to have a harsh effect, and was therefore not recommended by Renaissance writers unless for exceptional use. It was called *cruda e aspro* by Ganassi, and was condemned by Dalla Casa as:

é lingua cruda per sonatori, che vogliono far terribilità non è troppo grata all’orecchio è per natura veloce e difficile da raffrenar.

A harsh tonguing for players who wish to make a fearsome effect, and by nature fast and difficult to control.

⁸ Ganassi, *Fontegara*, trans. H. Peter, 14.

⁹ In the French flute method by Taffanel-Gaubert, *Méthode Complète de Flûte* (Paris, 1928/rpt. 1953), 90-1, *te-re* is recommended for dotted rhythms; few modern players pay any attention to this articulation.

Francesco Rognoni agreed that *teche* was ‘di natura cruda, e Barbara, e di disgusto a gl’ascoltanti’ (by nature harsh, barbarous and offending the taste of the listener).¹⁰ No French sources included this tonguing. Eighteenth century sources also criticized it as being too regular and lacking in nuance and expression.¹¹

Of all the historic tonguings *teche* is the most familiar to modern wind players. It is also the one least successful on the Renaissance flute, because with *che*, using the back of the tongue, the air stream is difficult to control, the tone is airy and less sonorous and there is a noticeable chuff on the attack, with a distinct separation between the notes. However, it survives today as the double-tongue *te-ke* on the modern flute.¹²

Paired tonguings were of limited use in Italian *passaggi*, because they simply could not be tongued quickly enough. For longer and faster passage work, players switched from paired *tere* or *dere* to *lingua riversa* in combinations involving the softest syllables, *lere* (*tellelelle* in German).¹³ These syllables were used for *croma* (quavers) *semicroma* (semi-quavers) and above, and described in Italian treatises and German treatises. The French seem not to have made much use of *lingua reversa*. Arbeau’s ‘rolled tonguing’ (see above) described a kind of *lingua reversa* but he did not advocate its use, and no *lere* syllables were included by Mersenne at all.

Francesco Rognoni identified three different modes of *lingua riversa*:

... la prima è detta riversa, è la principale, per esser simigliante all gorga della voce humana; questa è velocissima, e difficile da rafrenare, il batter suo è al palato, e si proferisce in trè modi. Il primo è, *le re le re le re le*, lingua dolce, e soave. Il secondo è, *de re de re de re de*, è mediocre. Il terzo è, *de re te re de re te*, è il più crudo.

The first is called reversed, and it is the principal [kind] because of its similarity to the *gorgia* of the human voice; it is very fast, and difficult to restrain. Its striking point is at the palate, and it is pronounced in three ways.

The first is *le re le re le re le*, a soft and smooth tonguing. The second is *de re*

¹⁰ See discussion and translation of both Francesco and Riccardo Rognoni in *Riccardo Rognoni, Passaggi per potersi essercitare nel diminuire* (Milan, 1620), trans. Bruce Dickey (Bologna, 2002), 42.

¹¹ For example, François Devienne, *Nouvelle Méthode Théorique et Pratique pour la Flûte* (Paris, 1794), quoted in Powell, *The Flute*, 211 as being dismissive of the double-tonguing, which he called ‘dougou’.

¹² See for example, Taffanel-Gaubert, *Méthode Complète de Flûte*, 92-6.

¹³ Agricola (1545), f. 35, gives *tellelelle/le* -- he calls this ‘flutter-tongue’ (*flitter zunge*), used for semi-quavers in *Colorim*.

de re de re de and is intermediate. The third is *de re te re de re te* and is the hardest.¹⁴

Dalla Casa described the same three types of *lingua riversa* in slightly different terms:

la lingua riversa, la principal delle tre lingue la metteremo nel primo loco, per haver lei la simiglianza della gorgia piu che l'altre. Et si dimanda lingua di gorgia. Questa lingua è velocissima, è difficilie da rafrenar, lo batter suo è al palato, è si proferisse in tre modi. *Ler, ler, ler, ler, der, ler, Ter, ler, ter, ler*. E'l primo è proferir dolce. Il secondo è mediocri, è il terzo è piu cruod de gli altri, per esser piu pontata lingua.

Since the *lingua riversa* is the principal type of tonguing, we will discuss it first, for it is more similar to the *gorgia* type of articulation than the others. And it does require *gorgia* tonguing. This type of tonguing is extremely fast, and difficult to control. Its beating is on the palate, and it proffers itself in three ways: *Ler, ler, ler, ler, der, ler, Ter, ler, ter, ler*. The first is to be done softly, the second is medium, and the third is harder than the others, being a more pointed tonguing.¹⁵

Whatever the exact combination of syllables, they produced clarity through various degrees of articulation on every note, and created alternating strong and weak stresses. Ganassi pointed out that *lerelele* 'naturally melts into one'; the audible effect is very close to slurring but with a subtle lifting of each note.

The aim of perfect articulation was to achieve variety through variations of simple patterns, and to allow the tongue to work efficiently and quickly without tiring. Long phrases were never slurred, but wind players relied instead on skilful employment of *lingua riversa*. The syllables created strong and weak stresses within the phrase, mirroring the irregular rhythms and stresses of Renaissance poetry.¹⁶ This is not to suggest that combinations of direct and reverse tonguings had a textual meaning in themselves. But the consonants interrupt the air stream in imitation of the vocal technique known as *gorgia* or *ghorga*, where untexted passage-work was lightly articulated in the throat, inflecting the musical phrases by breaking them into

¹⁴ See *Riccardo Rognoni* (Milan, 1620), trans. Bruce Dickey (Bologna, 2002), 42.

¹⁵ Translated in Jesse Rosenberg, 'Il vero modo di diminuir' *Historic Brass Society Journal*, 1 (1989), 111.

¹⁶ See Claude Palisca, *Humanism in Italian Renaissance Musical Thought* (New Haven and London, 1985), especially 'Mei on tonic accent', 348-55, for a discussion of Italian poetic theory and performance in the sixteenth century.

many smaller gestures. Dalla Casa wrote of the *gorgia* style in relation to tonguing on the cornett:

Vuol esser sonato con discretione, e giuditio. La lingua vuole esser ne troppo morta, ne troppo battuta: ma vuole esser simile alla *gorgia*. Poi nella Minuta far poca robba, ma buona. Si che ogn'uno tendi al bel stromento, alla bella lingua, e alla bella Minuta, e ad imitar piu la voce humana, che sia possibile.

It [*cornetto*] should be played with discretion and good judgement. The tongue should be neither too dead nor too strongly articulated but should be similar to the *gorgia*. Moreover, with divisions [*minuta*] do few things, but make them good. So, let everyone strive for a good tone, good tonguing and good divisions and imitate as much as possible the human voice.¹⁷

Francesco Rognoni echoed Dalla Casa almost exactly:

Vuol ancora esser suonato, con discretione, e delicatezza, cercando d'imitar la voce humana, è la lingua vuol'esser, nè troppo morta, nè troppo battuta, mà simile alla *gorgha*; è questo è il far buon'instromento.

You should play with discretion and delicacy, seeking to imitate the human voice; and the tongue should be neither too dead nor too struck, but rather should be similar to the *gorgia*; these are necessary for mastery of the instrument [*cornetto*].¹⁸

Dalla Casa and Rognoni are especially important sources today, because they both printed musical examples which have the syllables printed underneath the music. These exercises enable musicians now to see exactly how the tonguings were applied to standard Italian diminution patterns. Rognoni's exercises, more varied than Dalla Casa's, are shown in Ill. 4.8.1 below.

¹⁷ Jesse Rosenberg, 'Il vero modo di diminuir', 112.

¹⁸ Bruce Dickey, trans., *Riccardo Rognoni*, 42.

3. Strings of quavers or semi-quavers were irregularly divided, using *te* whenever there was a large skip or change of note value, rather than to mark divisions of the beat or tactus. The accented syllable was always *te*. This gave a linear irregularity to long strings of notes, much the same as in poetic recitation.
4. All notes were articulated. An exception may be the demi-semi-quaver *grosso* notated on the penultimate line; however, this same figure was notated at the end of line two with syllables *lerelerelerelere*. It is possible that Rognoni meant to indicate that one can tongue or slur this figure. If the latter, his example is exceptional.
5. Rognoni did not include *teche* in the musical examples above, although he mentioned it in his text (see above). Presumably he did not approve of its use.

The various combinations of *lingua riversa* seem to have been obsolete by the end of the seventeenth century. The latest source to describe them was Bartolomeo Bismantova in 1677, writing about the recorder and cornett.²⁰

Inequality

Notation is an approximate way of describing rhythm, but it is inadequate to the task. Minute subtleties of rhythm and inflection can be produced by singers through the text, and these must be imitated in wind playing by the use of *lingua riversa*. Articulation syllables can produce natural strong and weak accents, and they also can aid in producing rhythmic inequality. Renaissance references indicate that inequality could be either long-short or short-long, and even when notated as equal rhythms, some degree of inequality was often applied. Inequality is well-known today as an important feature of Baroque style, called ‘pointing’ in eighteenth-century English sources.²¹

Less well-known is the fact that ‘pointing’ had its beginnings in the early sixteenth century. The earliest musician to illustrate this concept was Loys Bourgeois (*ca.* 1510-60), a musician, teacher and writer of Calvinist psalm tunes, who lived and worked in Paris, Lyons, Geneva, and Paris again. In his little treatise, *Le Droict Chemin de Musique* (Geneva, 1550), Bourgeois wrote that when singing step-wise pairs of *demiminimes* (crotchets), the first should be held a little longer, as if the first note had a dot (‘comme si la premiere avoit un point’). The second note then became a quaver (*fuse*), because most often the first note is a

²⁰ Bartolomeo Bismantova, *Compendio musicale* (Ferrara, 1677).

²¹ See Bruce Haynes, *The Eloquent Oboe* (Oxford, 2001), 241-3, for examples of pointing from eighteenth-century treatises.

consonant note, the second is a discord or a false accord ('la seconde est le plus souvent un discord, ou, comme on dit, un faux accord'); singing them this way, they have more grace ('elles ont meilleure grace').²² Lest there be any doubt about his meaning, Bourgeois illustrated his rules with musical examples to show how equal crotchets should be performed as dotted crotchets-quavers and similarly, equal quavers as dotted quavers-semi-quavers (Ex. 4.8.1.). These instructions, simple, explicit and matter-of-fact, show that playing step-wise passages as *notes inégales* was known by 1550. This style may have exerted an influence on the performance of French chansons and dance music, and perhaps also the Calvinist psalm tunes which were arranged by Bourgeois himself.



Ex. 4.8.1. Loys Bourgeois, *Le droict chemin de musique* (1550), showing how to perform step-wise crotchets and quavers *inegales*.

Other types of inequality were introduced in Italian practice. The Florentine Antonio Brunelli's *Varii Esercittii* (Florence, 1614), a book of exercises for playing *passaggi* on violin, cornett, recorder and *traverse*, is of particular interest: Brunelli's printed examples show different ways of performing quaver passages: the first, performed equally, was called *passo ordinario*; the second way, long-short, was *miglio* (better), and the third, short-long, *migliore* (best). All of them should be performed 'according to the new manner of singing', in which singers articulated these passages in the throat – but Brunelli cautions that semiquavers should not be articulated in this way, due to their speed ('perche le crome debbono cantarsi punteggiate e ribbatute con la gola...le semicrome non si cantano punteggiate et questo avviene per le loro velocità').²³

In some late sixteenth-century Italian diminution repertoire inequality such as that described by Brunelli, which was to be added by the performer to equally notated passage-

²² For Bourgeois's complete text and musical examples, see Loys Bourgeois, *Le droict chemin de musique* (Geneva, 1550), facs. R. (Kassel and Basel, 1954), Ch. 10.

²³ For a complete edition of the music see Antonio Brunelli, *Varii Esercittii*, ed. Richard Erig (Zurich, 1977).

Slurring in Pairs

The use of paired slurs seems to have been associated almost exclusively with music in the French secular style. The earliest indications for this are to be found in sixteenth-century rules for text underlay, which single out the manner of singing pairs of quavers to one syllable of text as being suitable for French chansons. In his rules for text underlay in French music of the Josquin and Willaert generations, Gaspar Stocker indicated that paired slurs were a particular feature of French chansons:

Two minims or semiminims may sometimes receive one syllable which is applied to the first note and held out for the second [¶¶ or ¶¶].²⁹

A related convention was described by Giovanni Maria Lanfranco, who allowed for short note-values within a series to carry text when the music was in the French style (this is at variance with other text underlay rules which dictated that notes shorter than a minim did not ordinarily carry text):

The initial semi-minim of a series must necessarily carry its own syllable; proper usage rules out giving a syllable to the middle ones...exceptions occur in works imitating the French chanson.³⁰

The French chansons published by Attaignant contain many obvious examples where the above rules for text underlay should be applied – even taking into account the rather haphazard printing of the text – where pairs of notes, either isolated or in a series, were meant to be sung to a single syllable. These paired syllables have strong implications for instrumental performance too. Groups of notes sung to a single syllable must have been slurred in instrumental performance, to imitate the singers' style. Of particular interest here are the chansons which were singled out for performance by Renaissance flute consorts. All of the Attaignant flute chansons are edited in App. 2. A few short examples here will illustrate places where pairs of notes sung to a single syllable might be slurred when performed instrumentally:

²⁹ Gaspar Stocker, *De musica verbali libri duo*, ca. 1570; quoted in Don Harrán, 'New Light on the Question of Text Underlay Prior to Zarlino', *Acta Musicologica*, 45 (1973), 24 and 42.

³⁰ Giovanni Maria Lanfranco, *Scintille di musica* (1553), Rule VI, quoted and translated in Don Harrán, 'New Light on the Question of Text Underlay Prior to Zarlino', *Acta Musicologica*, 45 (1973), 41.

Jec - tes moy sur l'her- bet - te__ mon a my...

A - mours a - mours vous me__ fai - ctes__ grant__ tort...

Par - le__ qui__ veult...

Ex. 4.8.3. The opening bars of the soprano parts to three chansons published for flutes by Attaignant in 1533: 'Jectes moy sur l'herbette', 'Amours, amours', and 'Parle qui veult', with paired syllables in the text, which may be imitated by slurring in pairs for instrumental performance.

Italian composers also made use of paired slurs in light secular musical genres which were in conscious imitation of the French style, such as the *canzonette*, *villanesche*, dance songs and *canzone Francese*. Numerous examples can be found in works by Marenzio, Vecchi and Gastoldi. In Monteverdi's 'Confitebor tibi Domine', *Selve morale e spirituali* (Venice, 1641) the third section carries the title 'Confitebor terzo alla Francese'. Pairs of slurred quavers, in which two notes are sung to a single syllable, are the main feature of the music, and it is this feature (Ex. 4.8.4) which seems to distinguish it as *alla francese*.³¹

Solo

Con-fi - te-bor ti - bi__ Do - mi - ne in to-to cor - de me - o__

5

in con-si - li - o__ ju - sto-rum et con - gre - ga - ti - o - ne.

Ex. 4.8.4. Monteverdi, 'Confitebor terzo alla francese', b. 1-9 (slurs are original).

³¹ Example from Claudio Monteverdi, *Tutte le opera di Monteverdi*, ed. Francesco Malipiero, xv (Vienna, 1967), 357-8.

The only tonguing instructions which ‘brought slurred notes into the wind player’s language’³² were, in fact, from a French source from around the same time as Monteverdi’s *Selve morale e spirituali*, Mersenne’s *HU* (1636), which introduced slurs for articulating in pairs, expressed as *taa* in printed musical examples for the *cornet au bouquin*:³³



Ex. 4.8.5. Mersenne, *HU*, 1636, example for slurring in pairs with the articulation *taa*.

Slurring in pairs may also indicate a difference between playing chains of step-wise notes unequally, where they would be articulated, and playing them slurred in pairs, where they would be equal. This was to become an important distinction made in the performance of French Baroque music.³⁴

Slurring of Cadential Ornaments

Ganassi, Rognoni and Mersenne illustrate cadential ornaments in which tonguing was dispensed with altogether.³⁵ Presumably, slurring acted as a technical aid for playing the fastest notes. For example, in the penultimate line of Rognoni's tonguing exercises above (Ill. 4.8.1), the demi-semi-quavers carry no syllables. Mersenne also advocated cadential slurring as an option for wind players, which he called *coulant ou muette*, where the sound was made only with the air ('se fait simplement avec le vent').³⁶ Cadences, he said, should be played with strong accentuation (*martelemens* – literally, hammering), as *tara tara tara ta* until the execution of the final ornament, where the hammering gave way to slurring:



Ex. 4.8.6. Mersenne, *HU*, 1636, examples for cadential slurring, *coulant ou muette*.

³² According to Richard Erig, ed., *Italian Diminutions*, 38.

³³ Mersenne, *HU*, facs. Lesure (Paris, 1965), 274-5.

³⁴ Numerous composers used the system of slurring pairs of quavers to indicate equal performance; see for example François Couperin, *L'art de toucher le clavecin* (1716), whose advice to keyboard players made it clear that slurred pairs of quavers should be performed equally.

³⁵ Ganassi's *lingua di testa* (literally 'head tonguing') implies a slur, but no further information was given by him (see Table 4.8.2 above).

³⁶ Mersenne, *HU*, facs. Lesure (Paris, 1965), 274-5.

Mersenne called this slurred ornament *tremblement*, which rendered the cadence more sweet and gentle ('plus douce et plus amiable') in imitation of the voice and the most excellent way of singing ('qu'elle imite la voix et la plus excellente methode de bien chanter').³⁷

New Articulation Practices

As styles of music developed and changed in the seventeenth century, so performance practices changed with them. Articulation practices are probably one of the most significant and revealing aspects of performance practice to signal the changes from Renaissance to Baroque styles. The new music was filled with slurs – no longer were singers and instrumentalists expected to perform ornaments and passage-work in an articulated way. The articulated *passaggi* of the Renaissance gave way to the sighing *port-de-voix* and *accent*, disappearing *tremblement effacé* and delicate roulades of the new 'affective' French style, found in the court *airs* and dance music of Guedron, Moulinié, Bacilly, and Lully, and in the *Airs* for flute by Marais, la Barre, Hotteterre and Montclair which began to appear in the late seventeenth century.³⁸ Italian Baroque composers favoured fiery long-breathed slurred *passaggi* (Italian music for flute was almost entirely adapted from violin music). Slurring two, three, four and more notes together became common practice, and by the mid-eighteenth century slurs were favoured not only as expressive devices but as a technical aid for playing faster.³⁹

³⁷ Mersenne, *HU*, facs. Lesure (Paris, 1965), 274-5.

³⁸ The French singing teacher Bénigne de Bacilly was among the most eloquent to describe French ornamentation in his *Remarques curieuses sur l'art de bien chanter* (Paris, 1668), trans. Austin Caswell, *A Commentary upon the Art of Proper Singing, Music Theorists in Translation*, 7 (New York, 1968).

³⁹ Quantz, *Versuch* (1752), 78, advocated alternating slurred semi-quavers in pairs with tongued ones for fast passage-work.

Conclusions

The Emerging Baroque Style and the End of the Renaissance Flute

The Renaissance flute was not often scored for by composers after about 1600.⁴⁰ In Italy, Monteverdi scored for a pair of flutes in the ‘Magnificat’ section of the Vespers (1610) and in the madrigal setting of Giovanni Battista Marino’s ‘sonnetto boschereccio’ ‘A quest’olmo, a quest’ombre’ (*Settimo libro*, Venice, 1619). In both scorings, the flute has a particular resonance, as a pastoral ‘antique’ instrument in the case of the madrigal, and a ‘humble’ one in the Magnificat text ‘quia respexit humilitatem’ (for he hath regarded the low estate...⁴¹). Diminution treatises by Aurelio Virgiliano (*ca.* 1600), Francesco Rognoni (1620), and Antonio Brunelli (1614) include the transverse flute amongst the instruments best able to perform diminutions.

In Germany, the flute remained in use in northern cities until about 1650. Its use was restricted entirely to sacred works by Michael Praetorius at Wolfenbüttel, his successor Daniel Selich, the Dresden composer Heinrich Schütz, who studied with Giovanni Gabrieli and Monteverdi in Venice, Johann Hermann Schein at St. Thomas’s in Leipzig and Schein’s successor, Tobias Michael.⁴²

A small digression must also be made here to discuss one more piece, written by Michael’s successor at Leipzig, Sebastian Knüpfer (1633-1676). His chamber motet ‘Ach Herr, strafe mich nicht in deinem Zorn’, composed between 1670 and 1675, has parts for two flutes (a bit late for Renaissance flutes, a bit early for Baroque flutes). But the intended instrumentation remains unclear, and the parts pose some puzzling features.

The music is preserved in two manuscripts with conflicting indications: Berlin, Staatsbibl. MS 11780, copied in 1700, 24 years after Knüpfer’s death, has parts marked ‘traversi’, which by 1700 certainly meant one-keyed Baroque flutes; a second set of un-dated parts now in Dresden, Sächsische Landesbibl. Mus. MS 1825-E-501, has parts marked ‘flauti’ (this was the term usually used for recorders – see Ch. 1.4 for further discussion of the terms for flutes and recorders, and their historical uses). The specific terms ‘flauti’ and ‘traversi’

⁴⁰ For further discussion of the flute and its repertoire in the seventeenth century see Nancy Hadden, ‘The Renaissance Flute in the Seventeenth Century’, *From Renaissance to Baroque*, ed. Jonathan Wainwright and Peter Holman (Aldershot, 2005), 113-144.

⁴¹ Nancy Hadden, ‘The Renaissance Flute in the Seventeenth Century’, 121-2; the madrigal is also discussed in Gary Tomlinson, *Monteverdi and the End of the Renaissance* (Berkeley, 1987), 166-7, 179, 183.

⁴² For further discussion of these composers’ works for transverse flutes, see Nancy Hadden, ‘The Renaissance Flute in the Seventeenth Century’ (2005), 125-33.

indicate a change of instrumentation in the two manuscripts, probably for reasons of practical necessity to do with available players in a given time and place.

In my article of 2005, I stated my reservations concerning the suitability of Knüpfers' piece for Renaissance flutes.⁴³ The parts are notated in the Renaissance manner, an octave below sounding pitch, but the piece is written in the unusual key of C minor, which is not a key suited to Renaissance flutes. Some passages are unplayable on flutes due to the awkward chromaticism (nor is it much easier for recorders, leaving aside the question of transposition by wind instruments, which is unlikely here due to the ranges of the parts). The tessitura of flute I is extreme, ascending often to *g'''*. These features mitigate against the piece having been intended for performance on Renaissance flutes. But Baroque flutes were not in wide-spread use when the piece was written. The notation, an octave below sounding pitch, along with the high tessitura of flute I makes Baroque flutes an unlikely choice. The original instrumentation remains a conundrum.⁴⁴

The Knüpfers conundrum raises another issue, which is the failure of some music historians to pay attention to differences in sixteenth- and seventeenth-century terminology for transverse flutes and recorders. This has resulted all too often in false attributions of instrumentation in modern editions and music catalogues.⁴⁵ It is absolutely crucial for modern performers and historians to heed the historic names given to instruments and to maintain original terminology, in order to avoid misleading translations.

⁴³ See Nancy Hadden, 'The Renaissance Flute in the Seventeenth Century', 133. Boaz Berney, 'The Renaissance Flute in Mixed Ensembles: Surviving Instruments, Pitches and Performance Practice', *EM* 34 (2006), 218-221, includes Knüpfers' piece in his list of Renaissance flute music without reference to my published discussion of 2005. He suggests that the flutes might have transposed up one tone, but this is unlikely, and raises further questions and problems which are not addressed by Berney.

⁴⁴ A discussion of early Baroque flute playing in Dresden is beyond the scope of this thesis. For a detailed discussion and valuable new material about Dresden flute playing, and her interpretation of the meaning of the term *flauto* in Dresden musical scores, see Mary Oleskiewicz, 'The Flute at Dresden: Ramifications for Eighteenth-Century Woodwind Performance in Germany', *From Renaissance to Baroque*, ed. Jonathan Wainright and Peter Holman (Aldershot, 2005), 113-144, and Mary Oleskiewicz, 'Quantz and the Flute at Dresden: His Instruments, His Repertory, and Their Significance for the *Versuch* and the Bach Circle', Ph. D. diss. (Duke University, 1998), 17-67. For a recording of Knüpfers' piece using recorders, see *Sacred Music by Sebastian Knüpfers*, The King's Consort, dir. Robert King (Hyperion compact disc CDA67160, 2000).

⁴⁵ For example, *flauto* is consistently translated as 'flute' in Diane Parr Walker and Paul Walker, *German Sacred Polyphonic Vocal Music Between Schütz and Bach* (Detroit, MI, 1992). This obscures the problematic meaning of the term, and the flute vs. recorder question, and makes their otherwise valuable catalogue unreliable in this respect. I have found that most of the early seventeenth-century music they identify for 'flute' is not flute music, but recorder music.

The emerging Baroque style spelled the demise of most Renaissance wind instruments – and signalled the end of Renaissance flute playing.⁴⁶ Whilst the Renaissance flute was supremely able to execute the rapidly articulated diminutions so popular in the sixteenth century, it was singularly ill-equipped to manage slurred passages and complex Baroque ornaments. This was partly due to the cross-fingering patterns, which made slurring awkward and lacking in clarity, and the lack of a good E_b, which made certain trills nearly impossible. It was also partly due to the quality of its sound, which was light, clear and penetrating in the second and third octaves, but lacked presence in the lower octave.

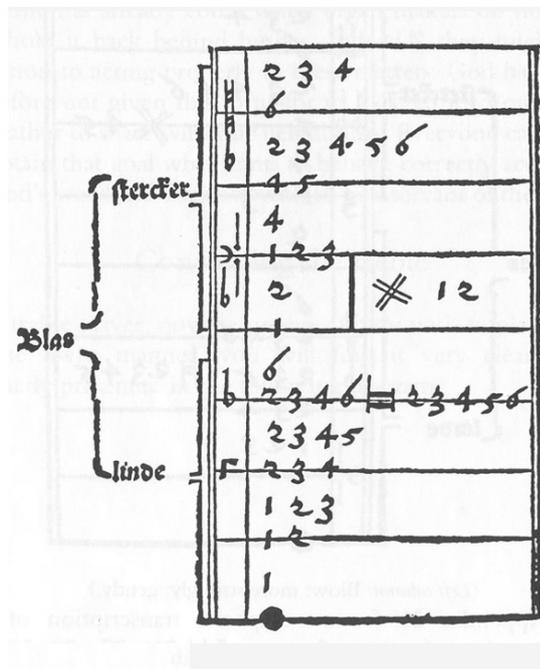
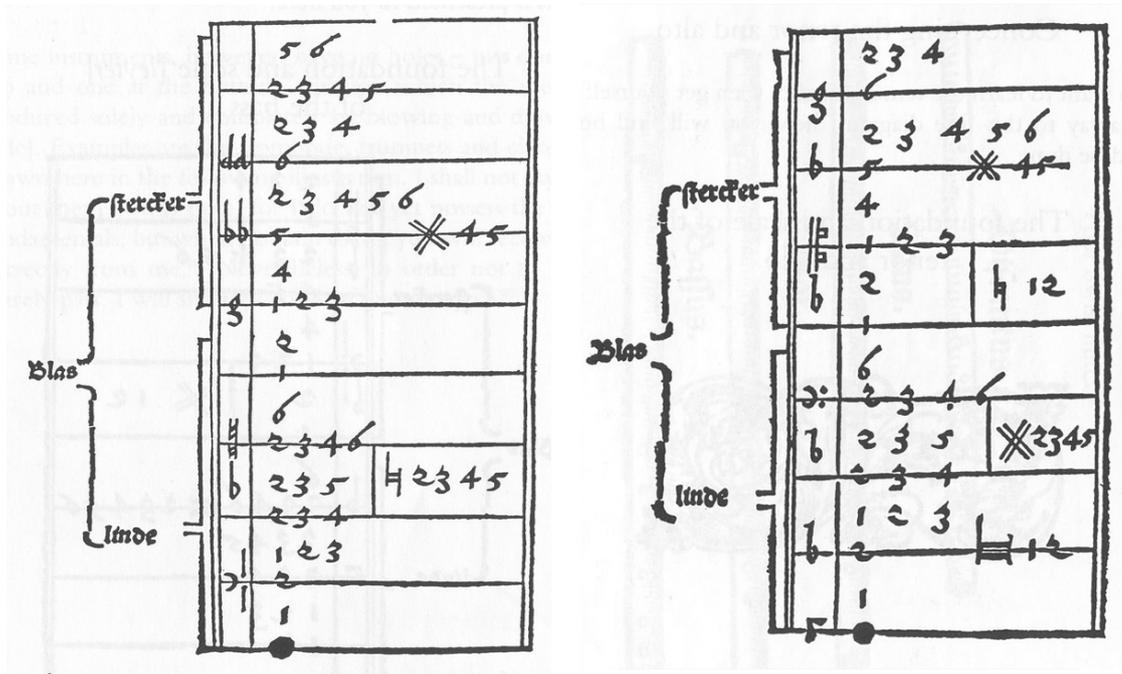
By the 1670s the conically-bored Baroque flute had come into being. With its rich and expressive low register, the addition of a single key for E_b, and less cumbersome second-octave fingerings, the Baroque flute could cope with the expressive and technical demands of new music, and the Renaissance flute ceased to be used in art music.

⁴⁶ See Nancy Hadden, 'The Renaissance Flute in the Seventeenth Century', *From Renaissance to Baroque*, ed. Jonathan Wainright and Peter Holman (Aldershot, 2005), 113-44 for a discussion of the transition between Renaissance consort flutes and the flutes of the Baroque period.

Appendix 1. Original Fingering Charts

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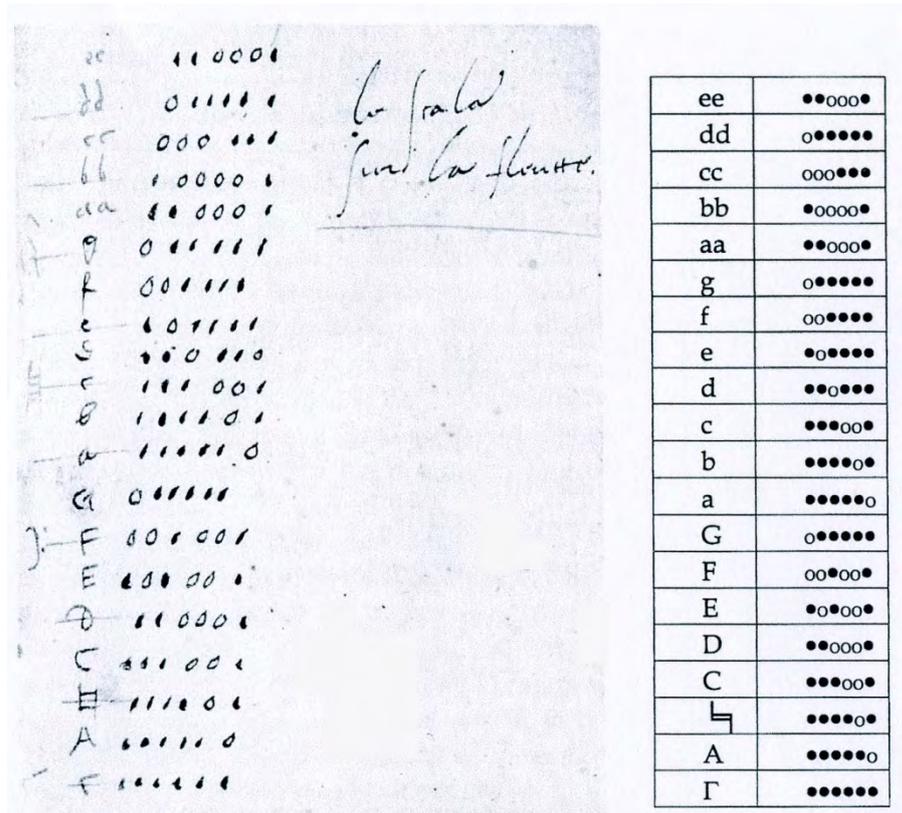
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2. Martin Agricola, *Musica instrumentalis deudsch*, 1545:
Scalae Irregulares for discantus (fol. 26v.), tenor-altus (fol. 27v.), bass (fol. 28r.).

die löcher all zu.

3. Martin Agricola, *Musica instrumentalis deudsch*, 1545:
Scalae regulares for discantus (fol. 30v.), tenor-altus (fol. 31r.), bass (fol. 31v.).



4. Johannes Frisius, ca. 1536:
Hand-written fingering chart, 'la scala sur la fleutte'.

LE BAS DES FLEVTES D'ALLEMAN.

Clef

G g g g. sol re vt.

* quarré.

F f f. fa vt

Fainte de b, vent bien doux.

E e la mi.

D d. la sol re.

Fainte du *

C c. sol fa vt.

Fainte du *

b b. fa * mi.

A a. la mi re.

Fainte du *

G g. sol re vt.

Fainte pour les deux chants *

F f. fa vt.

Faint du b.

E e. la mi.

D. la sol re. dit D sol re.

Fainte du *

C. sol fa vt. dit C fa vt.

Fainte du *

B. fa * mi.

A. la mi re. dit A re.

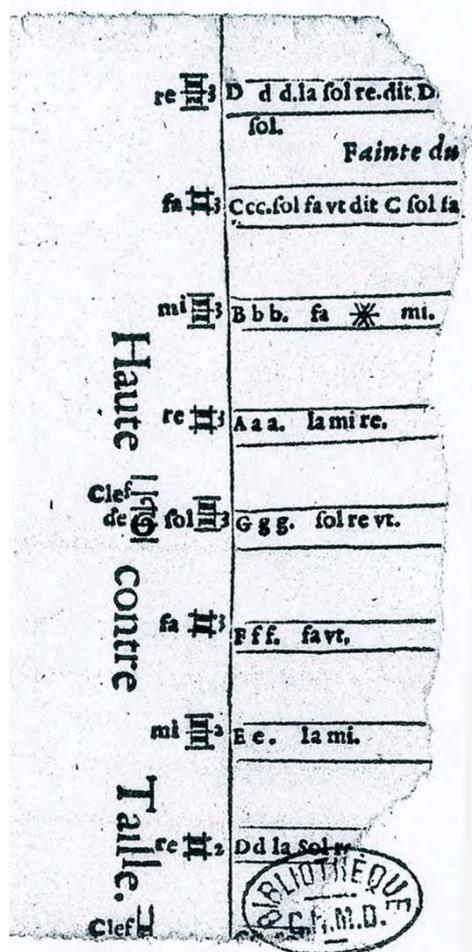
G. sol re vt. dit G vt.

Par le chant

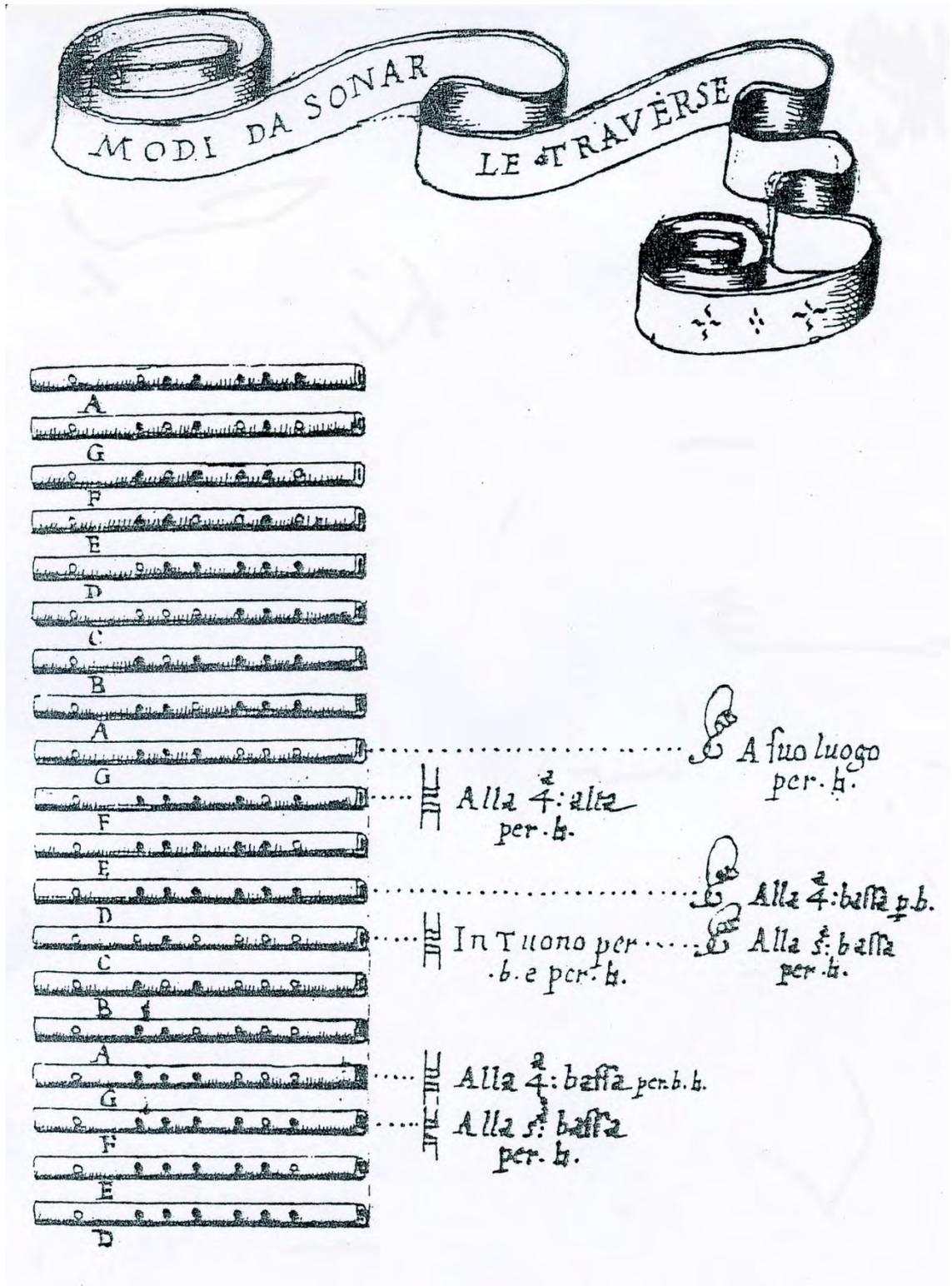
Le plus bas ton, vent bien doux. Toutes les faintes sont cy dessus pour les deux chants,

Vent bien doux. par le chant de b. mol. le plus bas ton.

5. Philibert Jambe de Fer, *Epitome Musicale*, 1556:
Fingering chart for *le bas de fleutes d'Alleman*.



6. Philibert Jambe de Fer, *Epitome Musicale*, 1556:
Fragment of a fingering chart for *Haute-contre Taille*.

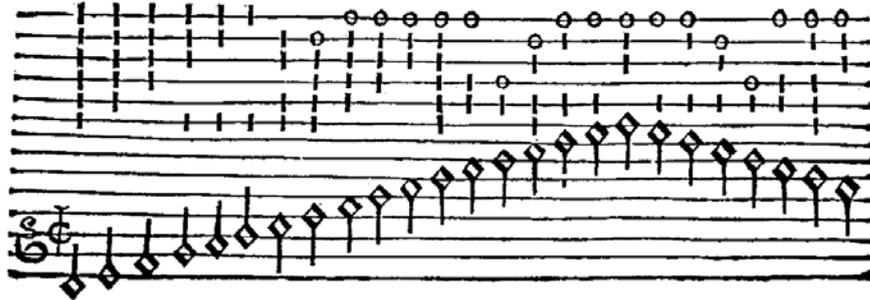


7. Aurelio Virgiliano, *Il Dolcimelo*, ca. 1600,:
Fingering chart for *traverse*.

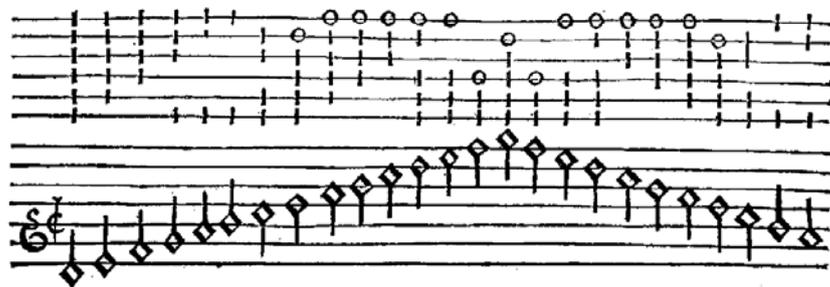
Tablature & Estenduë de la Fluste d'Allemand.



Seconde Tablature de la Fluste d'Allemand.



Tablature du Fifre.



8. Marin Mersenne, *Harmonie Universelle*, 1636, 242-244:
 Fingering charts for *fluste d'Allemand*,
 Fingering chart for *fifre* in D.

Appendix 2

Chansons for Flute Consort edited by Nancy Hadden

Chansons musicales a quatre parties / desquelles les plus convenables a la fleuste dallemant sont / signees en la table cy dessoubz escripte par a. et a la fleuste / a neuf trous par b. et pour les deux fleustes sont signees / par ab. Imprimees a Paris en la rue de la Harpe devant / le bout de la rue des Mathurins prez leglise saint Cosme / par Pierre Attaignant. / Mense april. MD. XXXIII. (D: Mbs, microfilm only (S); ATB lost)

Complete Pieces (reconstructed from concordances):

<u>Folio number</u>	<u>Title</u>	<u>Composer</u>	
Fol 4v	Je lay ayme	Pierre Certon	330
Fol 5v	Si par fortune	Pierre Certon	332
Fol 7r	En espoir davoit mieulx	Nicolas Gombert	334
Fol 8v	Hors envieulx	Nicolas Gombert	337
Fol 9r	Sur tous regretz	Jean Richafort	340
Fol 9v	Vostre beaulte	Lupus [Gombert]	344
Fol 11v	Le printemps faict florir	Benedictus Appenzeller	347
Fol 15r	La plus gorgiase du monde	Anonymous	353
Fol 16r	Souvent amour	Guillaume Le Heurteur	355

Soprano only:

<u>Folio number</u>	<u>Title</u>	<u>Composer</u>	
Fol 2r	Jaymeray qui maymera	Nicolas Gombert	357
Fol 6r	Desir massault	Pierre de Manchicourt	358
Fol 7v	Aultre que vous	Claudin de Sermisy	359
Fol 10v	Vous lares sil vous plaist	Adorno	360
Fol 12r	Si ung oeuvre parfait	Claudin de Sermisy	361
Fol 14r	Veu le grief mal	Guillaume Le Heurteur	362
Fol 14v	Par trop aymer	Benedictus Appenzeller	363
Fol 16v	Si je ne dors	Legendre	364

Vingt & sept chansons musicales a qua / tre parties desquelles les plus convenables a la fleuste dal / lemant sont signees en la table cy dessoubz escripte par a. / et a la fleuste a neuf trous par b. et pour les deux par ab. / Imprimees a Paris en la rue de la Harpe devant le bout / de la rue des Mathurins prez leglise saint Cosme par / Pierre Attaignant. Mense April: m. D. xxxiii.

(D: Mbs, Mus. Pr. 31/5 (SATB))

<u>Folio number</u>	<u>Title</u>	<u>Composer</u>	
Fol 2v	Parle qui veult	Claudin de Sermisy	365
Fol 4v	Amours amours	Nicolas Gombert	367
Fol 8r	Pren de bon cueur	Pierre de Manchicourt	370
Fol 9v	Jectes moy sur lherbette	Didier Lupi	372
Fol 11v	Elle veult donc	Claudin de Sermisy	375
Fol 13r	Hayne et amour	Pierre Vermont (le jeune)	378
Fol 13v	Pourquoy donc ne fringuerons	Pierre Passereau	381
Fol 15r	Je navoye point	Claudin de Sermisy	385
Fol 16v	Si bon amour	Jacotin	387

The Sources

Preface to the Edition

This is a complete edition of all the flute chansons – 26 pieces in total – which were published in Attaignant's two collections in 1533. Both collections were printed in four separate part books, each with 16 folios. Each piece was marked with a letter on the title page to indicate the most suitable instruments: 'a' to designate transverse flutes, 'b' to designate recorders, and 'ab' to designate that they could be played on both (for original title pages see Ill. 3.3.4 and 3.3.5). Although Attaignant intended them as collections 'appropriate for flutes and recorders', the texts underlaid in all the parts leave no doubt about the vocal origins of the music. Presumably Attaignant also intended these to be practical editions for a wider market of singers as well.

A complete copy of *Vingt et sept chansons* is in D: Mbs, Mus. Pr. 31/5, from which all nine 'a' (flute) pieces have been edited for this edition.¹ Out of the entire collection of 28 pieces, I have found only eight which exist in other sources; only one of these, 'Pourquoy donc', is an 'a' piece (for concordances see Table 3.3.4).

Only the superius part of *Chansons musicales* survives. All copies of the published volumes have vanished, and only a microfilm copy exists for the superius part book, in D: Mbs. 17 pieces are marked as 'a', for flutes. I have completed nine pieces by using concordant sources (for concordances see Table 3.3.5). For one of these, 'La plus gorgiase du monde', I have brought to light a complete set of manuscript parts not previously identified in any other literature about the Renaissance flute, from which I have made the first modern edition of this piece for flutes. The manuscript (D: Mbs, Ms. 1516) is textless, but the soprano part for 'La plus gorgiase du monde' is otherwise identical to the one published in *CM* (fol. 15r). The remaining eight pieces remain incomplete, since no other sources have yet come to light. I have included an edition of these eight soprano parts for purposes of discussion (see Ch. 3.3), and to aid in the search for remaining parts (which I imagine may one day be found, as was 'La plus gorgiase du monde', lurking in manuscripts).

¹ For a facsimile of the collection, see Dirk Snellings, ed., *Vingt et sept chansons musicales* (Peer, 1986), an edition of the 'ab' and 'b' pieces is in Bernard Thomas, ed., *Pierre Attaignant, Fourteen Chansons*, PC1 (London Pro Musica Editions, 1972)

Editorial Procedure

Original note values and time signatures have been maintained.

Bar lines have been added to facilitate reading the scores. Care must be taken in performance not to use bar lines as points of accentuation; rhythmic groupings are more irregular, and should be derived from the texts.

For consistency and ease of reading, the old C and F clefs have been modernized with treble clefs for the three upper voices and bass clef for the bass voice. Original clefs for each piece are shown in Tables 3.3.4 and 3.3.5.

Repeated sections are indicated either with repeat signs or with first and second time bars .

Original source accidentals are in the staff, before the note, and apply only to one note.

Editorial accidentals are shown above the stave, and apply to one note.

Spellings and punctuation have been maintained according to the original texts.

Coloration and ligatures are indicated by square brackets above the stave.

A few small printing errors of pitches and note values were checked against other sources – if there was more than one source – and silently corrected. If these were unresolved, alterations were made by the editor and appear in brackets around the note(s) in question.

Je lay ayme

Fol. iiii

Pierre Certon

Je lay ay - me, Je lay ay - me, _____
 Je lay ay - me et lay - me - ray, je lay ay - me _____
 Je lay ay - me, je lay ay - me et lay
 Je lay ay - me et lay - me - ray, je

Je lay ay - me et lay - me - ray, je
 et lay - me - ray, je lay ay - me et lay - me -
 me - ray, je lay ay - me et lay - me -
 lay ay - me et lay - me - ray, _____ et lay - me -

ray, le mien a - my a
 ray, le mien a - my a qui tous - jours se -
 ray, le mien a - my a qui tous - jours se - ray, _____
 qui tous - jours se ray, si mort ne vient ou
 a qui tous - jours se ray, _____ si
 ray, _____
 _____ a qui tous - jours se - ray, si mort ne

35

moy ou luy sur - pren - dre, en - cor ne
mort ne vient ou moy ou luy sur - pren - dre, en - cor ne
si mort ne vient ou moy ou luy sur - pren - dre, en - cor ne puy

44

vient ou moy ou luy sur - pren - dre, en - cor ne
puy a mon es - poir com - pren - dre, a -
puy a mon es - poir com - pren - dre, a -
a mon es - poir com - pren - dre,

52

puy a mon es - poir com - pren - dre,
pres la mort, a - pres la mort,
pres la mort com - ment je l'ou - bli - ray? a - pres la mort com - ment je
a - pres la mort, a - pres la mort com - ment, je

61

a - pres la mort com - ment je l'ou - bli - ray? A - pres la
mort com - ment je l'ou - bli - ray? je
l'ou - bli - ray? a - pres la mort com - ment
l'ou - bli - ray? A - pres la mort
mort com - ment je l'ou - bli - ray? com -

67

l'ou bli - ray? A - pres la ray?
je l'ou - bli - ray? A - pres la ray?
com - ment je l'oub - bli - ray? ray?
ment je - l'ou - bli - ray? ray?

Si par fortune

Fol. v

Pierre Certon

Si par for - tu - ne a - vez mon cueur, a -

Si par for - tu - ne a - vez mon cueur, —

Si par for - tu - ne, a - vez mon

Si par for - tu - ne, —

vez mon cueur ac - quis, des - tre lai - sé

ac - quis, d'es - tre lai - sé sont

cueur ac - quis, d'es - tre lai - sé

a - vez mon cueur ac - quis, d'es - tre lai - sé —

sont des tours de for - tu - ne, —

des tours de for - tu - ne, — sont

sont des tours de for - tu - ne,

sont des tours de for - tu - ne, —

mais bien sca - vez, mais bien sca - vez, mais

des tours de for - tu - ne, mais bien sca - vez, mais

sont des tours de for - tu - ne, mais bien sca -

— sont des tours de for - tu - ne, mais bien sca -

37

bien sca - vez quant vous ma - vez re - quis, au temps pre - mier,
 bien sca - vez quant vous ma - vez re - quis, au temps pre -
 vez, quant vous ma - vez re - quis, au temps pre - mier

46

vez, quant vous ma - vez re - quis, au temps pre - mier au
 trou - vez ma - vez, trou - vez ma - vez tout u -
 mier trou - vez ma - vez tout u - ne.
 trou - vez ma - vez tout u -

55

temps pre - mier, trou - vez ma - vez tout u -
 ne, au temps pre - mier, trou - vez ma - vez, trou -
 au temps pre - mier, trou - vez ma - vez,
 ne. au temps pre - mier, trou - vez ma -

64

ne, au temps pre - mier au temps pre - mier,
 vez ma - vez tout u - ne.
 tout u - ne.
 vez tout u - ne.
 trou - vez ma - vez tout u - ne.

En espoir d'avoir mieulx

Fol. vii

Nicolas Gombert

En es - poir da - voir mieulx il fault a - voir sou -
 En es - poir da - voir mieulx il fault a - voir sou - fran - - -

10 En es - poir
 - fran - ze, il fault a - voir sou - fran - - - - -
 - - - ze, il fault a - voir sou - fran - - - -
 En es - poir da - voir mieulx il fault a - voir sou - fran -
 da - voir mieulx il fault a - voir sou - fran - - - - - ze,

19 - ze, for - tu - ne soubz les cieulx,
 - ze, il fault a - voir sou - fran - ze,
 ze, il fault a - voir sou - fran - - - ze, il
 il fault a - voir sou - fran - ze, il fault a - voir, il

28 for - tu - ne soubz les cieulx, a fait a
 for tu - ne soubz les cieulx, for - tu - ne
 fault a - voir sou - fran - ze, for - tu - ne
 fault a - voir sou - fran - ze, for - tu - ne soubz -

71

il fault a - voir sou - fran - ze, en es - - poir

fault a - voir sou - fran - ze, vi - vons en es - pe - ran -

vons en es - pe - ran - - ze,

en es - pe - ran - - ze, en es - poir

79

da - voir mieulx, il fault a - voir, il fault a - voir,

- ze, En es - poir da - voir mieulx il fault a - voir, il

En es - poir da - voir mieulx il fault a - voir, il

da - voir mieulx, il fault a - voir, il fault a - voir,

87

il fault a - voir sou - fran - ze.

fault a - voir sou - fran - - - ze.

fault a - voir sou - fran - - - ze.

il fault a - voir sou - fran - - ze.

Hors envieulx

Musical score for the first system of 'Hors envieulx'. It consists of four staves: two vocal staves (Soprano and Alto) and two piano accompaniment staves (Right and Left Hand). The music is in a common time signature (C) and a key signature of one flat (B-flat). The lyrics are: 'Hors en - vi - eulx re - ti - res vous' on the first line, 'Hors en - vi - eulx re - ti - res vous _____ di - cy, re - ti - rez' on the second line, and 'Hors en - vi - eulx re -' on the third line.

Musical score for the second system of 'Hors envieulx'. It consists of four staves. The lyrics are: 'di - cy, hors en - vi - eulx re - ti - res vous _____ di -' on the first line, 'vous di - cy, hors en - vi - eulx re - ti - rez vous di -' on the second line, 'ti - rez vous di - cy, hors en - vi - eulx re - ti - rez vous _____ di -' on the third line, and 'Hors en - vi - eulx re - ti - rez vous di - cy' on the fourth line.

Musical score for the third system of 'Hors envieulx'. It consists of four staves. The lyrics are: 'cy _____ ou mal en - con - tre' on the first line, 'cy _____ ou mal en - con - tre vous au - res _____ tost _____' on the second line, 'cy _____ ou mal en - con - tre vous au -' on the third line, and 'ou mal en - con - tre vous au - res tost ou tard _____' on the fourth line.

Musical score for the fourth system of 'Hors envieulx'. It consists of four staves. The lyrics are: 'vous au - res _____ tost _____ ou _____ # tard _____' on the first line, '_____ ou tart, _____ tost _____ ou _____ tard _____' on the second line, 'res tost _____ ou tard _____ vray a - mou -' on the third line, and 'ou mal en - con - tre vous au - res tost ou tard vray' on the fourth line.

37

vray a - mou - reulx, vray a - mou - reulx vous
 reulx vous se - ront le des - part
 a - mou - reulx vous se - ront le des - part vray

46

se - ront le des - part, vous se - ront le des - part
 reulx vous se - ront le des - part, le des - part et
 vous se - ront le des - part et si au -
 a - mou - reulx vous se - ront des - part

55

et si au - ront de ce lieu le plai - sir, de ce lieu le plai -
 si au - ront de ce lieu le plai - sir, de ce lieu le plai -
 ront de ce lieu le plai - sir, et si au - ront de
 et si au - ront de ce lieu le

64

— sir, et si au - ront de ce lieu
 sir, et si au - rons de ce - luy le plai -
 ce lieu le plai - sir, et si au - rons de ce - luy le plai - sir,
 — plai - sir, de ce - luy le plai - sir, et

73

le plaisir, de ce lieu le plaisir. - - - - - sir. - - - - - sir,
 - - - - - sir, de ce lieu le plaisir. - - - - - sir. et si
 auront de ce lieu le plaisir. si auront de ce lieu le plaisir. - - - - - plaisir. - - - - - sir.

Sur tous regretz

Sur tous re -
 Sur tous re -
 Sur tous re - gretz

gretz sur tous re - gretz les miens plus
 gretz Sur tous re - gretz les miens plus pi - teulx
 tous re - gretz les
 les miens plus pi - teulx pleu - re

pi - teulx pleu - re
 pleu re Je -
 miens plus pi - teulx pleu -
 les miens plus pi - teulx pleu -

je - tans sou - pirs
 tans sou -
 re je - tans sou -
 re

31

je tans sous - pirs. trans - per - chans mon -
 pirs trans - per - chans mon -
 pirs je tans sou - pirs. trans - per -
 je - tans sou - pirs trans - per - chans

39

las cueur car jay -
 las cueur Car j'ay per - du car
 chans mon las cueur Car j'ay per -
 mon las cueur Car j'ay per - du Car j'ay per - du

47

per - du l'a - my - a - ble li -
 j'ay per - du l'a - my - a - ble li - queur
 Car j'ay per - du l'a - my - a - ble li - queur

55

queur que je plains tant
 que je plains tant
 queur que je plains tant tant
 que je plains tant et plain - dray

63

et plain - dray en am - ple - heu - - - - -
 et plain - dray en am - ple heu - - - - -
 et plain - dray en am - - - - - ple
 en am - ple - - - - - heu - - - - -

70

- re que je plains - - - - -
 - re que je plains - - - - -
 heu - re que je plains - - - - - tant
 - re que je plains tant et

78

tant et plain - dray en am - ple - heu - - - - -
 tant et plain - dray en am - ple heu - - - - -
 et plain - dray en am - ple heu - - - - -
 plain - dray en am - ple - - - - - heu - - - - -

85

- re. re. [Sur tous re - - - - -
 - re. [Sur tous re - - - - -
 - re. [Sur tous re - - - - -
 - re. [Sur tous re - - - - -

93

The musical score consists of four staves. The top staff is a vocal line with a treble clef and a key signature of one flat. It features a melodic line with a slur over the first six notes and a fermata over the seventh. The second staff is a piano accompaniment with a treble clef, showing chords and a melodic line. The third staff is a piano accompaniment with a bass clef, showing chords and a melodic line. The fourth staff is a piano accompaniment with a bass clef, showing chords and a melodic line. The lyrics are: 'gretz Sur tous re - - - - - gretz]'.

gretz Sur tous re - - - - - gretz]

gretz. Sur tous re - gretz]

gretz. Sur tous re - gretz]

Vostre beaulte

Vo - stre beaul - te plai - sant et ly - - - - - e, vo - stre beaul -

9 Vo - stre beaul - te plai - sant et ly - - - - - e, me don - ne re - cre - a - - - - -

17 e, me don - ne re - cre - a - - - - - ti - on, vo - stre gour - get - te u - ne har - mo -

25 re - cre - a - ti - on, vo - stre gour - get - te u - ne har - mo - ni - - - - - e, que

ni - - - - - e, que si tref - fort, que si tref -

u - ne har mo - ni - - - - - e, que si tref - fort a vous me

har - mo - ni - - - - - e, que

33

si tref - fort_ a_ vous_ me li -

fort_ a_ vous, que si tref - fort a vous_ me ly -

ly - - - e, a vous me ly - - -

41 si tref - fort_ a_ vous_ me ly - - -

e, que je suis en op - pres - si -

e, que je suis en op - pres - si - on, que je suis en op -

- e, que je suis en op - pres - si - on, que je suis en op -

50 - e, que je suis en op - pres - - - si - on, que

on op - pres - - - si - on pen - sant a vous,

pres - - - si - on, pen - sant a vous,

pres - si - on, op - pres - si - on, pen -

58 je suis en op - pres - si - on, pen - sant a vous_

pen - sant a vous_

pen - sant a vous_ par a - mi -

sant a vous, pen - sant a vous par a - mi - tie pen -

pen - sant a vous, pen - sant_

66

par a - mi - tie pen - sant a vous

74

sant a vous par a - mi - tie pen - sant a vous par a -
 a vous par a - mi - - - tie pen - sant a vous,
 par a - mi - tie.
 -mi - te, pen - sant a vous par la - mi - tie.
 pen - sant a vous par a - mi - - - tie.

Le printemps fait florir

Le prin - - - temps fait flo - rir

Le prin - temps fait flo - rir,

Le prin -

Le

9

Les ar - bres par na - tur - -

fait flo - rir Les ar - bres par na -

- - temps fait flo - rir, fait flo -

prin - temps fait flo - rir Les ar -

17

re, Les ar - bres par na - - -

tu - - - re, les ar - bres par na -

rir Les ar - bres par na - tu -

bres par na - tu - re, les ar - bres par na -

25

tu - re, Tous oi - seaulx res -

tu - re, Tous oi - seaulx res -

re,

tu - re, Tous oi - seaulx res - jou -

33

- jou - ir Au bois

jou - ir, Tous oi - seaulx res - jou -

Tous oi - seaulx res - jou -

- ir, Tous oi - seaulx res - jou -

41

sur la ver - du - re, Au bois sur

- ir Au bois sur la ver - du -

ir, res - jou - ir Au bois

ir Au bois sur la ver - du -

49

la ver - du - re, Au bois sur la ver - du - re. Et il fault que j'en -

57

re. Et il fault que j'en - du - re, Et il fault que j'en - du - re, Et il fault que j'en - du - re.

65

-re, que j'en - du - re, Et il fault que j'en - du - re, Et il fault que j'en - du - re, Et il fault que j'en - du - re.

97

tra - vail Pour vous, bel - le fi - gu - re, Pour vous, bel - le fi - gu - re, Qui me vous, bel - le fi - gu - re, Pour vous, bel - le fi - gu -

105

Qui me fait ce res - fait ce res - veil, Qui me fait ce res - veil, Qui me fait ce res - re, qui me fait ce - re - veil,

113

veil, Pour vous, bel - le vi - gu - Pour vous, bel - le fi - gu - re, veil, Pour vous, bel - le fi - gu - Pour vous, bel - le fi - gu - re, Qui me

121

- re, Pour vous, bel - - - le fi - gu -
 Qui me fait ce res - veil, Qui
 - re, Qui me fait ce
 fait ce res - - - - -

127

- re, Qui me fait ce res - veil.
 me fait ce res - - - - - veil.
 res - - - - - veil.
 - - - - - veil.

La plus gorgiase du monde

La plus gor - gia -

This system contains the first four measures of the piece. It features a vocal line with a treble clef and a common time signature. The melody begins with a whole rest, followed by a half note G4, a quarter note A4, and a quarter note B4. The accompaniment consists of a right-hand piano part with a treble clef and an 8va marking, and a left-hand bass part with a bass clef. The key signature has one flat (Bb).

se du mon - de le bruit l'hon - neur

This system contains measures 5 through 8. The vocal line continues with a half note C5, a quarter note D5, and a quarter note E5. The accompaniment continues with similar rhythmic patterns. The key signature remains one flat.

18 a la bon te le bruit l'hon - neur a la

This system contains measures 9 through 12. The vocal line starts with a half note F5, a quarter note G5, and a quarter note A5. The accompaniment continues. The key signature changes to two flats (Bb, Eb) at the beginning of this system.

26 bon - te

This system contains measures 13 through 16. The vocal line continues with a half note Bb5, a quarter note C6, and a quarter note D6. The accompaniment continues. The key signature remains two flats.

35

la plus tri - om - phon - - te en beaul - te

43

qui soit mil - le leur en la

47

ron - - - de. de.

1. 2.

32

quoy je veulx dis - si - mu - ler son
 veulx dis - si - mu - ler son faict dis - si - mu - ler
 quoy je veulx dis - si - mu - ler son faict dis - si - mu -

40

faict
 son faict pour en a - voir
 faict pour en a - voir meil - leur con -
 ler son faict pour en a - voir

48

pour en a - voir meil - leur con -
 ten - - te - ment meil - leur con -
 pour en a - voir meil - leur con -

55

ten - - te - ment. Pour en a - voir ment.
 ten - - te - ment. Pour en a - ment.

Jaymeray qui maymera

Jay - me - ray qui may - me - ra sans me -

9
- len - co - li - - - - - e qui me con - for -

18
te - ra puis quay - - - per - du ma - my - -

26
- - - e - - be - noi - ste vier - ge - Ma - rie qui me

35
gua - ri - ra du grief mal - - de ja - lou - si - e que tant

45
me fait mal [que tant] me fait mal mieulx vaul - droit

54
es - tre moi - ne ou du tout es - tre as - sol - le -

61
- quen - du - rer tel mar - ty - - re - -

fol. vi

Desir massault

Pierre de Manchicourt

De - sir mas - sault et ma - dres - se la

10 mort

19 de tous re - tours ou ne me puis re -

27 - trai - re nay fors ri - gueuer que je ne

36 puis at - trai - re pour non - cha - loir pour

45 non - cha - loir qui dict a des - con - fort

54 il fault de moys que pre

62 nez la ma - ie - re.

Aultre que vous

Aul - tre que vous de moys

10
ne jou - y - ra

18
et a ja - mais mon cueur vos - tre [fers] vos - tre fers ren -

27
con - trer quel - que part qui je joy - e par bon a - mour

36
ce don je vous [o - croy - e] vous per - me - tant vous

45
per - me - tant quaul - tre ny

52
par ti - ra.

Vous lares sil vous plaist

Vous la - res sil vous plaist

11
ma da - - - e mon cuer mon corps et biens

20
mon a - me mon cuer mon corps et

29
biens mon a - me et biens mon a - me

38
vous la - rez a vous - tre a - ban -

47
don a vos - tre a ban - don

56
vous la - res vous la - res

66
si vous plaist moy fai - re le bon

75
de ce qui est plus deulx que

84
ba - - - sme de ce qui

93
plus deulx que ba - - - sme re - qui ne

102
suis ce re - sue - - il re qui

111
ne suis ce re - sue - - il re qui suis

119
ce re - sue - - il

Fol. xii

Si un oeuvre parfait

Claudin de Sermisy

Si un oeuvre parfait doit cha - cun

9
con - - - ten - ter il ne fault que si jour veoir

18
ma - nye et hon - ter car qui la voy - roit mois par droit ung

27
trop grant bi - en et qui la voy - roit

35
plus mour - roit pour es -

40
tre si - en.

Par trop aymer

Par trop ay - mer jay cui -

9
- de de - - - mou - rer _____ aux letz da -

18
mours de trop _____ me point et pi - que de trop me

27
point et pi - que ce non ob - stant mest for -

36
- ce _____ den - du - rer _____ pour me - vi - ter

45
de ce - - - ste voy - - - - - e ob -

53
- li - - - que _____ mais tou - te foyz mais tou -

62
- te _____ foyz _____ pour fi - na - le

71
pour fi - na - le _____ re - - - pli - que _____ bien -

80
eu - reux est bien - eu - eux est bien - eu - reux est _____

89
qui sens _____ peult qui sans _____

95
_____ peult _____ biens _____ pas - ser _____

Veü le grief mal

Veü le grief mal ou sans
 12 re - pos la - beure Je mes - ba - his
 21 com - ment com - ment puis tant du - rer
 30 — plus ne mest long le ter - me
 40 den - du - - - - - rer. car
 49 de brief temps con - vien -
 58 dra que je meu - - - - re.

Fol. xvi

Si je ne dors

Le gendre

Si je ne dors je ne puis vi - u - re_____

10
dor - mir ne puis si je ne

19
luis_____ y - u - re dor - mir ne puis si je ne ne luis_

27
_ yu - re or_____ fa - nit il donc si je veulx_ viv - re

36
que je soye tous_____ les jours_____ y -

44
- - - - - u - re_____

53
et pour vi - vre_____ plus lon - ge - ment_____ je men yu -

62
ray tant_____ plus_ sou - vent_____ je

71
men yu - ray_____ plus sou - vent_____ je

78
men yu - ray plus_____ sou - - - vent_____

Parle qui veult

fol ii

Claudin de Sermisy

Par - le qui veult tien je se - ray j'en suys

Par - le qui veult tien je se - ray j'en suys

Par - le qui veult tein je se - ray j'en suys

Par - le qui veult tien je se - ray j'en suys

9

S. la tant que l'es - prit de - dans mon cueur se tien

A. la tant que l'es - prit de - dans mon cueur se tien

T. la tant que l'es - prit de - dans mon cueur se

B. la tant que l'es - - - - - prit de - dans mon

17

S. ne Et tel me cui -de/os - ter la gra - ce

A. ne Et tel me cui -de/os - ter la

T. tien - - - ne Et tel me cui -de/os - ter la gra - ce

B. cueur se tien - ne Et tel me cui - de/os - ter la

25

S. tien - ne qui ne leut onc ou la per

A. gra - ce tien - ne qui ne leut onc ou la per -

T. tien - - - ne qui ne leut onc ou la per - dra si

B. gra - ce tien - ne qui ne leut onc ou la per -

33

S. dra si la Car puy^s que tant sa lan - gue vac - cil -

A. dra si la Car puy^s que tant sa lan - gue vac - cil -

T. la Car puy^s que tant sa lan - gue vac -

B. dra si la Car puy^s que tant sa lan - gue vac -

41

S. - la dif - fi - cile est qu'en a - mour

A. - la dif - fi - cile est qu'en a - mour se

T. cil - la dif - fi - cile est qu'en

B. cil - - la dif - fi - cile est

49

S. se main - tien - - - ne, Car puy^s que ne. 1. 2.

A. main - tien - - - ne, Car puy^s que ne. 1. 2.

T. a - mour se main - tien - - - ne, Car ne. 1. 2.

B. qu'en a - mour se main - tien - - - ne Car ne. 1. 2.

Amours amours

A - mours a - mours vous me faic - tes grant
 O cu - pi - do veuil - lez don - nes se -

A - mours a - mours vous me faic - tes grant tort du
 O cu - pi - do veuil - lez don - ner se - cours au

A - mours a - mours vous me faict es grant
 O cu - pi - do vou - lez vous don - ner con -

A - mours a - mours vous me faict es grant tort
 O cu - pi - do vou - lez vous don - ner con - fort

8

tort du cuer m'a - vez ti - re mon re - con - fort
 cours au pov - re/a - mant qui vist en des - con - fort

cuer m'a - vez ti - re mon re - con - fort
 pov - re/a - mant qui vist en des - con - fort

tort du cuer m'a - vez ti re mon re - con - fort
 fort au pov - re/a - mant qui vist en des - con - fort

du cuer m'a - vez ti - re mon re - con - fort
 au pov - re/a - mant qui vist en des - con - fort

16

joy - e/et plai - sir m'a - vez du tout ot - te
 pour la bel - le dont suys de - she - ri - te

joy - e/et plai - sir m'a - vez du tout ot - te hel - las
 pour la bel - le dont suys de - she - ri - te je suys

joy - e/et plai - sir m'a - vez du
 pour la bel - le dont suys de -

joy - e/et plai - sir m'a - vez du
 pour la bel - le dont suys de -

24

hel - las hel - las
je suys par vous

n'au - rez vous point pi -
en grant ad - ver - si -

hel - las hel - las hel - las n'au - rez vous
par vous je suys par vous en grant ad -

tout ot - te hel - las hel - las n'au - rez vous
she - ri - te je suys par vous en grant ad -

tout ot - te hel - las hel - las hel - las hel - las n'au - rez vous
she - ri - te je suys par vous je suys par vous en grant ad -

32

- tie tris - te je vifz et n'at - tens que
te te

point pi - tie tris - te je vifz et n'at - tens que la mort que
ver - si - te tris - te

point pi - tie tris - te je - vifz et n'at tens que
ver - si - te

point pi - tie tris - te je vifz et n'at - tens que la
ver - si - te

40

- la mort tris - te je vifz et n'at -
-

- la mort tris - te je vifz et n'at - tens

la mort tris - te je vifz et

mort tris - te je vifz et

46

The musical score consists of four staves. The first staff is a vocal line in treble clef with a key signature of one flat and a common time signature. It features a melodic line with lyrics: "tens que la mort." followed by a first ending "1." and a second ending "2.". The second staff is a piano accompaniment in treble clef with a key signature of one flat, providing harmonic support. The third staff is a vocal line in bass clef with lyrics: "que la mort. Tris mort." followed by a first ending and a second ending. The fourth staff is a piano accompaniment in bass clef with a key signature of one flat, providing harmonic support. The lyrics "n'at - tens que la mort. mort." are printed below the bottom two staves.

tens que la mort. mort.

que la mort. Tris mort.

n'at - tens que la mort. mort.

n'at - tens que la mort. mort.

[Note: text variations are printed exactly as in the original for verse two]

Pren de bon cuer

Musical score for the first system, measures 1-8. The score is written for four staves: Treble, Alto, Tenor, and Bass. The lyrics are: Pren de bon cuer pren de bon cuer le pe - tit.

Pren de bon cuer pren de bon cuer le pe - tit

Musical score for the second system, measures 9-16. The score is written for four staves. The lyrics are: don que ton pou - vre/a - my que ton pou - vre/a - tit don que ton pou - vre/a - my que ton pou - vre/a -

don que ton pou - vre/a - my que ton pou - vre/a -

Musical score for the third system, measures 17-24. The score is written for four staves. The lyrics are: my te pre - sen - - te et le re - coy my te pre - sen - - te et le re - coy

my te pre - sen - - te et le re - coy et le re -

Musical score for the fourth system, measures 25-32. The score is written for four staves. The lyrics are: et le re - coy pour bon guer le re - coy pour bon guer pour bon guer

coy pour bon guer - don pour bon guer -

33

don en lou - ant en lou - ant sa pen - see fer -

don en lou - ant en lou - ant sa pen - see fer -

don en lou - ant en lou - ant sa pen - see fer -

don en lou - ant en lou - ant sa pen - see fer -

41

- ven - te en lou - ant en lou - ant sa pen -

ven - te en lou - ant en lou - ant sa pen

ven - te en lou - ant en lou - ant sa pen - see fer -

- ven - te en lou - ant en lou - ant sa pen - see fer -

49

see fer - - - ven - - - te.

see fer - - - ven - - - te.

- - - ven - - - te.

- - - ven - - - te.

Jectes moy sur lherbette

Jec - tes moy sur lher - bet - te mon a - my gra - ti - euse mon a - my gra - ti - euse

ti - euse mon a - my gra - ti - euse haul - euse, mon a - my gra - ti - euse ti - euse mon a - my gra - ti - euse haul -

cez, haul - cez haul - cez ma co - te - let - te ma haul - cez haul - cez ma co - te - let - te aus - si haul - cez haul - cez, haul - cez ma co - te - let - te

co - te - let - te, aus - si ma che mi - set - te aus - ma che - mi - set - te aus - si ma aus - si ma che - mi - set - te et ne haul - cez haul - cez

32

si ma che - mi - set - - - te et ne soy -
 che - mi - set - te et
 soy - ez hon - teux de
 aus - si ma che - mi - se - - - te et ne

39

ez hon - teux et ne soy - ez hon - teux de frin -
 ne soy - ez hon - teux de frin - guer l'a - mou ret - te de
 frin - guer l'a - mou - ret - te l'a - mou - ret -
 - - - soy - ez hon - teux et ne soy - ez hon -

46

guer de frin - guer l'a - mou - ret - te l'a - mou - ret -
 frin - geur l'a - mou - ret - - - te l'a - mou - ret -
 te de frin - guer l'a - mou - ret - - - te, te,
 eux hon - teux de frin - guer

53

te l'a - mou - ret - - - te hon -
 - - - te, l'a - mou ret - te hon - teux
 de frin - guer l'a - mou - ret - te l'a - mou -
 l'a mou ret - te, l'a - mou - ret - te hon -

60

teux de frin - guer l'a - mou - ret - - te de frin -
de frin - guer l'a - mou - ret - te, de frin - guer
- ret - te de frin - guer l'a - mou - ret te de
teux de frin - guer l'a - mou - ret - te l'a - mou - ret - te

68

- guer l'a - mou - ret - - te de frin -
l'a - mou - ret te de - frin - guer l'a - mou -
frin - guer l'a - mou - ret - - te de frin -
de frin - guer l'a - mou - ret - - te de

75

guer l'a - mou - ret - - te
- ret - - te l'a - mou ret - te
guer de frin - guer l'a - mou ret - te l'a - mou -
frin - guer l'a - mou - ret - - te, l'a - mou - ret -

81

de frin - guer l'a - mou - ret - - te.
l'a - mou - ret - te.
ret - te de frin - guer l'a - mou - ret - te.
te. de frin - guer l'a - mou - ret - te.

Elle veut donc

El - le veut donc par es - tran - ge ri -

El - le veut donc par es - tran - ge ri -

El - le veut donc par es - tran - ge ri -

El - le veut donc par es - tran - ge ri -

9

gueur a mes en - nuys don - ner nour - ris -

gueur a mes en - nuys don - ner nour

gueur a mes en - nuys don - ner

gueur a mes en - nuys don - ner nour - ris -

17

se - ment et ne per - met que

ris - se - ment et ne per - met que

nour - ris - se - ment et ne per - met

se - ment et ne per - met que du mal

25

du mal la vi - gueur puis -

du mal la vi - gueur puis - se par

que du mal la vi - gueur puis -

la vi - gueur puis - se par

33

se par mort met - tre fin a - - - - -
 mort met - - - - - fin a
 mort met - - - - - fin a
 mort met - - - - - fin a tour - - - - -

40

- tour - ment mais pour a - voir cer - tain al - le - ge - - - - -
 tour - ment mais pour a - voir cer - tain al - le - - - - -
 tour - ment mais pour a - voir cer - tain al - le - ge - - - - -
 ment mais pour a - voir cer - tain al - le - - - - - ge - ment

48

- ment il me suf - fit de la veoir a - mou - -
 - ge - ment il me suf - fit de la veoir a - - - mou - -
 ment il me suf - fit de la veoir a - mou - reu - -
 il me suf - fit de la veoir a - mou - reu - - se

56

- reu - se lors con - gnois - tra que trop fut ri - - - go - -
 reu - se lors con - gnois - tra que trop fut ri - - - go - -
 - se lors con - gnois - tra que trop fut ri - go - - -
 lors con - gnois - tra que trop fut ri - go - reu - - -

64

reu - - - - -

68

1. se. Lors con - gnois - se. 2.

- - - - - se. Lors con - gnois - se.

- - - - - se. Lors con - gnois - se.

- - - - - se. Lors se.

- - - - - se. Lors con - gnois - se.

Hayne et amour

Hay - ne/et a - - - - -
 Hay - ne/et a - amour de - dans mon cueur je
 Hay - ne/et a - - - - -
 Hay - ne/et a - mour Hay - ne/et a - - - - -

10
 mour de - dans mon cueur se tien - - - - -
 treu - - - - - ve son ne le
 mour de - dans mon cueur se tien - - - - -
 mour de - dans mon cueur je treu - - - - -

18
 - nent son ne le croit com - me cho -
 - - - - - croit son ne le croit
 - - - - - nent son ne le croit com - me cho -
 - - - - - ve son ne le croit son

26
 se non veu e, com - me cho - se non veu - - - - -
 com - me cho - se non veu e quoy
 se non veu e com - me cho - se non veu - e
 ne le croit com - me cho - se mon veu - e

34

e com - me cho - se no veu quoy
que la cau - se/a moy ne soit con - gneu
quoy que la cau - se/a moy a - moy ne
quoy que le cau - se/a moy

42

que la cau - se/a - - - - - moye ne soit con - gneu -
se ne soit con - gneu - se
soit con - gneu
a - moy ne soit con - gneu -

49

e si sens je bien si
si sens je bien si
se si sens je bien [si sens je
se si sens je bien si sens je

57

sens je bien le mal qui en fait
sens je bien le mal qui en
bien] le mal qui en fait preu -
bien si sens je bien le mal qui

65

1. 2.

preu ve. Si ve.

fait preu - - ve. Si sens je ve.

en fait preu - - - ve. Si ve.

Pour quoy donc ne fringurons nous

Pour - quoy donc ne frin-gue-rons nous en - tre noz jeu-nes da-mes pour quoy donc

Pour quoy donc ne frin-gue-rons nous en - tre noz jeu-nes da - - -

Pour quoy donc ne frin-gue-rons nous

ne frin-gue-rons nous en - tre noz jeu-nes da - mes Pour quoy donc ne

mes en-tre noz jeu-nes da - mes en - tre noz jeu - nes da - mes

tre noz jeu-nes da - mes pour quoy donc ne frin-gue-rons nous en-tre noz jeu-nes da - mes

pour quoy donc ne frin-gue-rons nous en - tre noz jeu-nes da - mes en-tre noz

frin-gue-rons nous en de - spit de ces faulx ja -

Pour quoy donc ne frin-gue-rons nous en de - spit de ces faulx ja -

pour quoy donc ne frin-gue-rons nous en de - spit de ces faulx ja -

jeu-nes da - mes pour quoy donc ne frin-gue-rons nous en de - spit de ces faulx ja -

loux ces faulx ja - loux par

loux Ces faulx ja - loux par grant en -

loux ces faulx ja - loux par grant en - vi - e par

loux ces faulx ja - loux par grant en - vi - e par grant en - vi - e

33

grant en - vi - e - - - - - mont mis-des
vi - - - - - e mont mis des-sus quoy fait fo -
grant en - vi - e mont mis des-sus quoy fait fo -
mont mis des - sus quoy fait fo - li - e

41

sus quoy fait fo - li - e d'a - voir frin-guez soubz les -
li - e quoy fait fo - li - e d'a - voir frin-guez
li - e quoy fait fo - li - e d'a - voir frin-guez soubz les cour - ti - nes
quoy fait fo - li - e d'a - voir frin-guez soubz les cour - ti - nes

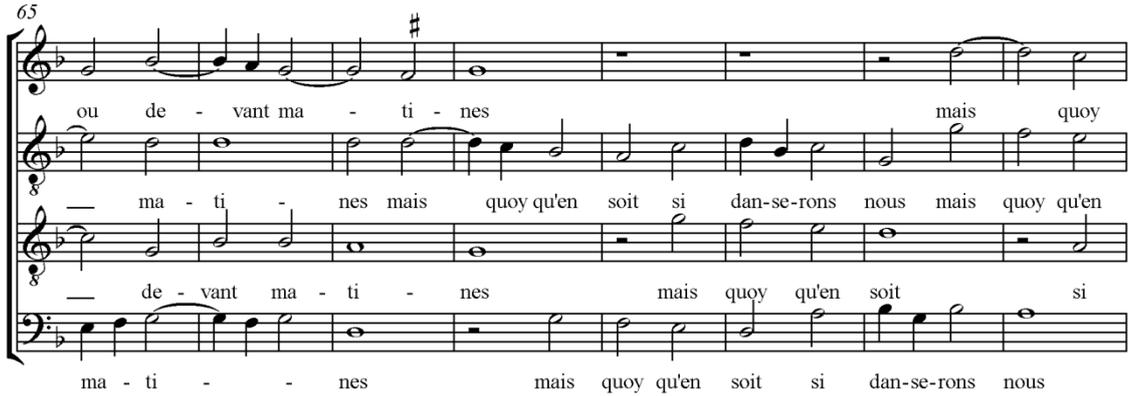
49

cour - ti - - - - - nes fust au soir -
soubz les cour - ti - nes d'a-voir frin-guez soubz les cour - ti - nes
soubz les cour - ti - nes fust au soir ou de -
d'a - voir frin - guez soubz les cour - ti - nes

57

ou de - vant ma - ti - - - - - nes fust au soir
fust au soir de - vant ma - ti - - - - - nes ou de - vant -
vant ma - ti - - - - - nes fust au soir ou
fust au soir ou de - vant ma - ti - - nes ou de - vant -

65



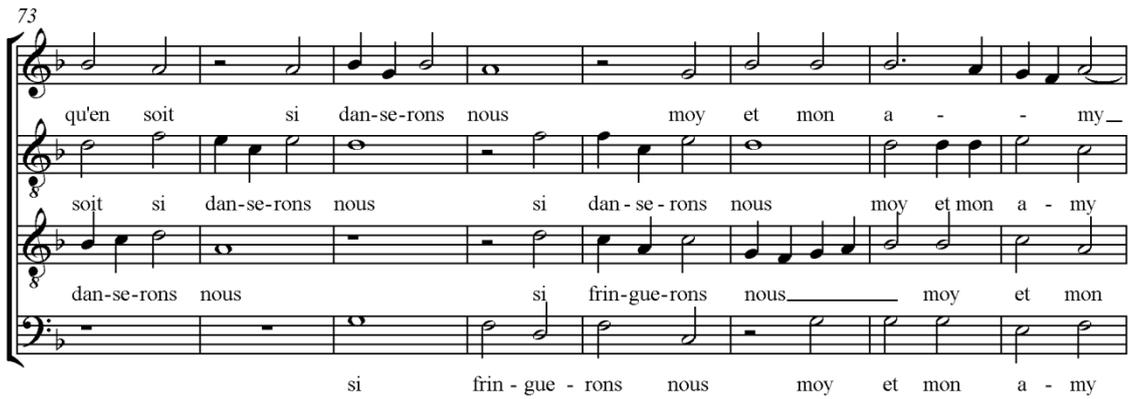
ou de - vant ma - ti - nes mais quoy

— ma - ti - nes mais quoy qu'en soit si dan-se-rons nous mais quoy qu'en

— de - vant ma - ti - nes mais quoy qu'en soit si

ma - ti - nes mais quoy qu'en soit si dan-se-rons nous

73



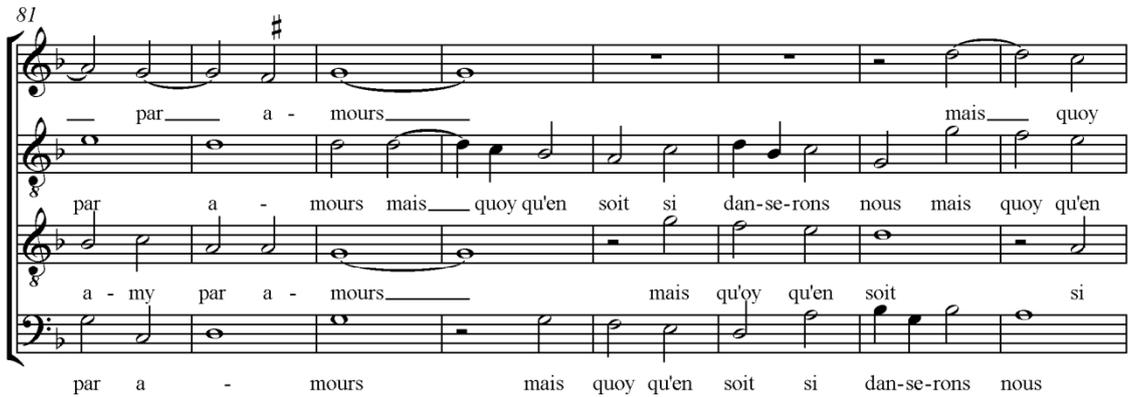
qu'en soit si dan-se-rons nous moy et mon a - - my

soit si dan-se-rons nous si dan - se - rons nous moy et mon a - my

dan-se-rons nous si frin-gue-rons nous moy et mon

si frin - gue - rons nous moy et mon a - my

81



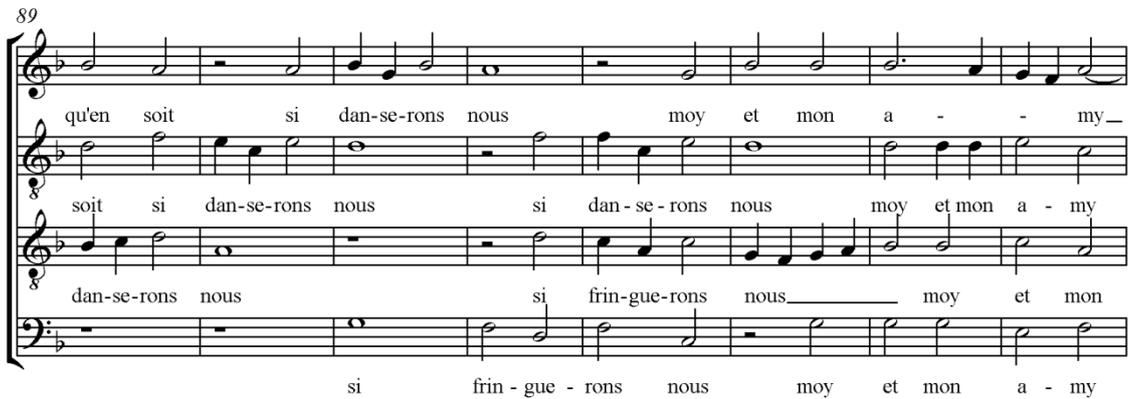
— par a - mours mais quoy

par a - mours mais quoy qu'en soit si dan-se-rons nous mais quoy qu'en

a - my par a - mours mais qu'oy qu'en soit si

par a - mours mais quoy qu'en soit si dan-se-rons nous

89



qu'en soit si dan-se-rons nous moy et mon a - - my

soit si dan-se-rons nous si dan - se - rons nous moy et mon a - my

dan-se-rons nous si frin-gue-rons nous moy et mon

si frin - gue - rons nous moy et mon a - my

97

par a - mours pour quoy donc ne frin-gue-rons nous en - tre noz jeu-nes

par a - mours pour qu'on donc ne frin-ge-rons nous en - tre noz jeu-nes

a - my par a - mours pour quoy donc pour quoy

par a - mours pour quoy donc ne

105

da-mes pour quoy donc ne frin gue-rons nous en - tre noz jeu-nes da - mes

da - mes en-tre noz jeu nes da-mes en - tre noz jeu nes

donc ne frin gue-rons nous en - tre nos jeu-nes da - mes pour-quoy donc ne frin gue rons nous en-tre nos

frin gue rons nous pour quoy donc ne frin gue-rons nous en - tre noz jeu nes

113

pour quoy donc ne frin-gue-rons nous en de - spit de ces

da - mes pour quoy donc ne frin-gue-rons nous en de - spit de

jeu-nes da - mes pour quoy donc ne frin-gue-rons nous en de - spit

da - mes en-tre noz jeu-nes da - mes pour quoy donc ne frin-gue-rons nous en de - spit

121

faulx ja - loux.

ces faulx ja - loux.

de ces faulx ja - loux.

de ces faulx ja - loux.

Je navoye point

Je na - voye point a

Je na - voye point a bien choi -

Je na - voye point a bien choi -

Je na - voye point a bien

9

bien choi - sir fail - - - i si j'eu - se/eu l'oeil au

- sir fail - - - li si j'eu - se/eu l'oeil

- sir fail - - - li si j'eu - se/eu l'oeil au

- choi - sir fail - - - li si j'eu - se/eu l'oeil

17

cueur com - me/au vi - sa - - - ge sans

au cueur com - me/au vi - sa - ge

cueur com me/au vi - sa - - - ge sans don - ner

au cueur com - me au vi - sa - ge

25

don - ner soy si promp te/au doux lan - gai - - - ge

sans don - ner soy si promp te/au doux lan - gai - - - ge

soy si promp - te/au doux lan - gai - - - ge

sans don - ner soy si promp te/au doux lan - gai - ge

34

par ou je fuz plus

par ou je fuz pluz tost prins

par ou je fuz plus tost prins

par ou je fuz plus tost prins

41

tost prins qu'as - sail - - - ly. Par ly.

qu'as - sail - ly. Par ly.

qu'as - sail - ly. Par ly.

prins qu'as - - - sail - ly. Par ly.

Si bon amour

Si bon a - mour me - ri - te re - com - pen -

Si bon a - mour me - ri - te re - com - pen -

Si bon a - mour me - ri - te re - com - pen -

Si bon a - mour me - ri - te re - com - pen -

9

S. - se Et si pi - tié n'a per - du son pou - voir

A. se Et si pi - tié n'a per - du son pou -

T. pen - se Et si pi - tié n'a per - du son

B. se Et si pi - tié n'a per - du son pou - voir

17

S. J'au - ray

A. voir, J'au - ray mer - cy j'au - ray mer -

T. pou - voir J'au -

B. j'au - ray mer - cy, j'au - ray

24

S. mer - cy Car ma seu - le fi - an -

A. cy mer - cy Car ma seu - le fi - an -

T. ray mer - cy Car ma seu - le fi - an -

B. mer - cy Car ma seu - le fi - an - ce

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