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La Cetra Cornuta : the horned lyre of the Christian World

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La Cetra Cornuta : the Horned Lyre of the Christian World

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Robert Crawford Young
Born in New York (USA)
in 1952

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Foreword

Since the Age of Greece and perhaps before, no musical instrument has been more central to Western civilization than the quintessential lyre. In Hellenistic culture, the new science of music theory was made tangible through this artifact. The oral tradition of epic poetry was unthinkable without it. Moral behavior, metaphysical speculation and generally-accepted world view were linked to the lyre, which provided a means of symbolic expression of both arithmetic (measurement, proportion) and emotion, of rationality and irrationality, in other words, of ideas.

"Media" is the plural form of "medium" ("that which is in the middle"), although in contemporary English it is often used as a noun in the singular. Modern media, like modern fashion, has to do with communication. In our Age of Technology, media and fashion have become synonymous more than ever before, blending together in ever-more-subtle and ever-changing ways. And while fashion - whether in the form of Armani clothes, Tesla cars or Apple computers - might be thought of as a phenomenon of capitalist/ consumer society, it is a concept which can be usefully applied to the story told herein of the ancient lyre.

That story is centrally concerned with the original and still historically unsurpassed manifestation of a phenomenon driven by the use of media: Christianity. In the beginning was the Word.... and the word, both spoken and written, sold the message. But a picture is worth a thousand words, and a song can bring a thousand pictures to mind, thus art and music formed a substantial part of the media of the Church.

Were ancient Greeks or Romans or Umbrians fashionable? Rather than discuss their choice, or legally-determined conformity, of hairstyle and clothing, more interesting for our topic will be the view that musical instruments are fashionable. Their physical forms, context of usage, and appeal to various personality types are driven by social fashion as well as social ritual. They represent an early kind of media, as tools of communication which can convey messages on different levels of visual and aural/oral meaning.

During the last millennium, it seems to me that there have been two periods when the popularity of musical instruments, in particular, the lyre, increased dramatically: the fifteenth and twentieth centuries. The latter saw the advent of sound-recording media as well as radio, cinema and television (and the Internet), culminating in the Beatlemania of the 1960s and catapulting the guitar into the position of the most popular instrument in the history of our species.

If one could plausibly argue, as I would, that the twentieth-century rise of the plucked chordophone was driven by the media, then a somewhat similar case could be made for the fifteenth-century, when the printing press emerged as a mainstream media tool. The culture of printed books served the market of literate, educated amateurs, including those who wished to learn to sing or play a musical instrument such as the lute. The lute's fashionability was also driven by the literature of courtly love and its association with Venus. Additionally it was seen as a new kind of portable machine that could realize in sound the sorts of polyphonic music that had hitherto been the exclusive domain of trained singers and organists. Whether playing music for the dance, to accompany a love song, or play the sort of private contemplative music exemplified by the ricercar, the lute served a multitude of musical purposes.

But fashion is concerned with national, regional, or local tastes, and if the lute's popularity saturated virtually all areas of Western Europe in the 15th c., without a clear place of origin within Europe, another type of lyre emerged during the same period in northern Italy as a direct manifestation of the Humanists' fascination with Classical Antiquity. That lyre is an instrument whose early history concerns the Christianization of previous instrument types, mainly late Roman and Coptic, but which later rejects Christianity, so to speak, by a conscious return to its origins in the Golden Age of a pre-Christian world. It was known in its time as: *la cetra*.

Glossary

Back*:** The dorsal face or surface of the ***Sound-box [→] which rests against the chest or stomach of the player when held in playing position. Its general form is either flat or arched, with many variations.

Base*:** The trapezoidal section at end of the body which is used as a ***String-Holder [→] on the cetra. Also found on the Classical ***Kithara*** [→], it enabled the instrument to stand on a flat surface. An ***End projection*** [→] has the same function as a string fastener but it may have a different shape, such as a fleur-de-lys. See also***Comb*** [→].

Body*:** ***Soundbox [→]. The body of the cetra is the main corpus below the neck.

Bordun*:** (Engl.; Lat.: bordunus) string(s) on a necked chordophone which lie off the ***Fingerboard [→], running parallel to the upper (”bass side”) edge of the fingerboard. Unlike the strings on the fingerboard, they are not stopped with the left-hand fingers, although their pitch can be changed using a ring on the thumb of the left hand. Alternately, they can be plucked by the thumb as well.

Bout: The bout refers to the wider parts of the body, frontally viewed, of a waisted instrument. They form the upper shoulders of the body, hence “upper bouts”, but the term can also be used as “lower bouts”, referring to the wider parts of the lower half of the instrument.

Bridge*:** A piece of wood or hard material supported a string above a resonating chamber; by implication there must be two bridges for any string to vibrate musically, as the vibrating movement can only happen between these. The one placed on the soundboard of the body is called the “bridge”, whereas the other one placed at the end of the fingerboard is called the ***Nut [→].

Built-up construction:

A method of instrument building which joins pieces of wood together, typically using glue, rather than carving a resonator or resonator-plus-neck

from one block of wood. A built-up cetra features a resonator whose sides and back are glued to each other and not carved from one piece.

***Cetra*:** (Ital.; Engl. term for pre-16th c. cittern) Necked chordophone specific to Italy from c. 1100 (earlier?) whose features include: oval or spatulate body form, shoulder horns, articulated projection at lower body end, flat peg-head of roundish or multi-sided form, wooden frets (also in block form), general neck length not significantly longer than body length (often shorter), strings attached at end projection.

Cetre: Plural form (Ital.) of ***Cetra* [→].**

Cetera: Alternate Ital. spelling for ***Cetra* [→].**

***Chelys-lyre*:** Greco-Roman lyre, smaller and of different construction and usage than the Greco-Roman *kithara*; originally constructed from a tortoise shell, within which two vertically-projecting animal horns were fixed and joined at the top with a cross-bar. The strings were attached from the bottom of the tortoise shell to the cross-bar. In Greco-Roman mythology, this is the quintessential stringed instrument invented by Apollo/ Mercury.

***Chitarra*:** Ital. term for ***Gittern* [→].**

Chordophone: The term refers in organology to any stringed instrument of any form.

Citara*:** Alternate Latin spelling for ***Cithara [→].

Cithara: (1) Latin term for ***Kithara* [→].**
(2) Latin term for any stringed instrument
(3) Latin term used from (?) c. 10th c. to denote *lute* (1) in Italy. Translated in Ital. as *cetra* or *cetera* since 12th c., perhaps earlier.

Citole: Plucked necked chordophone, gut-strung, of waisted or elongated body shape, one-piece carved construction with deep-spined neck (spine is connected with back of body) featuring a hole for the thumb, allowing the instrument to be held and fingered by the left hand. Exclusively non-Latin, with earliest examples beginning c. 1200 in Spain and southern France, later in other lands north of the Alps; used until c. 1400.

***Clavichordarum*: *Kollopes* [→].**

Claviculi: ***Kollopes*** **[→].**

Comb: ***Base*** **[→]**or ***End projection*** **[→]** which is toothed like a comb. Used in modern research generally more in reference to citterns of the 16th c. or later.

Course**:** group of strings, plucked or bowed as one string. On lute-family instruments, a course is usually not more than two strings; psalteries often have three, rarely more, strings per course.

Cross-bar**:** This is the upper horizontal bar on a lyre, to which strings are attached. The arms of the lyre support the cross bar. Also called ***Yoke*** **[→].**

End projection: Projecting mass of wood at the end of the body which typically functions as a string-holder or place to tie a cord securing a tailpiece onto. An end projection can be in trefoil or fleurs-de-lys form, or it can be straight-sided. The size can range from large, prominent, to very small and inconspicuous.

Fingerboard**:** The surface of the neck upon which the strings are pressed to form different pitches. The term usually implies that it is made out of one piece of wood. In the case of the cetra, it may refer to the surface of the block frets as a group.

Fret**:** A piece of wood, bone, gut or other material, attached to the frontal surface of the neck or fingerboard, which functions as a bridge when a finger of the left hand is pressed behind it.

Gittern**:** (Engl.) Small piriform lute of 13th c. Moorish origin, one-piece carved construction, sickle-shape pegbox with sagittal pegs, and no articulated neck-body joint. Whereas the cetra was only found in Italy, the gittern became known throughout Western Europe, including Italy.

Hook**:** The hook refers to a projection at the back of the peg-head seen on some cetre during the second half of the 15th c. and first decades of the 16th, which terminates in a point going in the direction of the body. Its origins and function have been the subjects of some misunderstanding (see **Chapter 4**).

Horn**:** **T**his is the pointed decorative projection or articulation on the shoulders of the body of a cetra, also known in modern research as “wing” or (less commonly) “ear” or “buckle”. Also seen as a scroll on 16th-c. cetre.

Intarsia: (Ital.; adopted as Engl. term for wood-inlay panel) Marquetry or wood-inlay panel which, mosaic-like, seeks to depict natural scenes, people and objects in a realistic way using perspective. This specialized art form, cultivated in 15th- and 16th-c. Italy, was dominated by the figure of fra Giovanni da Verona.

Intarsie: Plural form (Ital.) of ***Intarsia*** [→].

***Kithara*:** Common English spelling of Greco-Roman lyre, of larger and of different construction and usage than the Greco-Roman **Chelys-lyre [→].** It was more noble and refined than the latter. The body was constructed of wood, with hollow wooden arms which are attached to a crossbar at the top of the instrument. The kithara assumed a special importance in the 15th-century as a model for the cetra of the Humanists, who were fascinated with its history.

Kolloboi: ***Kollopes*** [→]

Kollopes: (Gr: κολλοπες; κολλοβοι; Lat.: *clavichordarum*, *claviculi*) Kollops, kollopes and kolloboi are English transliterations for Greek names for tuning levers of rolled leather or wood, tied to the yoke of kithara, around which the string end is wrapped in an X-shaped knot; when correctly tied, these could pivot around the cross-bar to adjust the tension of the string. Kolloboi are of larger size during the Roman period, and of smaller dimension in the Greek era. The Roman type was recalled by the form of the wooden block frets on the cetra.

Kollopes-frets: Wooden block frets whose length surpasses the width of the neck of the cetra, sometimes markedly so, especially at the lower frets near the nut. A chief characteristic of the Humanist cetra, kollopes-frets appear prominent and massive in comparison to earlier slat-frets.

Kollops: ***Kollopes*** [→]

***Lira*:** Latin term for lyre. This was widely used during the Middle Ages and Renaissance as a generic term meaning "stringed instrument".

Lira da braccio: Important humanist instrument which, like the cetra, was used to accompany the singing of epic poetry in many different contexts in 15th and

16th century Italy. Like the cetra, it was a specialty of Italy and it was played by Leonardo da Vinci. This bowed instrument was held in violin position and mainly played chords.

Lute: (1) a general term for any necked chordophone, whether plucked or bowed; the term usually carries this sense in this dissertation.
(2) a specific plucked instrument in Western Europe from the 13th c., pear shaped and vaulted back comprised of glued-together strips or ribs of wood, with a short neck and thin, long pegbox (with saggital pegs) bent back at +/- 90 degrees from the neck.

Lyre: (1) English term for any chordophone of general U-shape with a cross-bar at the top, typically without a fingerboard to stop strings by pressing down with the finger(although there are examples of fingerboard lyres).
(2) English term for Greco - Roman lyre, also called *chelys-lyre*.

***Neck*:** The neck is an elongated, non-hollow shaft, joined to the body of a chordophone, which supports the tensioned strings and provides a surface for changing the vibrating length of a given string by pressing down a finger which acts as a bridge. The end of the neck is the peg-head or peg-box.

***Neck joint*:** **T**his term refers to the intersection of the base of the neck with the soundbox.

***Necked chordophone*:** A musical instrument which produces sound via strings stretched over hollow resonating body joined to a neck, upon which the vibrating length of the string can be changed by pressing down with the fingers.

Nut*:** The bridge at the end of the fingerboard lying in between the fingerboard and the peg-head. ***Bridge [→].

One-piece construction: A method of instrument construction by which the resonator or entire resonator-neck-peg-head are carved from a block of wood.

***Ovoid*:** The term refers to a body form which is of oval shape.

***Pandura*:** (Lat.) A long-necked lute of various forms in Roman culture; this instrument was especially popular in the Byzantine Empire, in particular the southeastern Mediterranean regions. It typically had three gut or horse-hair strings and some examples had wooden frets on the neck. Existing

specimens from the 5th through the 8th centuries halve spatulate body forms.

Pandoura*:** (Engl. version of) Gr. spelling of ***Pandura [→].

***Peg*:** A wooden post (or rarely, another hard material such as ivory) to which a string is fastened, usually being anchored through a small hole pierced in the post; one end of the peg is anchored in a hole in the peg-head (or two holes in the case of a peg-box), allowing the post to be rotated in order to wind the string to tighten it, while the other end features a widened carved shape of various types, allowing the fingers to grasp it for the purpose of turning the post to tighten or loosen the string to the required pitch.

***Peg-box*:** This is the hollowed out or constructed end section of the neck which provides two sides, both sides receiving the same laterally-placed tuning peg, to which the string is anchored in a hole in the peg which is between the sides, as for example on a lute.

***Peg-head*:** The end section of the neck which functions as a surface for holes drilled to receive tuning pegs; it is called the peg-head. The pegs can be positioned frontally, sagittally (laterally) or reverse frontal, i.e., from behind.

Psalterio*:** Italian term for ***Psalterium.

***Psalterium*:** Ancient instrument of the Old Testament which is a shallow wooden box of various shapes (trapezoid, triangle or pig snout). The strings run over bridges placed on the top and are usually placed lengthwise to the longest dimension of the instrument. This instrument was a favorite of the Church Fathers, who considered it symbolic of heavenly things.

***Resonator*: *Sound-box* [→].**

Sagittal pegs: Laterally placed pegs in a ***Peg-box*** [→].

Sistrum: Stick rattle of Antiquity, usually made of metal. With U-shaped body and long handle, it resembled a *pandura* in profile. Perhaps for this reason, various name forms of cittern (Cister, German; cittern, Engl.) are related to the word.

Shoulder: The shoulder is the uppermost corner of body of necked chordophone, viewed frontally in vertical position, also called upper ***Bout*** [→].

***Slat-fret*:** Wooden frets of rectangular form of moderate width, whose length matches the width of the neck of the cetra.

Sound-board*:** This is the thin piece of wood which covers front of the soundbox of a lute or lyre; the bridge sits upon this piece and there is typically an opening or some kind of ***Sound-hole [→] to let air travel in and out as the soundboard moves up and down with the vibration from the struck string.

Sound-box*:** The hollow resonance chamber or cavity of a stringed instrument; on a necked-chordophone, this is also called the ***Body [→]. The body is distinguished from the non-hollow neck by being hollow, and by its function of acoustic amplification.

Sound-hole*: *Sound-board [→]**.**

Spadix: "Palm branch", a term used in a handful of sources describing musical instruments of the Greater Roman Empire. This study proposes it to have been a necked chordophone used in the southeastern Roman Empire with "fronds" or outcurving shoulder ornaments, hence the name "spadix".

Spatulate: This adjective refers to a body form which is of spade or half-oval shape.

String-holder A carved-out or attached (tied-on) projection at the bottom of the body to which the strings are fastened.

***Tailpiece*:** A rectangular piece of wood to which the strings are connected, which is attached to the end of the body via a cord of some kind (often gut).

Tether: On a ***Kithara*** [→], a cord or string connecting the plectrum to the instrument so that it will not get lost. It may also be depicted on medieval chordophones of different types.

Thumb-hole: Unique to the citole, which features an extended neck depth under the fingerboard, this hole - cut through the wall or spine of the neck - allows the player's left-hand thumb to pass through, in order to comfortably support the instrument while playing.

Top*:** ***Sound-board [→]**.**

***Trefoil*:** A strongly Christian visual ornament consisting of a three-leaf shape.

Vielle*:** Necked chordophone played with a bow, usually held in shoulder position in Italian iconography. The viella shared pronounced morphological similarities with the cetra (see **Chap. 1/2**). There has been no dedicated study of the Italian viella, the iconography of which covers at least four centuries(12th - 15th). The viella became, Europe-wide, the most ubiquitous stringed instrument of the 13th and 14th centuries. It is clearly related to the ***Lira da braccio [→] of the Quattrocento, although whether the latter simply replaced it is a problematic question. Similar questions arise for disappearance of the late viella and rise of the early violin during the first half of the 16th century.

***Viola*:** This is a generic term for necked chordophone, plucked or bowed, in common use in Italy from 13th - 16th centuries.

***Viola da mano*: N**ecked chordophone, plucked, with incurved sides and relatively long neck with tied frets.. According to Tinctoris (c. 1480) it was smaller than a lute and was invented by the Spanish. Its earlier history is unclear, with records of use in Italy beginning c. 1480 and continuing into the first half of the 16th century.

***Waisted*:** A body shape with incurved sides is described as waisted. The term is used to describe the incurvature of the sides of the body.

Yoke: ***Cross-bar*** [→].

Introduction

Dear Mr. Young,

In reply to your interesting letter of July 27, I am sorry to say that it has been so many years since I collected pictures of intarsias for the article you know and for others which I never had time to complete, that the whole material was packed up and stored away, and it would take a disproportionate amount of time to unearth it. The most promising way for you would seem to be, since you plan anyway to go to Italy, to look up systematically choir-stalls in Tuscan and Lombard churches, where most important intarsias occur. Wishing you the best of luck in your research,

Sincerely,
Emanuel Winternitz

My research enterprise concerns a musical instrument which - according to some music historians - never existed. It has been rarely sighted in the vast universe of the artifacts of the visual arts which have survived from the Latin Middle Ages and Renaissance. No museum or collection of instruments in the world is known to contain so much as a fragment of a physical specimen of this particular species, never mind a fully intact, complete example. An insignificant dot painted on an imaginary canvas which might be called *Landscape of European Musical Instruments,* it is more or less nonexistent in modern performances of medieval and Renaissance music. Yet this shadowy apparition represents the tip of an iceberg, in terms of its singular importance as the quintessential emblem of Renaissance music. A phantom with horns, or, using Ariosto's phrase in *Orlando Furioso, la cetra cornuta,* when he described the death in battle of young Olympio de la Serra, who sang so beautifully to the "horned cetra", but was robbed of fame and fortune by war, destined to die on the chivalric battlefields of France:

> "un giovinetto che col dolce canto,
> concorde al suon de la cornuta cetra,
> d'intenerire un cor si dava vanto,
> ancor che fosse più duro che pietra."[1]
>
> ("a youth who with sweet note,
> sang to the sound of the horned cetra
> to soften a heart yet proud,
> though it were harder than stone.")

My own history of an obsession with the cetra began after I had fallen in love with the medieval lute. As a student of historical European lute music, I subscribed– in retrospect rather naïvely at the time– to the idea that the scientific study of music history could bring a kind of credibility into a new and exotic musical art form which was rapidly evolving in the 1970s and 1980s: medieval music. This aspect of credibility was referred to as "authenticity", which increasingly became a topic of discussion in early music performance and early music education circles.

"Authenticity", for a lute student, began by using the right tool in the right way. This meant, in theory, playing a five-hundred-year-old instrument using the playing technique that a lutenist in 1500 or thereabouts used. No such instrument, unfortunately, was to be had, so the next best solution was to have one built, replicating as far as possible the particular museum- owned lute one wished to have. This procedure was also not so straightforward, for although solo lute music was cultivated in Europe at least since the time of Conrad Paumann (second third of the 15th c.), the earliest surviving lutes were built much later, in the second half of the 16th c., and had often been substantially altered many decades (or centuries) after their original construction.

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[1] Ariosto, Ludovico, *Orlando furioso*, Canto Sedicesimo, stanza 72 (Dorigatti 2006).

And so, in the absence of surviving instruments, one turned to surviving images, entering the disciplines of art history and music iconography. In my search for information about the forms and playing techniques of early lutes, I was mistrustful about the limited selection of research results. Pronouncements published by (non-lute-playing) music historians frequently seemed at variance with the source material I could examine directly (such as paintings of angel musicians, or treatises on music performance), or simply, with common logic.

To take but one example: music history writers, when giving an account of the history of the lute before 1500, repeatedly stated that lute players played strictly single lines (monophonically) with a plectrum up until 1500, but by 1507 were playing three and four part polyphony with the fingers; their erroneous claim is contradicted both by the existing body of 15th-century lute iconography and by common sense (see Ex. 1 below).[2]

[2] As one example, see Päffgen 1996: "Mit Plektron konnten nur Akkorde oder Einzelstimmen ausgeführt werden, die neue Technik ermöglichte mehrstimmiges, polyphones Spiel" ("Only chords or single lines could be played with the plectrum [whereas] the new [finger] technique made polyphonic playing possible").

Example 1: Colmar, Musée Unterlinden, anonymous Upper Rhine, Colmar, c. 1480:
St. Anne, Virgin and Child, detail showing plectrum-with-fingers technique.

A picture is worth a thousand words, as they say, and the detailed image of the lutenist's hand position shown in Example 1 effectively refutes what mainstream music history insists was not the case. In fact, most mainstreamers had not closely surveyed the visual arts to discover details of hand positions and plectra; they had not familiarized themselves

with the vitally important data provided by music iconography, without which the discourse of the present study would not have taken the form it has.[3]

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[3] The visual arts provide a vast field of data within, to a great extent, a Christian context, connecting Carolingian, Ottonian, Byzantine, Romanesque, Gothic and early Renaissance works of art. . The Biblical material which generated images of instruments can be divided into two groups, Old Testament and New Testament.

First among Old Testament themes is the earthly life of King David, God's musician, who, together with his four musical assistants Ethan, Asaph, Jedethun and Eman, sang songs of praise to the accompaniment of his *cithara,* as recorded in the book of Psalms. Other Old Testament tales generated expression in the visual arts, for example, the designation of Jubal in Genesis as the father of all musicians, or the anecdote given in the book of Daniel concerning the Babylonian Captivity, when the Israelites were commanded to bow down before Nebuchadnezzar as soon as they heard the sound of musical instruments. Hammerstein 1959 and Avenary 1961 offer, among other authors, discussion on the so-called Letter of Dardanus, a 9th-c. commentary on the above-mentioned passage from the book of Daniel. For an outline of a 15th-c. organ work with a descriptive title referencing the passage in Genesis about Jubal, see Young and Kirnbauer 2003, 12, footnote 10.

The New Testament furnishes two narratives requiring musical instrument depiction, the story of the Virgin Mary and the Last Judgement from the vision of St. John. The identity of the Queen of the heavenly court is confirmed, in part, by the attributes of Her attendants. Music, since ancient civilizations, was a potent symbol of power and royalty, like a precious garment indicating courtly status, an invisible cloak made 'visible' in sound by the presence of constructed sound generators. Therefore, angels are commonly depicted with musical instruments in their hands, as a required element of composition if the story of the Virgin Mary is to be told in pictures (Hammerstein 1962). Meanwhile, the vision of St. John which describes the Apocalypse, including the twenty-four Elders who worship at the foot of the Throne of God. As presented in St. John's text (Revelation 5:8), each Elder holds a string instrument (*cithara* in the Latin Vulgate) and a vessel of incense. Like their name suggests, their advanced age is indicated by being bearded, and as an act of submission, they remove their crowns. Further discussion on the Elders of the Apocalypse is offered in Young 2015.

In terms of chronological appearance of these Christian narratives, the Carolingian period sees a flourishing of Psalter manuscripts (with King David images) which will continue throughout the Middle Ages, while the Elders of the Apocalypse begin to be seen with instruments in Italy only in the Romanesque era, continuing on through the Gothic age. Although images of the Virgin Mary go back to early Christian times, it is the artistic convention of the 'angel orchestra' - essentially an Italian phenomenon beginning in the 13th c. - which produces images of instruments in real quantity. See Brown 1978 for more on musical angels in Italy.

While a majority of the iconographical masterpieces examined for this study are Christian, the art of Christian culture, however, is not limited to the Bible, and it can reference other authorities, such as those associated with Greek-Roman Antiquity. It can illustrate scenes from secular love stories and visualize objects from encyclopedias; it can visually narrate a battle scene as well as an epic journey to a far-away kingdom, or conjure shapes from an Arabic astrological treatise. It can tell the story of the god Apollo, including his attribute the cithara, without contradicting or undermining the Christian faith...this is perhaps the main key to understanding the period known in history as the Renaissance.

In my case, what had begun as a search for images of lutes turned into a general search for any European necked chordophones within the span of five centuries, 1000 - 1500. My fascination concentrated itself upon instruments that outwardly resembled a modern guitar, for example, having a body shape with incurved sides. A turning point in my studies came with the realization that a handful of guitar-shaped instruments featured short necks with extremely prominent, bulky, block- like frets that could only have been constructed of wood. They seemed to extend off the fingerboard outside of the physical space of any string, in other words, to have no real musical function whatsoever. Yet there were too many images that were consistent in this regard to simply brush them off as 'artistic license'. My long-standing desire to coherently account for this feature has produced, in large part, the research published herein, and my main research question became, what was the stringed instrument known in medieval and early Renaissance Italy as "cetra"?

I was confronted with a field of research which was either centered upon the late "cetra" from the mid-16th c., i.e., the instrument called "cittern" in English, or was concerned with general precursors of the guitar in the Middle Ages. Cittern studies provided interesting data up to a certain point, and they included valuable information about existing museum artifacts, but I suspected that the cetra in the 13th, 14th or 15th c. had not very much in common with the version from the 16th c. or later.

Whereas the later cittern research was generally consistent within its reading of cittern history and development, the opposite was the case with guitar precursors. A truly bewildering array of publications proffered information about the 20th-c.'s favorite instrument, and because the guitar's form is a form shared with the violin, some have seen the two instrument's histories merge into a common beginning. The sheer number of historical name forms, over many centuries, together with a mind-numbing amount of visual material to be digested, involving huge geographical fields, made research on guitar-violin ancestors a daunting enterprise. Because the relative number of cetra images is but the tiniest proportion of the total material, the cetra was easily ignored in favor of material that more obviously resembled the guitar (or violin).

There seemed to be little consistent information in print concerning the cetra. Emanuel Winternitz had made a start, to be sure, but many important questions were not being asked: if the precursor of the cetra was the citole, how exactly did it become the cetra? Which other instruments might have contributed to the story? How exactly did Winternitz's Classical kithara turn into the cetra? Were there any late Roman lute types which might have had some influence? What were the specific differences between the medieval cetra in the early Renaissance version? What was the tuning? How did one navigate the strange looking frets? How present was the instrument in Trecento musical culture? And so on.

My answers to the questions posed above were arrived at as follows. I divide my work in two parts, theory and practice, consciously following the model used by Johannes Tinctoris in his treatise *De inventione et usu musice* (On the invention and practice of music), who consciously followed the model set by Isidore of Seville almost a thousand years before.[4] This has been done as an act of homage to two historical authoritative writers on musical instruments, and it is fitting for a work concerned with centuries of European culture that believed in the concept of Authority in different forms: Church, court and the formality of the written word.

Chapter 1 encompasses anything of relevance - textual, iconographical or artifactual - that might have in some way contributed to the rise of the cetra in the Romanesque period. The chapter's material goes back to the Greeks and proceeds through phases of Roman civilization, including early Christianity and the Eastern or Byzantine Empire, into the Carolingian and Ottonian cultures. By the end of the chapter, the ground has been laid for the manifestation of a Christian cithara specific to Italy, called *cetra*.

Chapter 2 establishes three distinct chronological periods for the cetra, based on sociological context and morphological developments, over the timespan of c. 1100-c. 1530.

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[4] For the treatise of Tinctoris in Latin and English, see Baines 1950; a much-needed second edition is online at the Early Music Theory website < http://earlymusictheory.org/Tinctoris/>.

Chapter 3 forms a working catalog of iconographical material, crucial to the conclusions of the study, and intended as a modifiable repository for as yet unpublished iconographical sources for the cetra. **Chapter 4** provides analytical comment on specific components and aspects of the instruments seen in **Chapter 3**, while **Chapter 5** summarizes key points as conclusions of all previous chapters, bringing the *Inventione* part of my work to a close.

Usus or practice is the subject of **Chapter 6,** which concludes the entire work. I have had four instruments constructed for performance purposes which test out the theories and suppositions which have been proposed through analytical study of the images. The four cetre are spread out chronologically - one each from the 13th and 14th c., and two from the 15th century. Here, the stimulating challenge has been to build instruments out of nothing, i.e., with no existing specimens in museums to refer to or copy. The most important elements of any stringed instrument (the ones that are simply taken for granted on other string instrument types) are all unsure factors in the case of the cetra: how was it tuned? what kind of strings did it have? how did the frets produce sounds? of what scale or temperament were the notes thereby sounded? what kind of music did it play? **Chapter 6**, then, is a "workshop report" on how things look, sound and work for me thus far with these constructed cetre.[5]

A word on spelling: by far the two most common name variants during the three centuries leading up to the Cinquecento are *cetra* and *cetera;* while either might have been selected with the equal validity, I have chosen to use cetra throughout this work, which is the form found in two well-known medieval texts, Giuliano da Spira's antiphon to Psalm 150 and the Paradiso of Dante.[6]

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[5] Prior to these four, I have seen over the years three constructed cetre, one by Bernard Ellis, c. 1980, roughly based on CE 5, and two based on CE 25, by D.R.Miller and Julian Behr. The Miller instrument from 1980 was used on a 1984 recording by Ensemble Project Ars Nova of music of Jacopo da Bologna, and is now in the private collection of Timo Peedu. The lovely Behr instrument, built in 2012, is owned by Marc Lewon, who currently uses it in concerts and recordings. Other cetre have undoubtably been built which I have not yet encountered.

[6] See Appendix II for references to these and other literary sources.

The cetra narrative will be an exclusively Italian one, spread over many centuries, dealing mainly with the interpretation of sources from the visual arts. Literary sources provide a second field of study, or perhaps we should say "minefield" of study, for it seems that no other instrument of any culture, during any period of history, generated so many different name forms as those stemming from the Greek-Latin *κιθάρα* / *kitara* / *cithara*.

> "The poets [of Antiquity] had many instruments with strange names about which they wrote. I can discover nothing about these other than that they were musical instruments. But how they were formed or shaped, [whether] they were better or worse, more beautiful or more ugly, more refined or more crude than ours, no one writes precisely about this. Indeed, I could mention [these instruments] by name, except that what one [writer] has defined as a harp, another calls a lyre, and vice versa...I believe, moreover, that in the past hundred years, all instruments have been made [to be] so refined, so beautiful, so excellent, and so well formed, that neither Orpheus, nor Linus, nor Pan, nor Apollo, nor any of the poets [of Antiquity] would have seen or heard [the likes]; nor [if they had], could they have thought it possible that anything better could be constructed or invented."[7]

These are the words of Sebastian Virdung writing in Basel in 1511, and I agree with both of his points: that musical instrument terminology through the centuries can be very confusing, and that the 15th-c. saw the rise of instrumental music as, for the first time, a legitimate and high-level art form was cultivated, generating an explosion of new instrument designs and technology. Since then, discussions about instruments have continued, and the objects denoted by such a plethora of similar word forms have been

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[7] Translation in Bullard 1993, 118. The original reads: *Es habe auch die poeten/ moch vil mer instrument von selzamen namen/ dar von sye schreiben/ von den kan ich nit anders erfaren/ dan(n) das es instrumenta Musicalia synd gewesen/ wie sye aber geformet/ oder gestalt/ besser oder boeser/ hubscher oder hesslicher/ subtiler oder grober synd gewesen/ dan(n) die unsern/ dar von schreibt nyemant eigentlich/ den(n) ich wais zue nennen dan(n)das/ welches einer ein harpfen hat genennet/ das heist der ander eyn leyr/ un(d) herwiderum und der gleichen vil/ Ich glaub auch/ das in hundert jarn nechst vergangen alle instrumenta/ so subtil/ so schoen/ so guet/ und so wol gesalt gemacht seind worden/ als sey Orpheus noch Linus noch Pan/ noch Apollo/ noch keiner der poeten/ hab gesehen oder gehoeret/ unnd das mer ist müglich geachtet hab zuemachen oder zue erdencken* (Virdung 1511, Dii - iii).

described at length, and many times over, in modern publications related to music history, organology and music iconography.

To conclude by returning to Emanuel Winternitz and the words he wrote in 1961,

> "The names for old musical instruments are very confusing. The same instrument often had many names, and one name often indicated various instruments. The mediaeval vocabulary alone includes kithara, citola, cistôle, sitole, cuitole, sytole, cycolae, and later we find gittern, getern, kitaire, quitare, guiterne, guitarra. Which are actually the prototypes of the cittern and which those of the guitar? And are all of them children of the ancient kithara?..... I will therefore confine myself chiefly to visual evidence; the representations of musical instruments in the visual arts tell a more reliable and, I trust, convincing story."[8]

An analytical purpose focused more on morphology and less on etymology is as attractive to me as it was to Emanuel Winternitz half a century ago. Looking through his collection of visual documents at the Graduate Center of the City University of New York / Research Center for Music Iconography, encompassing material from the Romanesque through the Baroque periods, a landscape of European cultural history emerged, mapped with a geography of musical instruments and surveyed by the specific taste and interests of its assembler.[9] Winternitz's passion for Renaissance musical artifacts was never clearer than in his late and lovingly-made study of the *lira da braccio*. This essay is for the lira's sister instrument, the cetra.

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[8] Winternitz 1961, 222.

[9] I am extremely grateful to Dr. Zdravko Blažeković for his kind help and guidance during my visits to the RCMI center.

DE INVENTIONE

CHAPTER 1 - Inventing a Christian Cithara

1.1 Defining a Vast Period of Study

The main period under consideration for this study is c. 1100 to c. 1530, for this is the period where representations of a plucked chordophone with consistent salient features may be found exclusively in Italy. An early specific 'cornerstone' for this time span is the relief sculpture of Benedetto Antelami (Parma, c.1200; see Chapter 3, **Catalog Entry 5**, **Catalog Entry** henceforth abbreviated in this study as "**CE**"), whereas Gaudenzio Ferrari's painted ceiling (Saronno, 1535; **CE 51**) offers a well-detailed monument at the end of the chronological field of data.[1] Literary sources contemporary with much of our chronological period confirm that this instrument was called *cetra* or *cetera,* in its day, in vernacular Italian.[2]

The first cornerstone, the Antelami sculpture (**Pl. 1**), is veritably a monumental one. With an impressive degree of realism in its three-dimensional form, it manifests the fundamental, salient features which define the later cetra going all the way into the 16th-century. A spade-shaped body (with articulated shoulders), fixed frets (in contrast, for example, with tied-on gut frets of the lute), shortish neck, oval peg head with frontal pegs, and strings attached to the bottom of the body (as opposed to, for example, attachments at the bridge as on the lute), are all found on the instrument of Antelami. It is important to note that this is not the earliest source with an instrument showing these features, but this is a monument which is, by all accounts, definitive; the morphological similarity with later sources is clear and concrete.

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[1] There is, sadly, no existing musical instrument today which can be examined which is directly relevant to my study. My work mainly confines itself to analyzing existing images, restored and unrestored, within the (to some extent overlapping) study areas of Christian iconography, music iconography and organology; music iconography might be defined as the study of ideas related to music as expressed in images found in the visual arts, and much of historical Western music iconography in the Middle Ages and Renaissance hovers under the giant umbrella of Christian iconography. See also the excellent articles by McKinnon 1977 and Seebass 1997. An approach to music iconography which has an important place in modern study, yet, to me, leans more towards an organological orientation and less towards one of cultural context and the history of ideas, is the work of Howard Mayer Brown in Brown 1980.

[2] See comments in Chapter 4 and Appendix II.

Additionally, this image has been well-known to modern students of historical organology, at least since its publication by art historian Emanuel Winternitz.[3]

Plate 1: Parma, Baptistry, inner west portal: Benedetto Antelami, David with musicians and dancers, c. 1200 (detail of musician).[4]

Our period ends with the establishment of the cetra in 16th-century Italy with consistent specific features, that is, as a six-course instrument with metal frets on a longer neck than pre-16th-century instruments (more precisely, a neck whose general length, inclusive of peg-head, matches, or is greater than, the length of the body), as shown in **Pl. 2**:

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3 Winternitz 1961, Pl. 37d.

4 Photo: author; throughout this work, any photos with no credit listed are my own.

Plate 2: 16th-c. Italian-style cittern by Peter Forrester, Norfolk, 1991.

As a specific marker to delineate the end of this study's time-span, we have chosen the latest example known to us of an instrument with unequivocal wooden block frets, even if we cannot be sure about the neck-length-to-body proportion (**Pl. 3**):

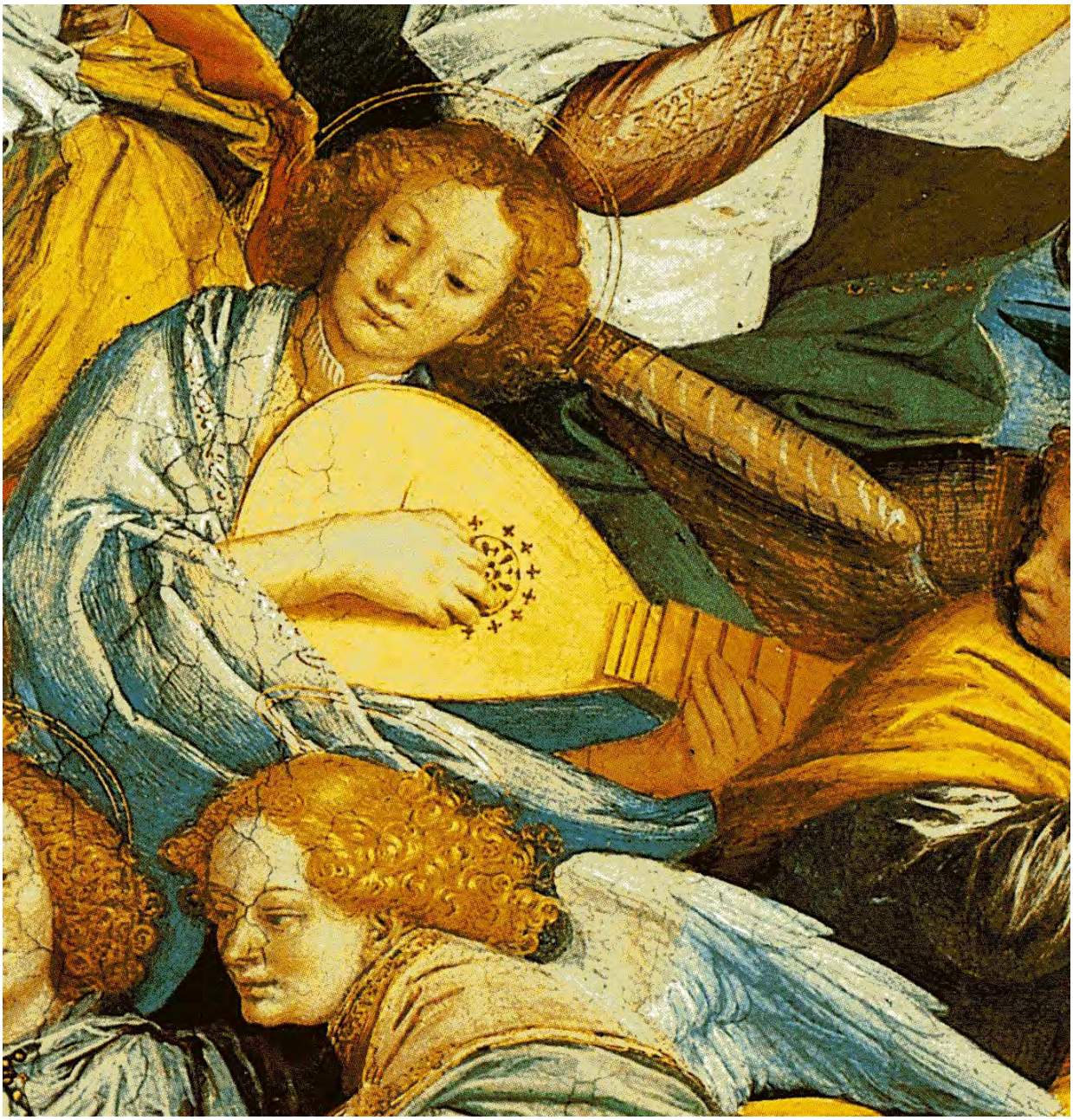

Plate 3: Saronno, Santa Maria dei Miracoli, dome of Santuario:
Gaudenzio Ferrari, angel musician, 1535 - 36.[5]

[5] Photo: Ferrari 1990, Pl. 13.

There will be much discussion in this chapter concerning shapes and forms of stringed instruments (in organological terminology: chordophones) which consist of a hollow body (to amplify the sound) joined to a neck against which strings are pressed to produce multiple pitches from a given string (in organological terminology: lutes, whether plucked or bowed).[6] The most basic body-shapes are oval and half-oval (spade), with a multitude of sub-types within these; **Pl. 3** above would be an oval variation. By definition, a spade body will have clearly angled, pointed or otherwise ornamented upper bouts (or shoulders, looking from the front at a vertically-positioned image of the body). An ovoid body does not. Spade bodies may be short, i.e., half-egg shaped, or they may be somewhat elongated (**Pl. 1**) or extremely elongated (**Pl. 53-59**); some have straight sides, others show incurved sides ranging from a slight, gentle incurvature to a dramatic, deep one.

A second salient feature to keep our eye on will be the neck of the instrument, in terms of length relative to body length. It will be sufficient for this study to think in two basic types, long-necked and short-necked. Long-necked means that the length of the entire neck equals or is greater than the length of the body; a length less than that of the body is short-necked.[7]

The data field of nearly half a millennium, c. 1100 - c. 1530, will be divided into three distinct periods. An even more vast expanse of time preceding these centuries will first be examined in an effort to explain what may have led up to the Romanesque cetra, bringing the total number of chronological sub-chapters to be looked at to four:

1. PRE-ROMANESQUE (up to 12th c.)
2. ROMANESQUE (12th-13th c.)
3. FRANCISCAN (13th-14th c.)
4. HUMANIST (15th-16th c.)

Our organological exploration of the millennium preceding Benedetto Antelami will be like a dive, down into the depths of the ocean...the further down one goes, the less visible things

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[6] See Sachs 1940, 463 - 465.

[7] Both designations are understood to be subject to artistic license, that is, in any depiction of any object from any period, the artist may, for example, have exaggerated some feature or proportion which the actual depicted object did not possess. Thus, in some cases, what appears to be a "long-necked lute" might actually have been an instrument with a neck shorter than its body length.

become. We cannot rely solely on what we think the eye tells us, and we will need to refer to a kind of map or guidebook. This is made up of writings about musical instruments, found as a favorite theme of the early Christian authors who bring those instruments into the consciousness of the faithful. These early Christian writings are in Greek and Latin, and their background and context is the culture of the late Roman Empire. The musical practices of Rome represented, in overview, a kind of Great Inheritance from Classical Greece (hence the modern term "Greco-Roman"), yet the many different cultures of the Empire, both geographically and chronologically, each produced a unique synthesis of different influences and elements.

1.2 Greco-Roman Heritage: Kithara / Lyre / Psalterion

The three most important musical artifacts for the early Christian authors were Roman instruments with a Classical Greek history; they are given here in their Latin, Greek and (modern) English spellings: *cithara* (Lat.), *κιθάρα* (Gr.), kithara (Engl. spelling for Greek instrument), cithara (Engl. spelling for late Roman or post-Roman instrument); *lyra* / *lira* (Lat.), *λύρα* (Gr.), lyre (Eng); *psalterium* (Lat.), *ψαλτήριον* (Gr.), psalterion (Eng).[8] A fourth Roman instrument, hardly present in ancient Greek and Patristic texts, but of consequence for the development of necked chordophones in Latin Christianity, is: *pandura* (Lat.); *πανδουρα* (Gr.); pandura (Eng.). Further terms relating to stringed instruments may be encountered in Greek and Latin sources, but are not the focus of this introductory chapter.[9] See **Glossary** for further information about the use of these terms in this dissertation.

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[8] I use "psalterion" as an English term, rather than "psaltery", because the latter is heavily laden with associations from medieval art, which has to do with a different instrument type which did not exist in Greece or Rome.

[9] For the most useful in-depth study on the stringed instruments of the Roman Empire, including terminology, Greek heritage, literary sources, iconographical sources, archeological artifacts, etc., see Vendries 1999. A useful comparative chart of instrument names is found on p. 190, "Tableau I: les noms des instruments à cordes."

Studies of ancient Greece and its music cultures tell us about the lyre, kithara, and psalterion.[10] The Greek lyre referred to the so-called chelys-lyre, made from a tortoise shell with the plastron (or bottom-plate) of the carapace removed. After two arms made of wood or animal horn had been attached to the shell, a tightly stretched animal skin was affixed across the open space. The arms were bridged near their upper ends with a crossbar of wood; the strings ran from the crossbar down to the bottom of the shell, running over a bridge placed on the taut skin, as seen in **Pl. 4**.:

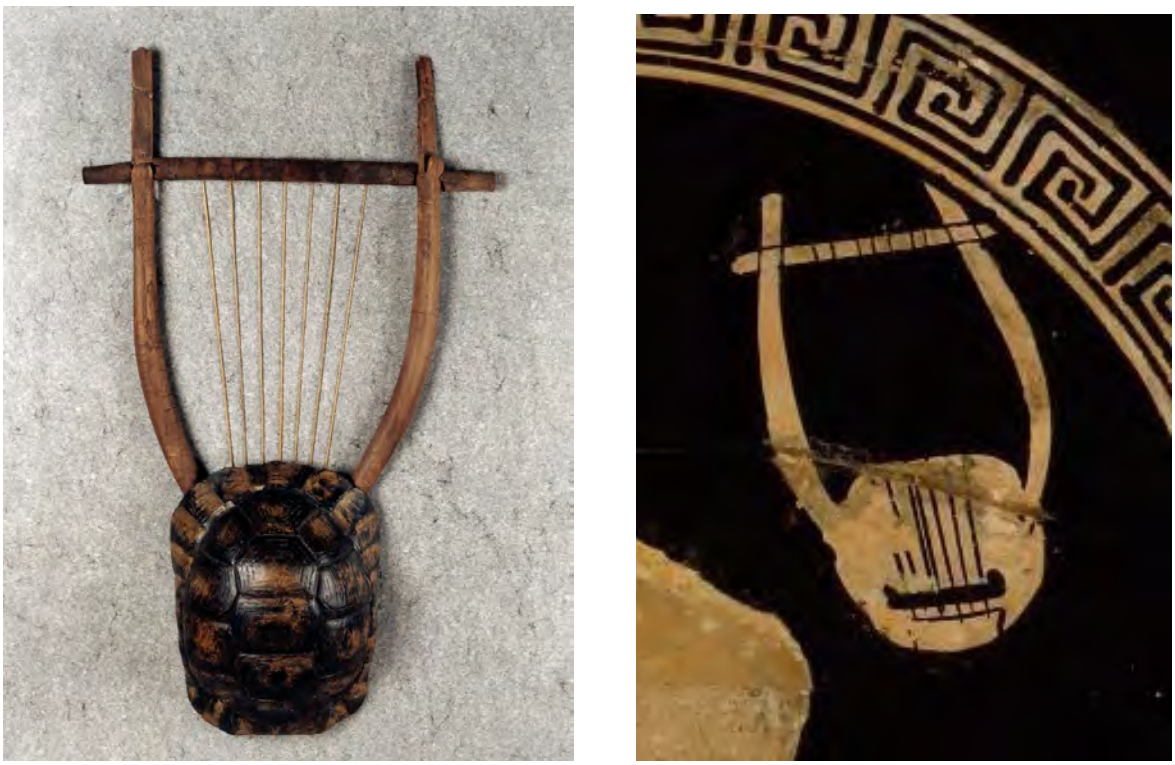

Plate 4: Chelys-lyre, back (l.), front (r.)

The mythology of the invention of the tortoise shell chelys-lyre was an important motif in medieval music theory because it was this instrument that Boethius wrote
about as the original invention of Mercury, with four strings representing the primary consonances of music, “the consonance of the diapason....the diapente and the

[10] The starting point for a study of ancient Greek instruments is Maas and Snyder 1989.

diatesseron....there was nothing discordant in these, in imitation of cosmic music, which consists of the four elements." The authority of Boethius on all matters of music, including the tuning of the four-stringed cithara, continued through the Italian Renaissance and beyond.[11]

The Greek *κιθάρα* was a somewhat larger, more ornate type of lyre with an all-wooden resonator chamber instead of a turtle shell (**Pl. 5**). The two instruments occupied very different positions in Greek culture. The chelys-lyre was the most widely used member of the lyre family, which included other types besides these two, the chelys-lyre and kithara. *Lyra* / *lira* (Lat.) and *λύρα* (Gr.) were also used generically to represent the whole family of lyres. The lyre figured in mythology as an invention by Hermes using a tortoise shell, and it was associated with many other mythological figures, including Orpheus and the Muses. It is a more informal, unpretentious instrument of the well-educated population, rather than the fancier, more ornamental kithara of the professional kitharode, a trained specialist entertainer.[12]

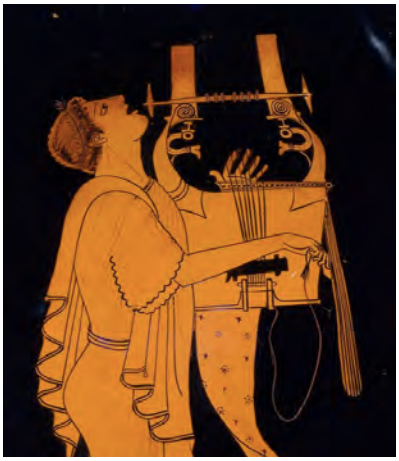

Plate 5: New York, Metropolitan Museum of Art, 56.171.38., Attic amphora attributed to the Berlin Painter; detail showing kithara.[13]

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[11] Bower 1989, 29 - 30. The three intervals listed by Boethius are of course those consisting of primary numbers 2/1, 3/2 and 4/3, in that order of mathematical priority, which generate in effect the Pythagorean pitch system.

[12] For a definitive study on ancient Greek instruments, see Maas and Snyder 1989.

[13] https://i.pinimg.com/736x/c5/55/6f/c5556f1a98aa4f8790d1764677642955--musica-antica-greek-pottery.jpg (accessed 10.01.2018)

The Greek *ψαλτηρίον* (**Pl. 6**) referred to a triangular harp, which, in the 4th-c. B.C., was a speciality of professional female performers. The term became *psalterium* in Latin, manifesting a built-in affinity between the Greek term "psalmós" (*ψαλμός*) and the "Psalter" or collection of the Psalms of David in the Old Testament. The Roman *psalterium*, however, is an instrument which seems very hard to find in iconographical sources, either as any kind of triangular harp, or as anything that looks like a box zither with many strings.[14]

Plate 6: London, British Museum, Accession number GR 1836.2-24.142 (Cat. Vases F 315; detail of vase showing a psalterion (Anzi, c. 320 B.C.).[15]

[14] "The psaltery did not exist in the ancient world" according to Jeremy Montagu (Montagu 2002, 40). For James McKinnon, the psaltery was not a real instrument for the Church Fathers (McKinnon, 1965, 222). Christophe Vendries raises the interesting question of whether a handful of images of certain multi-string *pandurae* from the 3rd c. could be a type of psaltery (Vendries 1999, 140 - 145).

[15] Photo source: www.hellenicaworld.com/Greece/LX/en/Pelike_fawn_BM_F315.html (accessed 10.03.2018).

By the late Roman Empire, the lyre "belongs to the cultural heritage of being civilized, and participates in the idea of the universality of culture in the Empire."[16] It was now well-established as the signature instrument of Greco-Roman musical science-theory. For theatrical entertainments at the Imperial courts, the cithara was the refined instrument of the professional singer/ accompanist. Many types of poetry and oratory were complemented, indeed, completed, by an accompaniment with either the cithara or lyre. The "citharamania" of Rome, as Vendries put it, generated a modern saying that might puzzle someone quoting it today: "Nero plays his fiddle while Rome burns" is obviously not historically correct - he was a passionate player of the *lyra*.

1.3 Church Fathers: Stringed Instruments of the Bible

The Church Fathers seem to have known the lyre and cithara, in their culture, as two different things with different identities, even if they belonged to the same family of instruments. They gave a special emphasis to the cithara above the lyre, as the word *cithara* is far more present in the Vulgate than *lyra*; also, the cithara occurred as a pair with the *psalterium* (Jerome's Vulgate translation of *ψαλτήριον καί κιθάρα* was *psalterium et cithara*).[17] Many centuries will pass before 13.-c. music theorists in Paris, such as Jerome of Moravia, start writing in Latin about the practice of stringed instruments, but when they do, we may be able to notice a certain insecurity about the identity and relationship of *lyra* to cithara. The uncertainty about "which is which", and the confusion about vernacular names of stringed instruments in the Middle Ages and Renaissance may be said to continue to plague the field of research in our own day.[18]

The modern "father" of the Church Fathers, in terms of twentieth-century research on music in early Christian culture, is surely James W. McKinnon, whose research on what the Church

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[16] Vendries 1999. The author further remarks that the epitome of Roman musical culture featuring the cithara occurred, in his view, during the rule of Hadrian (117 - 138).

[17] See Montagu 2002, 162 - 170, for a chart of multilingual Bible references.

[18] Lira or lyra was used both generically and specifically in the 15th and 16th centuries, where it could mean any stringed instrument, or a specific one such as lute, cetra, lira da braccio, viella or viola da mano.

Fathers wrote about music took the form of a dissertation written in 1965. At the outset he remarked, "Patristic practices and attitudes have an influence on the Middle Ages which is difficult to exaggerate", similar to the comment of medieval historian Norman Cantor, who wrote in 1963, "A great number of symbols which appear in art and literature, even in the High Middle Ages, constitute merely the traditional perpetuation of allegorical themes delineated by St. Jerome and other Church Fathers. Once set down by Patristic authority, allegorical symbols tended to be perpetuated through the medieval centuries. The artist or writer of the twelfth and thirteenth centuries merely employed them as commonly received materials of his craft; it was a matter of repetition rather than novel, conscious symbolizing."[19]

McKinnon specified that his survey would end "with the great Church Fathers of the late fourth and early fifth centuries such as Chrysostom, Jerome and Augustine, who represent the climax of Patristic literature. After them there was a sharp decline in the quality and originality of ecclesiastical writing, and subsequent authors more or less repeated the opinions of the Church Fathers on every conceivable issue. Music was no exception, and men like Cassiodorus, Isidore, Bede and Rabanus Maurus, when writing about it, did little more than transmit Patristic ideas. Thus one can speak of two Patristic periods, the Patristic period proper ending with the death of Augustine, and a secondary Patristic period reaching well into the twelfth century during which medieval thought was dominated by the influence of the Church Fathers."[20]

To obtain an overview of the writings of the Christian authorities, we may look at the chronological divisions proposed by McKinnon in his catalog of citations relating to music, which he published as *Music in Early Christian Literature* in 1987:

<u>1st / 2nd c.</u>

Apostolic Fathers: Clement of Rome, Ignatius of Antioch
Greek Apologists: Justin Martyr, Tatian, Athenagoras, Theophilus
Other: Odes of Solomon, Sibylline Oracles

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[19] Cantor 1963, 91.

[20] McKinnon 1965, 3.

3rd / early 4th c.

Greek authors: Clement of Alexandria, Origen

Carthage / Rome: Tertullian, Hippolytus, Novatian, Cyprian, Lactantius

4th c.

Alexandria: Athanasius, Synesius, Isidore of Pelusium

Cappadocian: Basil the Great, Gregory of Nazianzus, Gregory of Nyssa

Palestine, Antioch, Syria: Cyril of Jerusalem, John Chrysostom, Nilus of Ancyra

Greek historians: Eusebius of Caesarea, Theodoret of Cyrus

4th / early 5th

Western: Hilary of Poitiers, Niceta of Remesiana, Jerome, Augustine

In his *Music in Early Christian Literature,* McKinnon presented 380 examples of Patristic writings, culled from these centuries and authors, which are concerned with music in some way. Many of the texts come from Psalm commentaries.[21] *Psalterium* occurs in seven text citations in McKinnon's catalog, plus another twelve examples where it is paired with cithara. A search for *lyra* yields fourteen passages, but by far the most citations, as previously mentioned, are found for cithara - thirty-five. The dominance of the term cithara in these texts will, following the early Christian period, have a stunningly momentous significance for the history of musical instruments in the Western world.

Without any doubt, the presence of musical instruments in the writings of the Church Fathers is - almost exclusively - allegorical. I say 'almost exclusively,' because Clement of Alexandria (c. 150 - c. 215) includes a passage in his *Paedagogus* which lends itself to an interpretation of an approval to imitate David: "if you should wish to sing and play to the cithara and lyre, this is not blameworthy; you would imitate the just Hebrew

[21] McKinnon 1965, 221: "Psalms 32, 42, 48, 56, 67, 70, 80, 91, 97, 130, 136, 143, 147, 149, 150. The numbering of Psalms used here is that used by the Fathers, that is, the numbering associated today with Catholic as opposed to Protestant and Jewish editions."

king giving thanks to God."[22] While a few other texts *might* be read with a similar spirit concerning actual musical practice, most are clearly symbolic. The Patristic authorities frequently used instruments as symbols of sinful, pagan behavior, but when they were not thundering against what a Christian should *not* do, they presented inspiring allegorical images which compared the Christian man to a cithara, as in the following list:

1. The faithful Christians are attuned to the bishop like strings to a cithara.[23]
2. A Christian moved by the Divine Spirit is like a cithara producing sweet harmony by the agency of the plectrum.[24]
3. God's cithara is the human being.[25]
4. By mortifying the flesh and tuning the soul, a Christian becomes like a cithara.[26]
5. The cithara symbolizes the flesh of Christ made incarnate because its sound-box and strings form the sign of the Cross.[27]
6. The cithara is the instrument of David, who prefigures Christ, and the cithara represents the figure of the Cross of Christ.[28]

The comparison of the cithara with the suffering and death of man, in order to have eternal life, owes an obvious debt, first of all, to the ancient Greek tale of Hermes and the lyre.[29] The tortoise in the ancient story, silent in life, achieves a kind of immortality of voice-spirit by its

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[22] McKinnon, 33.

[23] Example: Ignatius of Antioch (c. 100), *Ephesians IV*, 1-2; see McKinnon 1987, 19.

[24] Example: Clement of Alexandria (c. 200), *Paedagogus II, iv*; see McKinnon 1987, 32.

[25] Example: Clement of Alexandria, *Protrepticus I*; see McKinnon 1987, 30.

[26] Example: John Chrysostom (c. 400), *In psalmum xli*, 2; see McKinnon 1987, 81.

[27] Example: Hippolytus of Rome (c. 200), *On the Psalms, Patrologia Graeca 10.715*; see Schueller 1988, 460 - 461.

[28] Example: Niceta of Remesiana (c. 400), *De utilitate hymnorum* 3 - 4; see McKinnon 1987, 135.

[29] See Borthwick 1970.

transformation after dying, into a vessel of beautiful harmony.[30] The Christian achieves immortality through the Crucifixion and the mortification of his flesh. The Patristic association of the cithara as a lowly, earth-bound instrument, in contrast with the heavenly psaltery, will be elaborated below, but for the moment it is only necessary to point out that the tortoise was seen as a lowly, humble, insignificant animal.[31]

Christianity is, in such texts as those given above, being sold as a path to self-improvement, that is, self-purification. The image of a string instrument to represent this process can be used in two basic ways. The first allegorical topos is the process of tuning, which is, in essence, the act of adjusting discordant strings to resonate in the harmony of correct measure (proportion). The second topos is what a well-tuned cithara does: it makes sweet sound. *Musica humana* was the same concept, without the Christian component, of fundamental human health. Man's well-being depended upon the interdependence of mental (emotional / spiritual / psychic) and bodily (physical) health. The catch-word *musica humana* will bring Boethius to mind, who indeed was the main author to convey the idea, in a musical-mathematical context, to the Latin world of the Middle Ages.[32] Of the three levels of *musica* described by Boethius (see miniature below, **Pl. 7**), the second, *humana*, is perhaps the most easily misunderstood by modern students, who may understand the allegory as referring to the relationship and interaction between people, or human society. Boethius, in contrast, makes it clear that it is the relationship of the mind to the body, of the rational to the irrational, of the soul to the flesh. It was logical and convenient for the Patristic writers to adapt this ancient Greek concept for their message.

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[30] In the Roman and Patristic periods, the story of the invention of the lyre is transmitted by, among other sources, Ovid and, implicitly, Augustine, who refers to a tortoise-shell resonator, before being passed on by later authors in the context of music (Isidore, Rabanus). For the context of Ovid, see Schueller 1988, 108 - 110; for Isidore, see McKinnon 1998, 44; for Rabanus, see Throop 2009, 207. For a further discussion of the symbolism and use of the tortoise shell as a musical instrument, see Vendries 1999.

[31] See the interesting discussion comparing Patristic views of the cithara/psalterium pair with those of the Calabrian mystic Joachim of Fiore (late 12th c.) in Hirsch-Reich 1966.

[32] Boethius wrote, "whoever penetrates into his own self perceived human music. For what unites the incorporeal nature of reason with the body if not a certain harmony and, as it were, a careful tuning of low and high pitches as though producing one consonance? What other than this unites the parts of the soul, which, according to Aristotle, is composed of the rational and the irrational? What is it that intermingled the elements of the body or holds together the parts of the body in an established order?" (Bower 1989, 9-10).

Plate 7: Firenze, Biblioteca Medicea Laurenziana, Pluteus 29.1, f. 1:
Three levels of *Musica* (*musica mundana*, *humana*, *instrumentalis*).[33]

[33] http://www.szkolateologii.dominikanie.pl/wp-content/uploads/2016/08/Pani-Muzyka-3.jpg (accessed 12.12.2017).

The Patristic authorities, then, made good use of the concept of *musica humana*. There is also in their work an echo, albeit a somewhat fainter one, of the construct of *musica mundana*.[34] "Now if the cosmos is an harmonious instrument set in rhythmic motion, I worship Him who tuned it, who strikes its notes and sings its concordant melody, not the instrument. Nor do the judges at the contests pass over the cithara players and crown their citharas," as the 2nd-c. author Athenagoras formulated it in his *Supplication for the Christians*.[35] More frequently encountered, however, is a pairing of cithara and *psalterium*, as found in the Psalms of the Old Testament.[36] This pairing of terms brought to the reader an immediate association of giving praise to God, as in the Psalms, but it also generated an interesting allegorical comparison of these two different physical forms of cithara, which raises an important question for us: did the Patristic authors have specific instruments in mind, and if so, what impact might this have had on the evolution of the cetra in Italy? Let us briefly examine a handful of passages including the terms cithara and *psalterium*:

"David alone of the prophets prophesied with an instrument, called by the Greeks the 'psaltery,' and by the Hebrews the 'nabla,' which is the only musical instrument that is quite straight, and has no curve. And the sound does not come from the lower parts, as is the case with the cithara and certain other instruments, but from the upper. For in the cithara and the lyra the brass when struck gives back the sound from beneath. But this psaltery has the source of its musical numbers above, in order that we, too, may practise seeking things above, and not suffer ourselves to be borne down by the pleasure of melody to the passions of the flesh." (Hippolytus, c. 200, *In Psalmos*, I, 2)[37]

"While the brass of the cithara and lyre respond to the plectrum from below, this psaltery has the source of its harmonious strains from above, so that we two might be anxious to pursue

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[34] For the *musica mundana* reference in Boethius, see Bower 1989, 9.

[35] See McKinnon 1987, 22.

[36] Psalms 32:2, 56:9, 80:3, 91:4, 107:3 and 150:3. See Van Schaik 1992, 75-76.

[37] Schaff 1885, 500.

higher things, and not brought down to the passions of the flesh for the pleasure of song." (Basil the Great, c. 330 - 379; *Homilia in psalmum* i, 2)[38]

"Some also take the meaning of these instruments allegorically and say that the tympanum calls for the death of the flesh and that the psaltery looks to heaven. And indeed this instrument is moved from above, not from below like the cithara." (John Chrysostom, c 347 - 407; *In psalmum* cxlix, 2)[39]

> "But what is psaltery: what is cithara? Through His flesh two kinds of deeds the Lord has wrought; miracles and sufferings: miracles from above have been, sufferings from below have been. But those miracles which He did were divine; but through body He did them, through flesh He did them. The flesh therefore working things divine, is the psaltery; the flesh suffering things human is the cithara. Let the psaltery sound, let the blind be enlightened, let the deaf hear, let the paralytics be braced to strength, the lame walk, the sick rise up, the dead rise again; this is the sound of the psaltery. Let there sound also the cithara, let him hunger, thirst, sleep, be held, scourged, derided, crucified, buried. When therefore thou seest in that flesh certain things to have sounded from above, certain things from the lower part, one flesh hath risen again, and in one flesh we acknowledge both psaltery and cithara." (Augustine, 354 - 430; *Ennarrationes in psalmos* 56, 8)[40]

These commentaries on the Psalms present an identification of the *psalterium* with a more exhalted, heavenly side of things and the cithara with a more passionate, earthly side. In the words of Athanasius, "arise psalterium and cithara, the psalterium is the soul, the cithara the

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[38] McKinnon 1987, 66. This is an interesting early reference to metal strings for both the *cithara* and *lyra*. Basil had clearly read Hippolytus, whose earlier source(s) I have not been able to trace, with the possible exception of the Roman writer Flavius Josephus, who, in the last quarter of the first century, wrote in his treatise *Jewish Antiquities* VIII, 3. 8, that an alloy of gold and silver, *electrum*, was used to make the *kinnor* (the instrument translated by Latin writers as *cithara*). Before using this passage as evidence that the ancient Hebraic instrument commonly had strings of this metal, we should remember that the context is the construction of Solomon of the Temple, for which he had *forty thousand* kinnors built (sic). See Montagu 2002, 41 - 42.

[39] Translation from the Greek by McKinnon, see McKinnon 1987, 83.

[40] McKinnon 1965, 235.

body."[41] The comparison between the human body and the cithara became such a fundamental concept to Christian culture that, to this day, comparative anatomical terms are used to describe instruments such as violin, guitar, etc: "neck", "body", "shoulders", "back", "waisted sides", and others.

Augustine elaborated numerous other references to *psalterium* and cithara in his Psalm commentaries, describing the *psalterium* as having the soundboard "above", in contrast to the soundboard of the cithara which is "below"; his comments, while firmly within the context of allegory, might be taken to imply a description of the form of the two instrument types and how the they are plucked, from above and below respectively.[42] Augustine also described the *tympanum* or hollow resonating chamber of the cithara by a comparison with *testudo* (tortoise-shell).[43] Augustine was enormously influential: in McKinnon's words "it was Augustine, especially, who expanded and elaborated the instrumental allegories of the Eastern Fathers in his massive *Enarrationes in psalmos*. In turn, Augustine's work largely determined the content of Western Psalm commentaries."[44] We may note that by combining the image of a tortoise-shell with the term cithara, Augustine effectively subsumes the lyre

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[41] McKinnon 1965, 222.

[42] In his discussion of the passage from Hippolytus given above, Hugo Steger (Steger 1961, 50) clearly envisioned a trapezoidal-shaped instrument with the term *psalterium*, while with the "soundboard above" description, he understood a playing position whereby the psaltery was held upright against the chest.....in other words, he was thinking mainly of images of psaltery-players from medieval art. The chest-held position presupposes a triangular or trapezoidal instrument, including the so-called "pig snout" psaltery of the Middle Ages. A second possible way of playing the psaltery is to have it lying on one's lap, which excludes the 'resonator-above' idea, although this position is indeed 'played from above.' Steger's main point here, and it is a plausible one, is that the Church Fathers employed instruments they had first-hand knowledge of in their Christian allegories.
McKinnon felt, by contrast, that *psalterium* represented an abstract concept for the Fathers, in other words, they had no corresponding "real" instrument in their culture with which to associate the term (McKinnon 1965, 222). The cithara, on the other hand, was an instrument familiar to them. See also Footnote 6 above regarding the proposal of Vendries concerning the *psalterium*.

[43] See Van Deusen 1988 for an interesting discussion of cithara / *psalterium* symbolism in Augustine and Cassiodorus, including the Latin passages referenced above. The "soundboard above / soundboard below" comparison must be approached with caution, in terms of making conclusion about specific instrument types that the Patristic writers may have had in mind. For McKinnon, "the *psalterium* was for most Fathers a general term for a stringed instrument so that in their allegories they were free to invest the psalterium with whatever form they wished....the cithara, a real contemporary instrument, had earthly associations, while the *psalterium* was an unknown quantity and also a term rich in mystical suggestiveness."

[44] McKinnon 1968, 9.

morphology into that of the cithara. In other words, the cithara in this passage is associated with an oval resonator which is suggestive of lute-family instruments, i.e., necked chordophones. This is seemingly a small descriptive detail, but it will set a precedent for members of the lute family, including the example carved by Benedetto Antelami shown at the beginning of this chapter, to be considered a cithara.

A second example of the morphological confusion between the lyre and the *cithara*, which later centuries witnessed, can be found in treatises on astronomy, where the constellation *Lyra* might be confused with the form of the cithara, as in the drawing shown in **Pl. 8**, combining the rounded resonator and horns of the lyre with the square base and kollopes (see Glossary for these terms) of the cithara :[45]

Plate 8: Bern, Burgerbibliothek, Cod. 88, fol. 4v: Germanicus, *Aratea* (diagram of the constellation *Lyra,* c. 1000).

[45] http://www.e-codices.unifr.ch/en/list/one/bbb/0088. For kollopes, see Chapters 2 and 4 below.

Finally, the Fathers' consideration of *psalterium*/cithara with a heavenly/earthly symbolism contains an echo of the Greek distinction between *κιθάρα/λύρα* (kithara/lyre) that was touched upon earlier: the kithara is more refined, exalted, while the lyre, with its lowly tortoise shell, is more humble. The allegorical writings of the Church Fathers, in sum, introduced discussion about musical instruments named in the Bible, primarily in the Psalms. The Patristic authors played a vital role in shaping the iconography of the illuminated Psalters of the Middle Ages and Renaissance, with masterful images illustrating King David as citharist.

1.4 Encyclopedists and Other Authorities on Music

Before considering the form and features of David's instruments in Psalter illustrations, and whether these sources might have played a part in the evolution of the cetra, a number of further text sources must be considered. As transmitters of Greek knowledge to the Latin world, Boethius, Cassiodorus, Isidore and Rabanus Maurus were regarded as high figures of authority in the Middle Ages and, to some extent, in the Renaissance. Of some consequence for the later understanding of cithara were the following, listed here in chronological order:

Julius Pollux - The earliest compilation author of relevance for our topic is the Greek scholar Pollux, whose *Onomasticon* (c. 175) is a kind of encyclopedia of nouns and phrases essential for the understanding of life and thought in Classical Antiquity. We shall return to his work when discussing the evolution of the cetra in the Humanist period.

Martianus Capella - A book of travels through the spheres, *De nuptiis Philologiae et Mercurii et septem artes liberales* (The Marriage of Philology and Mercury and the Seven Liberal Arts, fl. 410 - 420) presents the wedding of groom Mercury (Eloquence = Trivium, or the skills of using words; an alternate meaning could be Profitable Action) and bride Philologia (Learning = Quadrivium, or the skills of measurement in Nature; also, Knowledge by Study) at Jupiter's castle, a union which has been recommended by Apollo, inventor of the cithara and the god who brings everything into tune in his grove of tall trees that make music on Mt. Parnassus. Abounding with wondrous images, the story introduces the seven noble maidens who are the *artes liberales*. Last to appear is *Harmonia,* representing *musica*, whose laminated-gold garment "tinkled softly and

soothingly with every measured step and movement of her body." Her main attribute is not the expected cithara, but a veritable Shield of Harmony, a circular metal shield (*clypeum*) with dazzling concentric-circle engravings (the resonant spheres), attuned to each other, from whence issue forth "a concord of all the modes...no lyre or lute or tetrachord appeared on that circular shield, yet the strains coming from that strange rounded form surpassed those of all musical instruments."[46]

This extraordinary dream-vision does not gain our attention as the earliest standing ovation for a musical performance - which it may be, and from the gods, no less - but rather, for the reason that Musica (Harmonia) seems *never* to be represented in European art, of any period, as having a circular shield as her primary attribute, representing *musica mundana*; she is usually depicted with a cithara of some kind (lyre, harp, psaltery, lute), alternatively in late

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[46] Translation in Stahl 1977, 352-353. The original full passage reads *Dextra autem quoddam gyris multiplicibus circulatum, et miris ductibus intertextum velut clypeum gestabat, quod quidem suis invicem complexionibus modulatum ex illis fidibus circulatis omnium modorum concinentiam personabat. Laeva autem Virginis quamplures ex auro adsimulatae, parvaeque effigies theatralium voluptatum, religataeque pendebant. Verum ille orbis, non chelys, nec barbiton, nec tetrachordon apparebat; sed ignota rotunditas omnium melodias transcenderat organorum*. Transcribed from *Antiquae musicae auctores septem. Graece et Latine, Marcus Meibomius restituit ac notis explicavit*, 2 vols. Amstelodami: apud Ludovicum Elzevirium, 1652, (Hayes 1994, 2:165–98). ("In her right hand Harmony bore what appeared to be a shield, circular over-all, with many inner circles, the whole interwoven with remarkable configurations. The encompassing circles of this shield were attuned to each other, and from the circular chords there poured forth a concord of all the modes. From her left hand the maiden held, suspended at equal length, several small models of theatrical instruments, wrought of gold. no lyre or lute or tetrachord appeared on that circular shield, yet the strains coming from that strange rounded form surpassed those of all musical instruments", in the translation of Stahl and Johnson 1977, 352-353).
Regarding the "small models of theatrical instruments", a footnote (Stahl and Johnson 1977, 353, Footnote 23) explains, "Remigius says that the term *effigies* refers to musical instruments made by mortals, as contrasted with the divine music symbolized on the shield." "Theatrical instruments" is a term used in Patristic writings to mean instruments used in secular music, and later in Martianus' narrative, "Harmony's songs delighted and soothed the spirits of all the gods; and the strains that poured forth from her stringed instruments were no less sweet than the melody of her voice." (Stahl and Johnson 1977, 356).

medieval / Renaissance images with an organ as an instrument demonstrative of musical science.[47] Capella also has Musica singing songs for the gods and playing "stringed instruments" later in his tale.[48]

Boethius: Moving ahead one hundred years we meet Anicius Manlius Severinus Boethius (c. 480 - 524), who, thanks to its success in later centuries, did more in his *De musica* to establish the cithara as the music science-theory instrument of choice, than any other single work.[49]

Cassiodorus: Boethius' Roman colleague and successor Cassiodorus combined Christian writings, including Psalm commentaries a la Augustine, with a Liberal Arts compilation intended as an encyclopedia for clerics (*Institutiones*, c. 530 - c. 550).[50] The latter has some material on music, but the Psalm commentaries, especially, contain numerous allegorical references to the cithara.[51] Among these is a comparison between the shape of the cithara and the letter "D" (Greek letter *delta*), which will be repeated by later writers.[52]

An 11th-c. Latin gloss on the section of the *Institutiones* concerned with musical instruments (*Institutiones* ii, 5 - *Instrumentorum musicorum genera sunt tria: percussionalia, tensibilia, inflatilia*) may shed light on contemporary instruments used in Italy c. 1000: a bowed *vitula*, *arpa* (harp), a lyre which is called an Italian instrument (*itala rotta*), a non-Christian *lira* of

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[47] A portrait of a lutenist, Felix Hungersberger, by Albrecht Dürer in 1520 shows a man labelled in the drawing by the artist as a *kostlich und ubergrad lawtenschlaher* ("exquisite and outstanding lutenist"). Hungersberger is kneeling behind a prominent circular shield, without any lute, but with the tip of a sword visible behind him (he had a military career as an imperial captain in the service of Charles V). Dürer, himself an avid lutenist, added a second note: *Und sind dy pesten felix adolff samario* ("and the best [lute players] are Felix, Adolf [Blindhamer] and [Gianmaria Alemanni]"). While the presence of a shield in the portrait is logical given its subject's military identity, reference to Musica and Rhetorica are called to mind. For further discussion see Young and Kirnbauer 2003, 250 - 253.

[48] *Talibus Harmoniae carminibus oblectati omnes permulsique divi. nec minor quippe ex fidibus suavitas quam vocis modulamine resultabat (fidibus* = "stringed instruments"); see footnote 46 above for English translation in context.

[49] The standard edition of this work is Bower 1989.

[50] McKinnon 1998, 33-38.

[51] On the Psalm commentaries, see Van Deusen 1988.

[52] For a list of sources containing references to delta-shaped instruments, beginning with Cassiodorus, see Van Schaik 1992, 63, 152, note 12. This work also includes an entire chapter on "The Delta Harp," with extensive discussion of the sources.

some kind, and a cithara played with a plectrum. As Calvin Bower pointed out in his interesting research published in 1993, these glosses may offer a new interpretation of the illustrations found in two 11th-12th-c. manuscripts from northern Italy of the same Cassiodorus material.[53] The place of the illustrations in the cetra narrative will be discussed below.

Isidore of Seville: Isidore's (d. 636) monumental work, influenced by Cassiodorus, Augustine, Quintilian, Macrobius and Boethius, includes multiple references of interest to the cithara story. Speaking first of the inventors of music, in olden times, the lyre and kithara (*lyra vel cithara*) were used at banquets. In the threefold division of music as sound produced by the voice (*musica harmonica*), wind instruments (*musica organica*) and struck instruments (*musica rythmica*), the cithara is given as the generic example for the last-named category. After more detailed treatments of the first two categories *harmonica* and *organica*, Isidorus looks at the *rythmica* division, where the first to be mentioned are the different species of cithara, about which a number of comments are made. A summary of Isidore's notable points includes:

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[53] Bower 1993. The relevant passages from Venice, Biblioteca Marciana, lat. Z. L. 497 on stringed instruments read: *DE CITHARA Perstrepit exiguo cum garrula cithara plectro DE VITULA Vitula bis binos arcu spectante boatus DE ARPA Arpa gerit quinas daxtra pendente sonoras DE LIRA Consue bis binas et tu lira barbara voces DE ROTTA Cantica melliflua da nobis itala rotta* ("The garrulous cithara makes much noise with a meager plectrum. The *vitula* emits two double crude tones with bow attending. The harp offers five sonorities with the right hand hovering. And you, barbarous lyre, accustom yourself to two double pitches. O Italian *rotta*, give us mellifluous songs." The translation is Bower's).
Before drawing conclusions about the Venice manuscript, there may be a connection between this source and an earlier one in Old High German, the *Evangelienbuch* of Otfrid von Weissenburg (mid 9th-c.), where verses 198 - 199 use the terms *líra fídula hárpha* and *rótta*. Two of these four, *lira* and *fidula*, relate to terms we have seen in earlier sources listed above (*lira*/*lyra*: Church Fathers; *fidula*: Martianus). The earliest document to my knowledge containing *rotta* and *harpa* is the well-known 6th-c. poem of Fortunatus, *Carminum Liber VII*, viii, 63-64, where *crotta Brittana* carries an association with Britain and the Welsh crwth; see Fortunatus, Venantius and Friedrich, Leo, *Venanti Honori Clementiani Fortunati presbyteri Italici opera poetica*, Berolini (1881), 163: *Romanusque lyra, plaudat tibi barbarus harpa, Graecus Achilliaca, crotta Britanna canat* ("May the Roman praise you on the lyre, the barbarian on the harp, the Greek on the cithara, and the Briton on the rotta.") For more on this passage, see Luisella Fadda, Anna Maria, "Cithara barbarica, cithara teutonica, cithara anglica", *Romanobarbarica* 10 (1988 - 89), 232-239.
For the original text of the Evangelienbuch, see *Thesaurus Indogermanischer Text- und Sprachmaterialien* (http://titus.uni-frankfurt.de/texte/etcs/germ/ahd/otfrid/otfrilex.htm, accessed 16.07.2017)
See the "Iconography" section of this chapter below for the illustrations mentioned above and for further discussion.

1. Tubal invented the cithara and *psalterium*.[54]
2. According to the Greeks, Apollo invented the cithara.
3. In Doric Greek, kithara meant human chest, hence the comparison between the instrument and part of the human body.
4. Many different types of *cithara* were invented - named *psalteria*, *lyrae*, *barbitae*, *phoenices*, *pectides, Indicae* and numerous others, of square and triangular form.[55]
5. The ancients called the cithara *fidicula* and *fidicen*, because strings must agree with each other, like men who have faith (*fides*).
6. The ancient cithara had seven strings, also according to Virgil; it was invented by Mercury.
7. The psaltery is similar to that of foreigners, in the form of the letter delta. It differs in that it has the soundbox above and the strings are struck below, whereas the (other) cithara has the soundbox below.
8. The Hebrews used a ten-string psaltery, corresponding to the Ten Commandments.
9. The lyre was invented by Mercury; although mentioned previously, details of the Homeric tale are now provided; resonator has ovoid form.

The passage we have been examining confirms that Isidorus had some knowledge of ancient Greek string instrument names. In the absence of any surviving artifacts or monuments, it seems difficult to postulate that he himself knew any of these as a contemporary instrument (although the physical form of the *barbitos* seems to have been invoked later in the 13th c. in a

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54 Tubalcain was the half-brother of Jubal, the inventor of music in the Book of Genesis. Because of the name similarity and the fact that Tubalcain was a blacksmith, the two names were sometimes confused in early treatises on music.

55 While a detailed discussion of the nature of ancient Greek instruments lies outside the scope of this essay, a comment on Isidorus' various cithara names may be relevant to our study. *Barbitae* clearly comes from *barbitos*, one of two types of turtle-shell lyres used in Classical Athens of the late sixth and fifth centuries. The smaller version is usually referred to in modern organology literature as chelys-lyre (possibly Isidorus' *lyrae* in this passage), as distinct from the *barbitos.* It had the same size turtle-shell body as the chelys-lyre, but much longer arms, which, at the yoke-end, were strongly incurved. The *phoenices* is the *phoenix* found in the Pseudo-Aristotle Problems (XIX, 14) and mentioned by Pollux (Pollux IV, 59; see Vendries p 66-67), but regarding this mysterious string instrument nothing else can be said. The same goes for *Indices*, which has been translated as "Indian cithara" (Strunk / McKinnon), which requires two people to play it. *Pectides* corresponds with *pektis*, an ancient Greek harp; another Greek term for harp was *psalterion*, which Isidorus begins his list of ancient Greek *citharae with.* See Maas 1989, 113 - 138, 184.

handful of chordophone images from Italy and Spain; see **Pl. 92**). In contrast, his comment listed as Point 7 above, regarding the shape of the psaltery he knows - as compared with a non-Christian type - seems to suggest a contemporary instrument of his culture.

The so-called **Dardanus Letter** (first half 9th-c.), a commentary on instruments of the Old Testament, is an anonymous document which has been described as "the most comprehensive and important treatise on musical instruments of the early Middle Ages".[56] Once thought to have been written by Jerome to a certain Dardanus, this authorship has been rejected since the time of Erasmus.[57] The text exists in three different source-contexts, (1) as part of *De musica* of Rabanus (see below), (2) as an independent treatise in music theory compilations and (3) as introductory material in selected Psalters.[58]

While the **Dardanus Letter** contains no unequivocal description of a chordophone, and indeed, little of use to understand instruments contemporary with the writing of the Letter, it makes two statements about the cithara which have potential relevance to the Christian identity of the later cetra. First, the cithara had 24 strings as used by the Hebrews, which symbolized the 24 Elders of the Apocalypse in the New Testament.[59] Second, it was shaped like the Greek letter delta (D).[60] The earlier text of Isidore had associated this letter shape with the *psalterium* and with the barbaric cithara, and joined that information together with the older *psalterium* = sound-box above, cithara = sound-box below distinction. Dardanus simplifies the formulation and applies it succinctly to the *cithara*. The form of the *psalterium* is solely quandrangular here, in opposition to the description given by Isidore.

Rabanus Maurus *De universo de rerum naturis* (c. 830 - 844), containing material on music, *De musica et partibus ejus* (including the Dardanus Letter and many borrowings from

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[56] Seebass 1973, 141. The reception of this source spans a huge period, 9th c. - 18th c. (Lexicon of J.G.Walther, 1732); see Hammerstein 1959, 117.

[57] Hammerstein 1959, 117.

[58] Seebass 1973, 142.

[59] See CE 15, the Elders of the Apocalypse in San Francesco Basilica inferiore in Assisi.

[60] For the text of the Dardanus Letter, see Hammerstein 1959 and Avenary 1961.

Isidore), represents a Carolingian textbook of substantial influence for the Middle Ages.[61] It is not known whether the Rabanus text served as a source for the Dardanus Letter, or whether the reverse is true. Underscored points of relevance for the cithara include:[62]

1. The cithara has a D(elta)-shaped body with 24 strings.
2. The 24 strings represent the 24 Elders of the Apocalypse.
3. The cithara symbolizes the Cross, strings symbolize the arms of the Crucified One.
4. The cithara symbolizes the Church.
5. The resonator is below, and it symbolizes earthly life.
6. Mercury invented the *lyra* (a type of cithara) of tortoise (oval) shape.
7. The building of the temple of the Church, by using precious teachers of Christianity, is like the cithara and *lyra* builders who use precious rare woods for construction of a harmonious tool, whose function is to give praise.

The delta-form body of the cithara was first noted by Cassiodorus, as stated above. Musicologist Martin Van Schaik provided a welcome and lengthy discussion in 1992 about the symbolism of the delta body shape. While the first and most logical association might be "D" stands for the instrument of David, as the first letter of his name, Van Schaik points out that this specific meaning is not given in any commentary.[63] Cassiodorus and others (who picked up the reference that the cithara had the delta shape) seem to have conflated cithara and *psalterium*, for the *psalterium* was consistently described as having 10 strings. For the Greeks, the number 10 was the sum of the *tetrakys* (1,2,3,4) and was represented by a geometric drawing of an equilateral triangle or figure made up of 10 points, consisting of one point at the top, two below that, three below that and four at the bottom. The string number, in other words, generated the delta form of the *psalterium*'s body. The cithara, in texts such as

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[61] For the 9th-c. Pseudo-Jerome commentary on Daniel 4:7 referred to Epistola ad dardanum (Dardanus Letter), see Hammerstein 1959 and Avenary 1961.

[62] See Richenhagen 1989, 232 - 241.

[63] Van Schaik 1992, 80.

Rabanus, had 24 strings and (in contrast to the physical distinction made between the two instruments by the earlier Church Fathers) the delta shape.

Van Schaik made an interesting analysis of delta-form instruments where the "D" shape had been rotated.[64] Although he did not look at necked chordophones, the rotation principle may be applied in their case as well, which, using the example of a 180 degree rotation of a D, generates the spatulate body shape which later became a salient morphological feature of the Romanesque cetra (see **Chapter 2**).

Post-Carolingian Psalm commentaries, for example, that of Petrus Lombardus, *Commentarius in psalmos*, made use of the allegory of the Cross/cithara.[65] We shall examine iconographic examples below, keeping in mind that there is the background of Psalm commentary texts extending all the way back to the Patristic writers of the early Church.

Treatises concerned with Carolingian chant practice (examples: *Musica disciplina* of Aurelian of Réômé, *Scolica enchiriadis*, *Alia musica*) offer little material of direct relevance to our cithara narrative, with the exception of two points.[66] First, following the graphic pitch-representation convention of Boethius and others, the earliest form of a musical staff, that is, parallel horizontal lines representing pitches, comes from the image of the parallel strings of the cithara lying horizontally. This was used, by way of example, in the 9th-c. treatise of Hucbald, *De Harmonica Institutione*, and became increasingly institutionalized in music theory writings and musical notation of the Middle Ages.[67] As it had been in Boethius, the cithara was the primary musical instrument to be associated with the study of music as a science. Secondly, music treatises including tonaries were occasionally illustrated with instruments, and this too can provide a modicum of iconographical insight.

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[64] Van Schaik 1992, 88-89.

[65] A facsimile of the 12th-c. Petrus Lombardus codex Württembergische Landesbibliothek, MS Cod. theol. et. phil. fol. 341 may be viewed at http://digital.wlb-stuttgart.de/sammlungen/sammlungsliste/werksansicht/?id=6&tx_dlf%5Bid%5D=2952&tx_dlf%5Bpage%5D=9 (accessed 02.07.2017).

[66] A useful summary of the Carolingian treatises and their context is found in Philips 1990.

[67] On Hucbald and his treatise, see Babb 1978, 2 - 46.

1.5 Summary of Pre-Romanesque Commentary on Cithara

In sum, the body of texts presented above provides a "theory of the cithara", as it were, for the Middle Ages and Renaissance. It will be impossible to understand the language of the visual arts, upon which so much of our study will be based, without having text sources to refer back to. The main points we have seen are within Christian and Classical contexts:

(Christian Allegory and Symbolism)

1. The cithara is an appropriate musical instrument for a Christian, to give expression of humility and earthly piety, along with the *psalterium*, which is more tied with heavenly devotion. The former is an instrument of the common man.

2. The symbolism of the cithara is associated with David, Christ, the Cross and the human body, thanks in part to its physical form as a necked chordophone.

3. The cithara stands for the harmonious Church.

4. Its sound-box is "below", not "above" like the *psalterium*, suggesting the playing position of a lute-family instrument, with the neck held by the left hand higher than the sound-box held against the body of the player; by contrast, the widest part of the *psalterium's* sound-box is held up, against the chest of the player.

5. The association of the delta form "D" body shape, by selected commentators, with the cithara, may be manifested on instruments with and without necks.

(Classical Antiquity)

6. The kithara is the most appropriate instrument for *musica* (Greek-based musical science).

7. It was the first instrument of the gods, invented and played by the most musical god.

8. The kithara and chelys-lyre were the most appropriate instruments for accompanying poetic text.

9. The oval-shaped sound-box came originally from a tortoise shell, an association which became a fundamental morphological feature of lute-family instruments.

1.6 Morphology of the Cithara : Introduction

We now turn our attention to pre-Romanesque visual images of musical instruments, roughly - and not undauntingly - encompassing a millennium, c. 100 - c. 1100, which can be associated, directly or indirectly, with an Italian (Roman - Christian) provenance. Art history has typically divided this vast chunk of time into compartments labelled (1) late Roman / early Christian (2nd - 5th c.), (2) early Byzantine / pre-Carolingian (6th - 8th c.), (3) Carolingian (9th c.), and (4) Ottonian (10th - 11th c.).

In the absence of existing instruments, that is, an historical artifact which could be labelled a cetra, or a fragment thereof, one searches for the next-best thing to a first-hand experience. As Sebastian Virdung wrote in 1511, “no one is alive now who has made, heard or seen these instruments, for they are no longer in use. I would certainly like to see them, even more to

hear them, and most of all, *to know what they represented…because whatever Jerome wrote about these things, it always had to have a second, spiritual meaning*" (italics mine).[68] Virdung was of course not talking about a cetra per se (although in one sense, he was, as the source included cithara), he was discussing the instruments mentioned in the 9th-c. Dardanus Letter. Here we witness an early modern testimony to the idea that musical instruments in Western culture could have spiritual meaning (allegory, symbolism) as their most interesting aspect, more so than the actual sound or physical form; one can only marvel at how far away Western culture in the 21st-c. has come from this perspective.

The frontispiece to the Psalms in the so-called First Bible of Charles the Bald, also known as the Vivian Bible, provides an example of a *cithara* laden with "spiritual meaning", as Virdung put it. In a miniature made at Tours c.845 (**Pl. 10**), the crowned figure of David stands dancing, playing an instrument, in the center of a mandorla usually reserved, in contemporary works, for depictions of Christ in Majesty.[69] The almond-shaped mandorla is framed by a rectangle, with one of the four Cardinal Virtues, Prudence, Fortitude, Justice and Temperance, inside each corner.[70] David's four Temple musicians Ethan (spelled *Aethan*), Asaph, Jeduthun and Heman sit above and below him, playing instruments, while on his left and right stand the guards Crethi and Plethi.

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[68] The translation is from Bullard 1993, 111. The original text in Virdung 1511 reads: *kein mensch jetz lebe/ der die selben instrument gemacht/ gehoeret/ oder gesehen ha(t)/ dann die selben synd nit mer in dem gebrauch/ ye doch wolt ich sye gern sehen/ noch vil lieber hoeren/ und aller liebst wissen was sye hetten bedeutet/ dann was Hieronimus von den dingen hat geschriben/ dass muess alles ein andern geistlichen synn haben*. (Cii - Ciii)

[69] Paris, Bibliothèque Nationale, lat. 1, f. 215v. There are many published facsimiles of this famous work, for example, Mütherich, Florentine and Gaehde, Joachim, *Carolingian Painting*, Braziller, New York (1976), 78.
That the attitude of David represents the act of dancing is clear from late Classical models going back to the 6th-c. and earlier; see Thomas 2016, 48, where an embroidered panel from a 6th-c. (?) tunic shows Dionysian figures dancing in precisely the same position as David in the miniature above.

[70] The ancient association of virtue with music and musicians culminated, in a way, with the fascination of the possible complexities of proportional rhythm in polyphonic music of the late 14th and 15th centuries. So-called *ars subtilior* repertory, together with treatises on proportion extending all the way to the time of Thomas Morley, often used *virtus* as a word in the text of a composition requiring concentrated problem-solving in order to be correctly performed. In other words, a high level of skill was necessary which could only be achieved through the application of the virtues; the successful singer demonstrated the qualities of the virtues. The modern idea of a virtuoso as a musician who can play very fast has little to do with *virtus* in medieval music. See Fallows, David, "The End of the Ars Subtilior", *Basler Jahrbuch für historische Musikpraxis* 20 (1996), 21 - 40.

Plate 10: Paris, Bibliothèque Nationale, lat. 1, f. 215v: David with musicians, guards and Virtues (Tours, c. 845)

As stated in the Introduction, the three main 'hunting grounds' for musical instruments in Christian art before the 16th-c., are images that deal with King David, the Apocalypse and the Virgin Mary. These three theme-areas flourished chronologically in *that* order, and may be thought of as David = Carolingian, Apocalypse = Romanesque, and Mary = Gothic/ early Renaissance, keeping in mind that the first two of these three continued to be represented after their respective periods ended. The rise of Davidian art - the classic medium is the illustrated Psalter or Book of Psalms in the Bible - occurred as a Carolingian phenomenon for a very clear reason; their kings took power by force, not by traditional bloodline, and they very much needed to project an image of divinely-favored Emperors, rulers of the continuation of the Roman Empire under Christ - the Holy Roman Empire.

The miniature, in effect, presents a royal figure (David, suggestive also of Christ / Charles the Bald) in a *chlamys* or robe in the style of Byzantine imperial fashion, which Byzantine rulers like Justinian wore in imitation of late Roman emperors. David wears only the *chlamys*, being otherwise nude in the style of Classical Age warrior-heroes. The garment is the royal color, purple. By portraying themselves in the same garb as Byzantine emperors in their Bibles, Frankish rulers identified themselves with both imperial and divine power. Byzantine elements and style in both Carolingian and Ottonian art, then, are to be expected, and will continue to be influential going into the Romanesque period. The new way of playing stringed instruments with a bow, observable in the later 10th and 11th centuries, was a fashion in Byzantine culture before it spread westward into Italy and beyond.[71] But to return to our miniature, it is clear that the artist is referencing late Antique forms and modelling, in addition to the Byzantine elements.[72]

David is playing a *psalterium*, which we recognize from the text sources, including Isidore and Dardanus, which describe it as having the soundbox above. The more earth-bound cithara, with the resonator below, is being played by the figure below David on the left, labelled *Aethan* (**Pl. 11**).

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[71] Bachmann 1969.

[72] Mütherich 1976, 79.

Plate 11: Paris, Bibliothèque Nationale, lat. 1, f. 215v: detail of Aethan[73]

[73] Schlesinger 1910, 337, was the earliest music-specific modern study to include an image (drawing) of this instrument.

Aethan's cithara is heavily symbolic.[74] The geometrical form shown here contains the possibility of finding [at least] five Crosses: (1) an upper one, from the fingerboard going up to the highest trefoil as the vertical segment, and the horizontal crossbar comprised of the two inner arches framed by the outer-shoulder trefoils; (2) a lower Cross uses the strings as the vertical element and the straight upper edge of the resonator as its crossbar; (3) a Greek cross represented by the four-pronged ornament inside the space above the two arches; (4) a Patriarchal cross (also known as the Lorraine Cross) with two crossbars near the top; (5) a Papal Cross with three crossbars formed by the upper edge of the resonator, the two-arch-crossbar and the crossbar of the small Greek cross.[75]

The form of the cithara, too, hints at the architectural construction of a Church in cross-section, including the rounded arches of ceiling and windows above, and hollow vessel or nave below. The "nave" is the resonator referred to in many Patristic texts as being "below" on the cithara, as opposed to the *psalterium* held by David, in this miniature, with its resonator "above".[76] The resonator itself is spatulate in shape, which is a variant of the letter D - as a *cithara* must be, according to Dardanus /Rabanus.[77] The earlier discussions of Cassiodorus, Isidore, and others regarding the Delta-shaped *psalterium*, had congealed by the time of

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[74] The question arises whether David's four musicians follow iconographical patterns in terms of their instruments. Which musician is which is the first problem, for, in general, it is only in selected Carolingian - Romanesque illuminations that they are named. This study presents a total of four examples with names (Pl. 11, 51, 69 and CE 1). Three of these show Aethan/Ethan with a plucked instrument, and one, Pl. 51, labels "Asaph Cythara". I have been unable to find a dedicated study providing an answer on the question; neither Hammerstein 1961, 114-115, nor Seebass 1973, 134, offer comment (but see both studies for an overview of visual examples). My impression - and perhaps why both experts made no comment - is that there is no clear identification of any of the four musicians with a particular type of instrument. There does, on the other hand, seem to be an influential Carolingian model which places Aethan to the lower left of the central figure of David, giving the artist room to depict a stringed instrument in his hands without, for example going outside of the composition.

[75] There are many reference works on the history of crosses in Christianity. As two examples, see Metford 1983, 75 - 76; and Sill 1975, 30 - 32.

[76] The above-or-below, resonator-and/or-playing-position opposition between the *psalterium* and the cithara was discussed by McKinnon, who concluded that the topic began with Basil in the 4th-c., before it was taken up by many other authors. The *psalterium*, McKinnon maintained, did not correspond to a 'real' instrument for these writers, whereas the cithara did (presumably he means the Roman kithara, effectively a later version of the Classical Greek kithara, although nowhere in his dissertation does he explicitly say exactly what real instrument, at least until the Carolingian period, the cithara was).

[77] See commentary on Rabanus above.

Dardanus into the explicit description of the *cithara* as D - shaped instrument. Meanwhile, the upper architecture of the construct forms mirror-image D's, pointing, so to speak, up to Heaven.

The three prominent trefoil-lily ornaments at the upper end of the instrument are most typically found adorning crowns in Christian art of the Middle Ages. As a symbol of Sovereignty, Purity, Virtue, the Trinity, and the Cross itself, the three-pronged lily is arguably the most potent symbol to be associated with Christianity which has its origin in Nature; it grows in this form. The total number of 'leaves' or lily-segments is fifteen (three trefoils, plus the four segments of the Greek cross, plus one segment each on the shoulders of the resonator), suggestive of 3 x 5 (three strings, made from and symbolizing flesh) x (five Wounds of Christ); the viewer is shown the open palm of Aethan (as representative of David, himself prefiguring Christ) to evoke the image of the Crucifixion with open hand nailed to the Cross. A parallel connection with the number three is seen in the number of strings which the instrument carries. Two further aspects of the image hark back to Rome, recalling days of Imperial splendor: the portrait pose and the golden cithara. Aethan's head is rendered in side-view as in Roman portrait style, and his instrument is made of gold, symbolizing power and magnificence of the scene. Lastly, the chair upon which the musician is seated reflects Byzantine furniture form.

The miniature we have been discussing was painted at the monastery of St. Martin in Tours just before the middle of the 9th c., yet as we have seen, the artist was strongly influenced by elements of Byzantine fashion. To these influences we can add the lyre itself, which is prefigured in two surviving early Byzantine relief carvings of the 6th c., shown in **Pl. 12**[78] and **13a/b**[79]:

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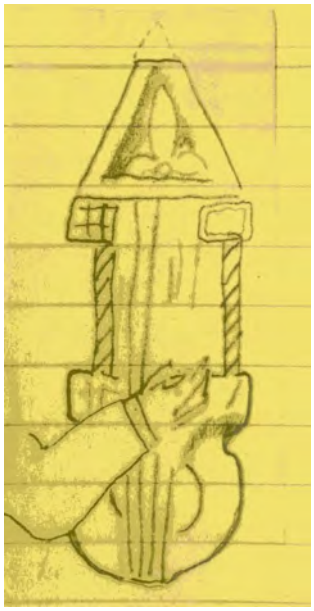
[78] https://www.pinterest.de/pin/419679259001229691/ (accessed 12.12.2017).

[79] Reproduced in Wessel 1963, 61 (Abb. 54), and in Buchner 1985, 55 (Abb. 49).

Plate 12: Berlin, Staatliche Museen, Antikensammlung, Inv. Nr. 2497: ivory relief panel with *pantomimus*, detail (early 6th c., Trier).



Plates 13a/b: a (= left), Leningrad, Hermitage Museen, wooden relief panel with David, detail (6th c.); b (= right), author's rendering.

If the datings offered in research publications are correct, the Berlin ivory relief is late 5th. or early 6th. c., somewhat earlier than the Leningrad example. The content of the Berlin plaque is distinctly pagan, that is, non-Christian. It shows a *pantomimus,* or solo male dancer who danced a story to musical accompaniment in Roman theatrical entertainment; he was precisely the type of character that gave musical instruments a bad name, according to the Church Fathers, by practicing lascivious amusements. This character prefigures the *jongleur* of the Middle Ages. His instrument conforms visually more to the lyra type than to the cithara, for it has an ovoid rather than quadrangular resonator, squared and shouldered at the upper edge in a spade shape with cut-outs below the shoulders (and thus of presumable wooden construction) and arms with prominent horns at the top....and not without sexual innuendo. The next example is the Leningrad instrument, dated perhaps 50 to 100 years after Berlin. Here, the horns have disappeared on what is otherwise the same instrument type. In their place is a large triangle crowning the lyre, and framing a trefoil-lily. The viewer will thereby have understood that the musician holding the lyre is David.

By the end of the 6th c., then, there is a Christianization of the lyre taking place. The earlier artifact, the ivory relief, found its way to St Maximin's Abbey in Trier. Whether it came originally from a workshop in Constantinople, a center of ivory relief carving in the early Byzantine period, and was exported to Rome or somewhere else, we do not know. The wooden carving in Leningrad has a Byzantine-Coptic provenance. Both instruments feature a general body shape that will be found on surviving Byzantine instruments, as will be seen below.

It is clear, then, that the artist who painted Aethan some two centuries after the Leningrad carving had knowledge of this lyre type as an Italo-Byzantine model, which was already becoming Christianized by c. 600. It is equally clear that the person who painted the next illustration from the Bible of San Callisto c. 870 was using a frontispiece to the Psalms in the First Bible of Charles the Bald as his model (**Pl. 14**):

Plate 14: Rome, San Paolo fuori le mura, lat. 1 (Bible of Callisto), f. 147v: David with musicians, guards, and attendents (detail), c. 870 - 875.[80]

Here is an instrument structurally very close to the lyre shown in **Pl. 11**, dated 30 - 35 years earlier; this source was produced at Rheims for the same patron Charles the Bald. Although this artist's style is less ornate with ornamental details, one easily recognizes his model. The only surprise is the angled playing position, a more natural one for stopping strings with the

[80] Seebass 1973, Pl. 99.

left hand on the lyre's neck.[81] Why would this artist have altered the playing position? Did he have more knowledge about playing this type of lyre than the earlier painter? This brings us to the question of 'real vs imaginary' when studying these images: were all four of these lyres (**Pl. 11-14**) existing instruments at the time the image was painted / carved? For that matter, were the robes pictured really worn by Carolingians?

The fashion of wearing Imperial Byzantine-style garments at the highest levels of ritual was practiced by Carolingian rulers, it was not simply an iconographic convention used to enhance the miniatures of their illustrated Bibles. They donned the robes because doing so was part of the publicity or public image the court wished to sell.[82] Similarly, Byzantine-styled items of furniture, such as a chair, are present in the miniatures that were used at the Carolingian court. The same line of reasoning applies to the lyres being played in the miniatures. It would be foolish to reject the idea that these art works depict actual contemporary instruments. More to the point, these images amplify visually the piety and virtue of a secular ruler by posing him as King David of the Old Testament. The reader is helped to understand this message by the presence of recognizable artifacts, including the lyre.[83]

The four examples presented above show how a late-Roman type of lyre became Christianized. We need now to step back for a wider view, encompassing more instrument types and a broader chronological field, to understand the manifestation of the Antelami chordophone type around 1100 in Italy.

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[81] The angled playing position was typical of the Greek chelys-lyre; see Maas and Snyder 1989, 99.

[82] Fashion in medieval court culture is discussed in Van Buren 2011; specific to Carolingian, Byzantine and Ottonian court fashion is the webpage <http://dressforsuccession.weebly.com/>, accessed 19.07.2017.

[83] On the Carolingian lyre, see Butt 2002, 167-168.

1.7 Morphology of the Cithara : Ancient Greek Lute Forms

The background story begins with two lute-types depicted in terracotta figurines and relief carvings from ancient Greece, beginning in the 4th c. BCE. A study published in 1965 by Greek historians Reynold Higgins and Reginald Winnington-Ingram examined thirteen images, concluding that there were two types of lute shown, A and B.[84] Type A is shown in **Pl. 15**:

Plate 15: Athens, National Museum, relief from Mantinea, workshop of Praxiteles (c. 330-320 BC), Muse playing pandoura.[85]

[84] Higgins 1965, 64.

[85] Panum (1915) 1971, 205; Behn 1918, 95; photo: <https://it.pinterest.com/pin/288793394837615728/> (accessed 12.12.2017).

Type B is shown in **Pl. 16**:

Plate 16: Alexandria, Greco-Roman Museum, statue of Muse with instrument (c. 330 - 300 BC).[86]

[86] Photo: https://it.pinterest.com/pin/354799276867525829/ (accessed 12.12.2017).

The difference between the two types is the shape of the body; type A (**Pl. 15, 17**) has clearly articulated shoulders or corners at the junction of where the neck meets the body, whereas type B (**Pl. 16**) has no such shoulders, making it difficult to tell where the neck ends and the body begins. The body sides of type A may be be straight or incurved, which a modern viewer might call "guitar-shaped" or "waisted". Type B could be called piriform or oval. The oval body shape, found in such natural forms as the tortoise shell and the gourd, is the more ancient of the two body types, going back at least to the Akkadian period (3rd millennium BC). A Hittite relief carved in the 14th c. BC at Alaca Höyük (in Anatolia, known to the Greeks as Galatia / Phyrigia) provides an early monument showing a body type of a long-necked lute with incurved sides (**Pl. 17**):

Plate 17: Ankara, Museum of Anatolian Civilization, (14th c. BC).[87]

[87] Schlesinger 1910, frontispiece; Panum (1915) 1971, 195; Behn 1918, 91; photo: https://i.pinimg.com/originals/e7/b7/e2/e7b7e2629ae7077b1a7b66df3b479ef8.jpg (accessed 12.12.2017).

Higgins and Winnington-Ingram noted that "one might conclude that the lute was probably not employed in Greece before the time of Alexander the Great and was perhaps introduced as a result of his conquests."[88] Alexander conquered Phyrigia in 333 BC, bringing up the question of the possibility of importing an updated version of the much older instrument type shown in **Pl. 17**.[89] **Pl. 18** strengthens this theory: here is an artifact from Eretria, some fifty kilometers from Athens, representing Eros "wearing 'oriental' costume (Phyrigian cap, trousers and a pouched chiton)" holding an elongated lute body with slightly incurved sides.[90]

When the depictions of lutes begin in 4th-c. Greece, most are of instruments with long or longish necks, and most show bodies of piriform profile rather than a shouldered/waisted shape. We have seen the shouldered Mantinea lute in **Pl. 15**, which is one of two or three existing examples.[91] The second rare example is shown in **Pl. 18**, a terracotta figure of winged Eros playing a lute with an elongated rectangular body with slight but discernible shoulder articulations in the shape of the body. Unfortunately the figure is damaged, with the neck and left hand of the player broken off. The question of the length of the neck is of some interest, because short-necked lutes (where the neck length does not exceed the body length and could also be a good bit less) are extremely rare in Greek sources; we have, to my knowledge, a grand total of two candidates (**Pl. 18, 20**):

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[88] Higgins 1965, 68.

[89] Higgins 1965, 68-69, discusses further arguments on the Mantinea lute as a possible new import, concluding that while the dating of the artifact cannot be conclusive, "the later the date the happier one will feel", i.e., the authors lean towards the view that it was a recent import facilitated by the campaigns of Alexander. According to Maas 1989, 185, lute-types "seem to appear in many parts of the Greek world - southern Italy, the Peloponnesos, Egypt, Cyprus - almost simultaneously and to have burst upon the scene about the time of Alexander's Persian campaigns of the late 330's".

[90] Description published on British Museum website http://www.britishmuseum.org/research/collection_online/collection_object_details.aspx?assetId=362112001&objectId=465113&partId=1 accessed 01.08.2017.

[91] Higgins 1965, 62, lists a gilt terracotta appliqué from late 4th c. Tarentum showing an instrument of type A; I have not been able to locate a published image of this item, from the collection of the Staatliche Antikenmuseum in Munich (8702). See also Maas 1989, 185, for a brief mention.

Plate 18: London, British Museum: terracotta figure of Eros (Eretria, 230 - 200 BC)[92]

[92] Photo: http://musiclanguagefrontiers.blogspot.ch/ (accessed 10.01.2017).

Plate 19: London, British Museum: terracotta figure of Eros earlier photo with intact (?) lute neck; this statuette was described by Higgins 1965 as "upper part of instrument, with the player's left hand, has broken away."[93]

93 Photo: Nickel 1972, Abb. 14.

Plate 20: Paris, Louvre: Tanagra figurine (first quarter 3rd c. BC)[94]

94 Panum (1915) 1971, 206. Photo: https://it.pinterest.com/pin/288793394837615701/ (accessed 12.12.2017).

Both of these lutes would seem plausible candidates for short-necked instruments in Greece of the 3rd c. BC, although I would be reluctant to take the two figurines as incontrovertible proof of the existence of a short-necked-lute type in Greece. For example, **Pl. 20** bears some morphological resemblance to a second terracotta figurine playing a lute-type chordophone (**Pl. 21**), which shows the altogether more common features of piriform body (type B) and elongated neck, i.e., a long-necked lute:

Plate 21: Paris, Louvre: Eros figurine (Myrina, first half 2nd c. BC)[95]

[95] Panum (1915) 1971, 206; photo: https://it.pinterest.com/pin/399413060675529208/ (accessed 10.10.2017).

1.8 Morphology of the Cithara : Roman Pandura Forms

Like the kithara and lyre, Greece bequeathed the long-necked lute to the civilization of Rome. The thirteen monuments presented in the study of Higgins depict just two character-types playing the instrument: a woman (sometimes a Muse), or Eros, represented about equally in the sources.[96] One of Higgins' artifacts was a gilt terracotta plaque used as a funeral decoration at Tarentum, for the pictorial sources of Roman lutes will follow the pattern of the lute as an instrument typically played by women, with funeral iconography as its most common context. Roman lute iconography begins generally in the 2nd c. AD, when we start to find images with consistent features on artifacts associated with the center of the Empire, the city of Rome.

Before proceeding with a short discussion of the Roman lute based on visual sources, the question arises, what was the lute called in its day? The Greek name was *πανδουρα,* which became the Latin *pandura.*[97] Literary sources from the 1st c. BC contain bits and pieces of information about it, the interpretation of which may be problematic. The authors who write about it are, generally, either from eastern parts of the Empire, or they associate it with the East. The following list of selected literary references, in Greek and Latin, from the end of the Roman republic (1st c. BC) through the end of the Roman Empire (early 5th c.) point to at least four regions of the eastern Empire which can be associated with the pandura, Egypt, western Syria, Assyria and Anatolia[98]:

—Varro (116 - 27 BC; earliest Latin reference[99]): *Pandura* is a type of cithara.[100]

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[96] Higgins 1965, 62-64.

[97] Research on name references may be outlined by the following, which is by no means an exhaustive bibliographical list: Panum 1940 (1915), 215; Higgins 1965, 65-66; Wardle 1981, 298-306; Maas 1989, 185 -186.; Vendries 2012, 110-112.

[98] See Vendries 2012, 110-112, for an excellent discussion of terminological sources.

[99] Vendries 1999, 119.

[100] De lingua latina, VIII, 61: *cur nona cithara et psalterio et pandura, dicamus citharicen et sic alia.* According to Varro is the earliest Roman literary source for *pandura*.

—Pollux (2nd c AD, Egyptian): Author mentions the monochord and the *trichordon*, three-string instrument, "which the Assyrians call *pandoura*".[101]

—Clement of Alexandria (c. 150 - c. 215, Egyptian) pandura of Phyrigian origin (Anatolia)

—Athenaeus (fl. c. 200, Egyptian) "the weak-sounding *pandurus*";[102] "Pythagoras, who wrote a book on the Red Sea, says that the *Troglodytae* (a tribe living by the Red Sea) made the *panduri* out of the daphne which grows on the seashore."[103]

—Emperor Elagabalus (ruled 218-222, family of Syrian origin) played pandura according to Lampridius.[104]

—Martianus Capella (fl. 410 - 420, Carthage) The pandura is an instrument appreciated (cultivated) by the Egyptians (*panduram Aegyptios attemptare*).[105]

An examination of Imperial iconographical sources and existing artifacts will confirm that the instrument type was cultivated in different parts of the Empire, including Egypt and Syria, and that it occupied a much humbler position than the cithara in Roman culture. Christophe Vendries gives **Pl. 22** as the earliest monument of Roman iconography with a pandura.[106]

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[101] Wardle, 1981, 305. See also Vendries 1999, 118. Mathiesen 1999, 284, uses the term "invented by the Assyrians", although Wardle's translation suggests familiarity, not origin per se.

[102] *Deipnosophistae* 4.78; English translation from *Athenaeus of Naucratis / The deipnosophists, or, Banquet of the learned of Athenæus* vol. I (1854), 281.

[103] *Deipnosophistae* 4.82; Athenaeus quotes earlier sources such as Euphorion; see Mathiesen 1999, 284, for a translation of the wood as "mangrove" (surely incorrect), and Wardle 1981, 305, for a reading of "laurel". The excellent work of 2012 by Vendries and Eichmann proves that laurel is the correct understanding; see Vendries / Eichmann 2012.

[104] Wardle, 1981, 306.

[105] Wardle 1981, 306, understands Capella's statement as "was an Egyptian invention." Vendries 2012, 110, reads "the Egyptians appreciate the pandura". The standard English translation of *De nuptiis Philologiae et Mercurii* of Stahl 1977, 357, reads, from the lips of Harmonia, "I permitted the Egyptians to try their skill with the pandura."

[106] Vendries 1999, 125; photo: https://it.pinterest.com/pin/310748443025318847/ (accessed 10.10.2017).

Plate 22: Mérida, Museo Nacional de Arte Romano: Inv. 8.241 (Emerita Augusta, end 1st c. - beg. 2nd c.), funerary carving of Roman Lutatia Lupata with pandura.

Pl. 23 shows a sarcophagus found beneath the church of San Crisogono in Rome:

Plate 23: Rome, Trastevere, San Crisogono: sarcophagus in marble, 2nd. c.[107]

[107] Photo: http://ancientrome.ru/art/artworken/img.htm?id=3773 (accessed 24.10.2015).

Pl. 24 presents a similar instrument to Plate 23, in a different medium (bronze):[108]

Plate 24: Rabat, Musée Archéologique: bronze pandura, 8 cm, Inv. B 753
(Iulia Valentia Banasa, 2nd - 3rd c.?).

Funerary sculpture from Roman and Athenian sarcophagus manufacturers show *pandurae* with relatively small bodies of ovalish or spade shape. A tortoise-shell resonator was used on some; **Pl. 25** and **27** below might be candidates for such instruments, whereas **Pl. 26** might suggest a carved neck-body joint and body.[109] Stone-carved images tend to have broadish necks, occasionally with significantly more than the usual three or four strings shown. Whether the broad neck (and/or string number) is medium-related to stone or metal work, or realistically specific to regional variations in Italy and Greece, we cannot say. A crescent-shaped ornament adorns the top end of the neck on **Pl. 23, 24** and **27**, of presumably no functionality to the sound of the pandura. Suggestive of the attribute of Luna, this may mark the pandura as a kind of lyre of the Roman moon goddess, appropriate to female musicians, in a pairing with the lyre of Apollo the sun god; it also echoes graphically the horns of Apollo's lyre with its two upright points.

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[108] Vendries 1999, 126-127; photo: https://www.pinterest.ch/pin/563442603373388879/ (accessed 09.12.2017).

[109] See Vendries 1999, 126-127, for the view that north African *pandurae* typically used a tortoise shell body. For more comment on the bronze artifact in Pl. 21, see Vendries 1999, 127 and Pl. Xc; for the Achilles sarcophagus shown in Pl. 23, see Vendries 1999, Pl. XIIb; for the mosaic from Hadrumetum, see the same study, 127 and Pl. XIa.

Plate 25: London, British Museum: Child's sarcophagus in marble showing the marriage of Cupid and Psyche, Museum number 1805,0703.132 (Rome, 3rd c.; found at San Cesareo in Palatio).[110]

[110] Schlesinger 1910, 240; Panum (1915) 1971, 210; Behn 1918, 96; photo: http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&assetid=1612951332&objectid=459993 (accessed 10.10.2017).

Plate 26: Paris, Louvre Museum: sarcophagus in marble showing Achilles at the court of King Lycomedes, detail of musicians with cithara (l.) and pandura (r.); Museum Inv. No. Ma 2120 (Athens, c. 240).[111]

[111] Schlesinger 1910, 322 - 323; Panum (1915) 1971, 213; Behn 1918, 97; photo: http://ancientrome.ru/art/artwork/sculp/gr/headstone/hea037.jpg (accessed 10.11.2017).

Plate 27: Paris, Louvre Museum: mosaic showing monkey with pandura (Hadrumetum, Tunesia, early 4th c.?).[112]

Long-necked chordophones are in evidence, then, in Roman culture on the Italian peninsula by the 3rd century AD, and they had been cultivated in Eastern Mediterranean cultures

[112] Photo: http://www.grandpalais.fr/sites/default/files/field_magazine_thumbnail/arton1801_0.jpg (accessed 10.12.2017).

substantially earlier. Greece, as we have seen, had the long-necked pandura since the 4th c. BC, and the Greek peninsula had become part of the Roman Republic during the 1st. c. BC. By the time of Emperor Augustus and the birth of Christ, all of the Eastern Mediterranean regions later to be identified with the history of the pandura had been annexed to Rome, some already since many decades. It would therefore seem reasonable to assume that the pandura was the earliest kind of lute on the Italian peninsula, and that it was known there, in some fashion, since the early days of the Emperors.[113] During the 3rd c. it apparently became fashionable enough to enjoy an important place in funerary iconography.[114]

Vendries' work as a modern scholar of the Roman pandura has been exceptional in fine-tuning our understanding of that instrument. In 1999 he wrote, in my paraphrase, "The repeated image of the lute in African iconography leads us to believe that from Roman Africa, which already flooded Rome with its manufactured products, Italy adopted the use of the lute. This instrument appears repeatedly in the arms of the women on the decoration of the vats of sarcophagi of the 3rd century, at the time of the crisis of the Third Century." I would agree that a foreign influence upon the lutes of the Italian peninsula was an important step for their development - also for the cetra of the 11th c., toward which we are slowly but surely creeping - but that the influence was not specifically north African during the 2nd and 3rd centuries. As outlined above, the pandura was already established in Rome by then via its proximity to Greece and the rest of the Eastern Empire.

1.9 Morphology of the *Cithara* : Byzantine Pandura Forms

The tangible influence for Italy came from an amalgamation of Christian and late Roman elements manifested in the *pandurae* of early Byzantine (Coptic and Syrian in particular) cultures of the southeastern and eastern Mediterranean, first visible in the 5th c., not before. Two groups of artifacts will illustrate this statement, the first a modest but significant group

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[113] Vendries 1999, 128.

[114] That the instrument received a boost in public attention is to be understood from the importance of the emperor who is known to have played it, the short-lived Elagabalus, 218 - 222. Did his successor and Syrian sibling Severus Alexander also have a taste for it? See the discussion in Vendries, 2012, 106.

of four iconographical sources (**Pl. 28-33**), and the second, a group of seven existing pandura specimens in museum collections (**Pl. 35-40**). All sources of both groups show fundamentally the same type of pandura, although details of body size and shape are depicted according to different styles. The first two sources are floor mosaics:

Plate 28: Constantinople, Imperial Palace: mosaic showing pandura player (c. 425? - c. 625).[115]

[115] Farmer 1949 was the first publication to show a photo of this mosaic, which he called a Greek "pandore"; interestingly, while drawing welcome attention to the source, the article did not attempt to assign a date to the mosaic. Vendries 1999, 129, ftnt. 3, cites the early dating 425 - 450 from Salies 1987, whereas a consensus now favors a dating of the earlier 7th c. proposed in Trilling 1989 . Photo: https://it.pinterest.com/pin/472807660856222843/ (accessed 25.12.2017).

Plate 29: Qasr al-Lebia, Museum of Qasr al-Lebia: mosaic showing shepherd with pandura (dated 539, executed for Christian church under Bishop Makarios).[116]

The next two sources are from Qusayr 'Amra, an 8th-c. hunting lodge east of Amman in Jordan. Both frescoes (**Pl. 30, 32**) depict spatulate-bodied *pandurae* with U-shaped side curvatures, while **Pl. 31** shows an artist's drawing of the fresco in **Pl. 30**, published in 1907:

[116] Photo: https://it.pinterest.com/pin/399413060675234612/ (accessed 22.08.2017).

Plate 30: Amman, Qusayr ʻAmra, Vault of Apodyterium: fresco showing bear with pandura (c. 725-740).

Plate 31: Drawing by A. Mielich of fresco shown in Pl. 30, published in 1907 and re-published in 1966.[117] The drawing has altered the shape of the resonator.

[117] Musil 1907, pl. xxxiv; Farmer 1966, Pl. 14 ("drawing by Alois Musil"). Mielich's drawing was published a third time in Fowden 2004, fig. 19.

Plate 32: Amman, Qusayr ‘Amra, fresco on ceiling arch of Great Hall showing woman with pandura (above), and author’s on site drawing of pandura in same fresco.

In these images from the 5th - 8th c., we notice body (resonator) shapes unlike those of earlier *pandurae*. **Pl. 28** displays a resonator shape bearing a certain resemblance to **Pl. 22** and **26**, which suggests a retrospective association on the part of its creator; in fact, it is not so unlike the Mantinea relief from the time of Alexander the Great (**Pl. 15**). **Pl. 29**, a 6th-c. mosaic from a church floor in Libya, uses a new outline with articulated shoulders. Let us call

it a *spadix*. The following image (**Pl. 34**) from a grave chapel at Antinopolis in Egypt, 4th or 5th c., shows a woman holding a palm branch or *spadix*, a Christian symbol of eternal life and "Mary's triumph over death".[118] Similarly, the instrument in the Libyan mosaic is depicted in the proximity of a peacock, an early Christian symbol of eternal life.[119] I have borrowed the term *spadix* from three authors writing about musical instruments from the second century, Quintilian, Nicomachus and Julius Pollux, with full awareness that we do not know, ultimately, which kind of instrument they were referring to.[120]

Plate 34: Recklinghausen, Ikonen-Museum: Woman with palm branch, Schêch Abâde, Antinopolis.

[118] Photo: Wessel 1963, 89, 91. For the symbolism of the palm branch, see Sill 1975, 127.

[119] See Vendries 2012, 107.

[120] For comments on the term spadix as found in the three authors named, see Vendries 2012, 66-67.

We know, then, that *spadix* was a stringed instrument whose name meant "palm branch," and that it seems to have been used in what is now Jordan and Egypt, for the only writers who mentioned it came from those areas. Quintilian, from Spain and writing c. 100, had never actually seen one himself, but associated it with women. Nicomachus listed it after kithara and lyra, and Pollux mentioned it in a list including those instruments also. The palm branch or frond is represented as a long shaft with small, pointed leaves projecting at an angle inclined toward the branch end. The instrument in **Pl. 29** has small pointed ornaments on the shoulders of the waisted body, and these are connected to the slender neck in an organic style which might allow one to make an association with spadix, although this remains pure speculation.

The ornamental "leaves" on the shoulders of the chordophone are also found elsewhere than on musical instruments; they are a common motif in eastern Christian art forming ornamental borders and bands, as in the garland worn by the woman in **Pl. 34**, or the borders shown in **Pl. 27**. The figure in **Pl. 34** also offers a prominent three-leaf cluster at the end of the branch just above her hand, which seems to foreshadow the trefoil or lily so ubiquitous in later Christian art. Three-pronged leaves also figure in border patterns, as in **Pl. 30**, and the motif is sometimes carried over to turn up on the end of a pandura neck, where it can also give the impression of a later variation of the sickle ornament mentioned earlier (**Pl. 25, 31**). By c. 1100 it will have become a standard peg-head ornament on the cetra.

Spadix: the word sounds like "spade", meaning shovel, perhaps just a coincidence? Whichever words we use to describe the image of the resonator, this becomes the dominant body shape of the pandura during the 5th - 8th centuries, as confirmed by the next series of examples, which are actual surviving specimens. A total of seven instruments have been found that can be identified with a Christian Egyptian provenance from the 5th - 7th centuries. Among these, excavated from a grave site at Antinopolis like the small figure of the woman with the palm branch, is the lute shown in **Pl. 35:**

Plate 35: Grenoble, Museum: Body of lute (Byzantine pandura) found in a grave excavation in 1907 by Albert Gayet at Antinopolis, Egypt (5th - 6th c.).

All of the surviving *pandurae* are long-necked, including the Grenoble example above and the following selection of other specimens (**Pl. 36-40**). Three of the seven total have a known context; of the ones shown here, **Pl. 35** comes from Antinopolis and **Pl. 39** from Saqqara.[121] All are supposed to date within the 5th to 9th centuries, although the most secure dating is that of the Antinopolis lute (**Pl. 35**).[122]

[121] More details for all of the surviving instruments are found in Eichmann 1994 and Vendries 2012.

[122] Photos: Vendries 2012, 101.

Plate 36: New York, Metropolitan Museum of Art: lute (Byzantine pandura).[123]

Closer examination of these instruments reveals that the fingerboard section of the "long neck" is typically about half of the neck itself: were we to substitute the area above the nut with a compact peg-head, the neck would appear substantially shorter.

[123] Photo: https://metmuseum.org/art/collection/search/473395 (accessed 12.12.2017).

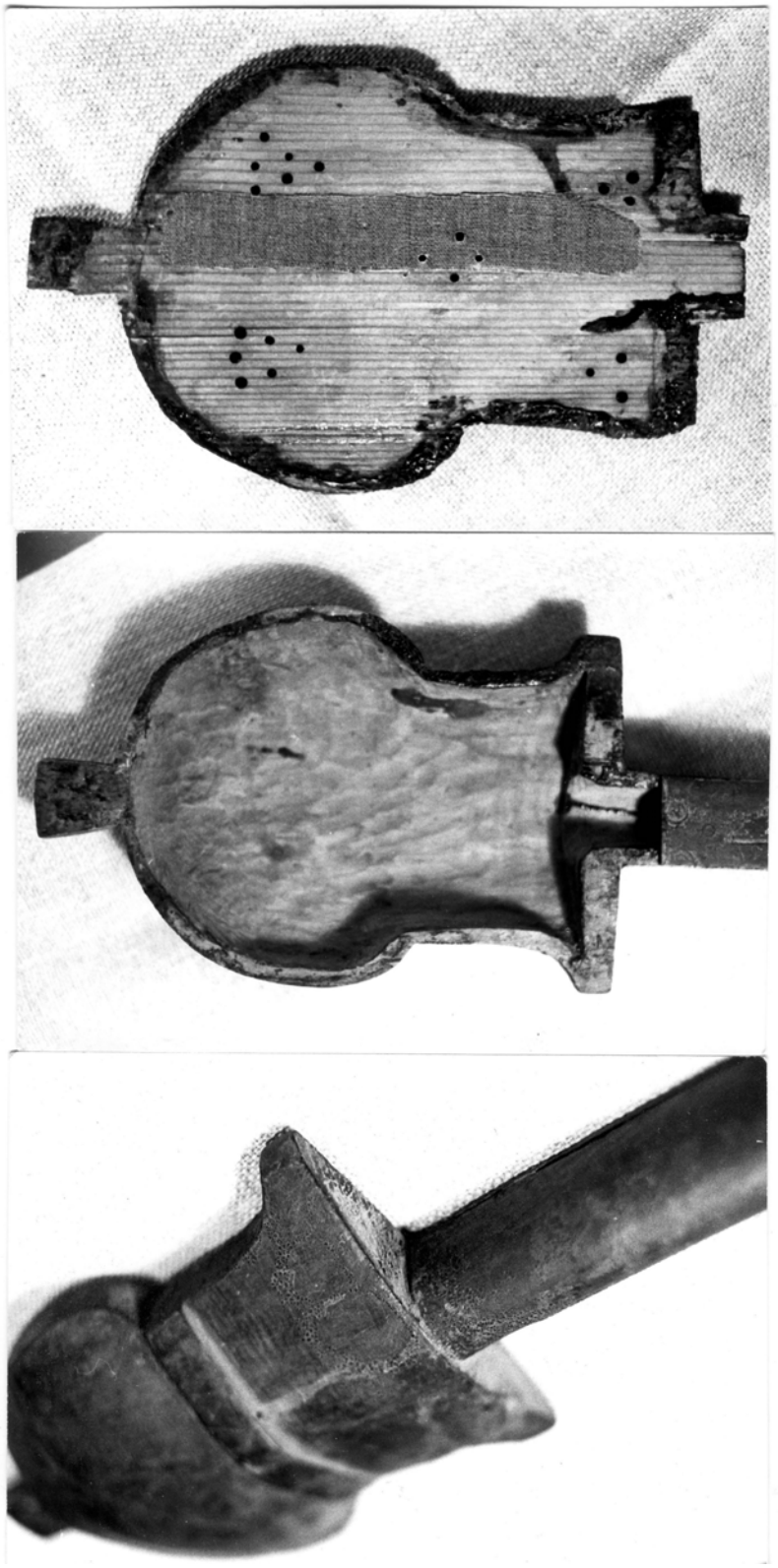


Plate 37: New York, Metropolitan Museum of Art: lute (Byzantine pandura).

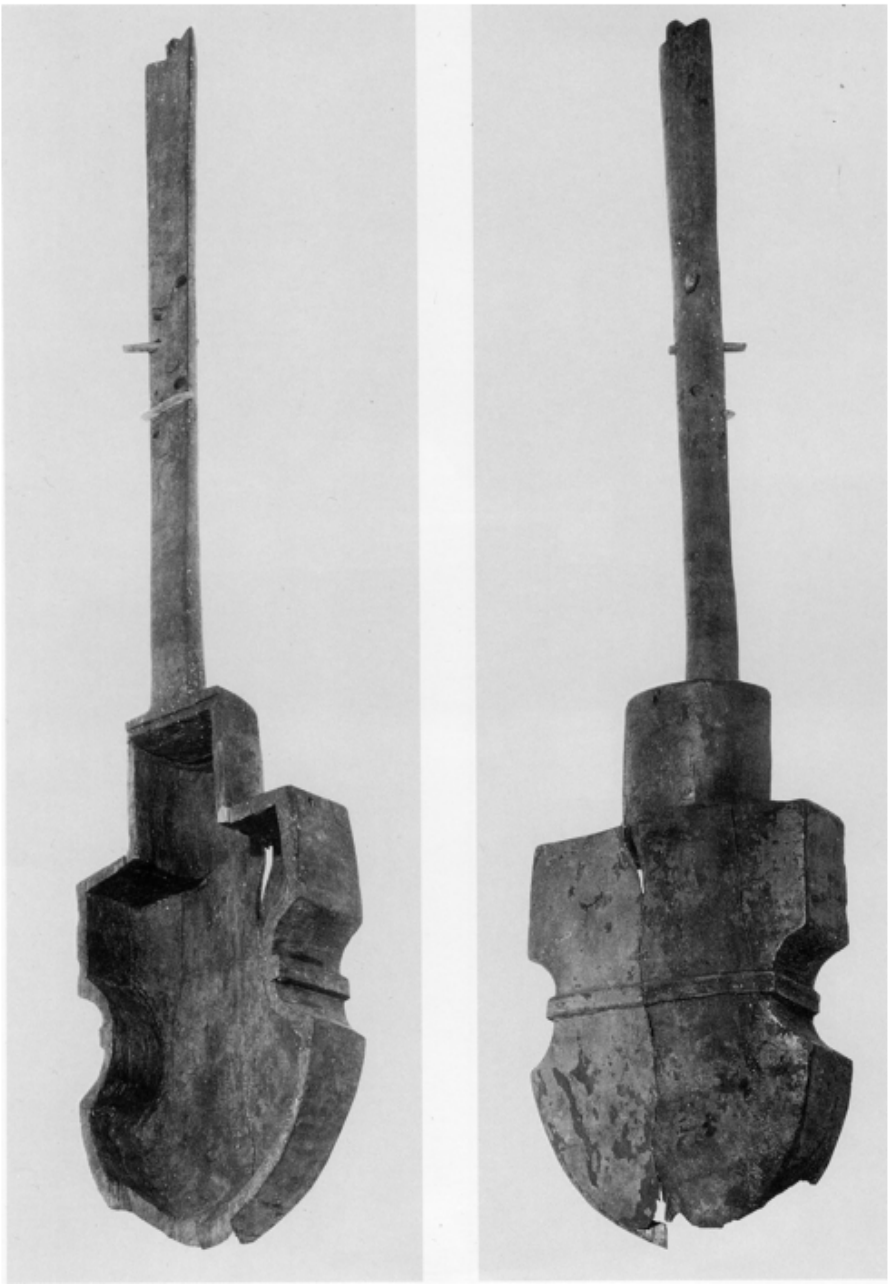
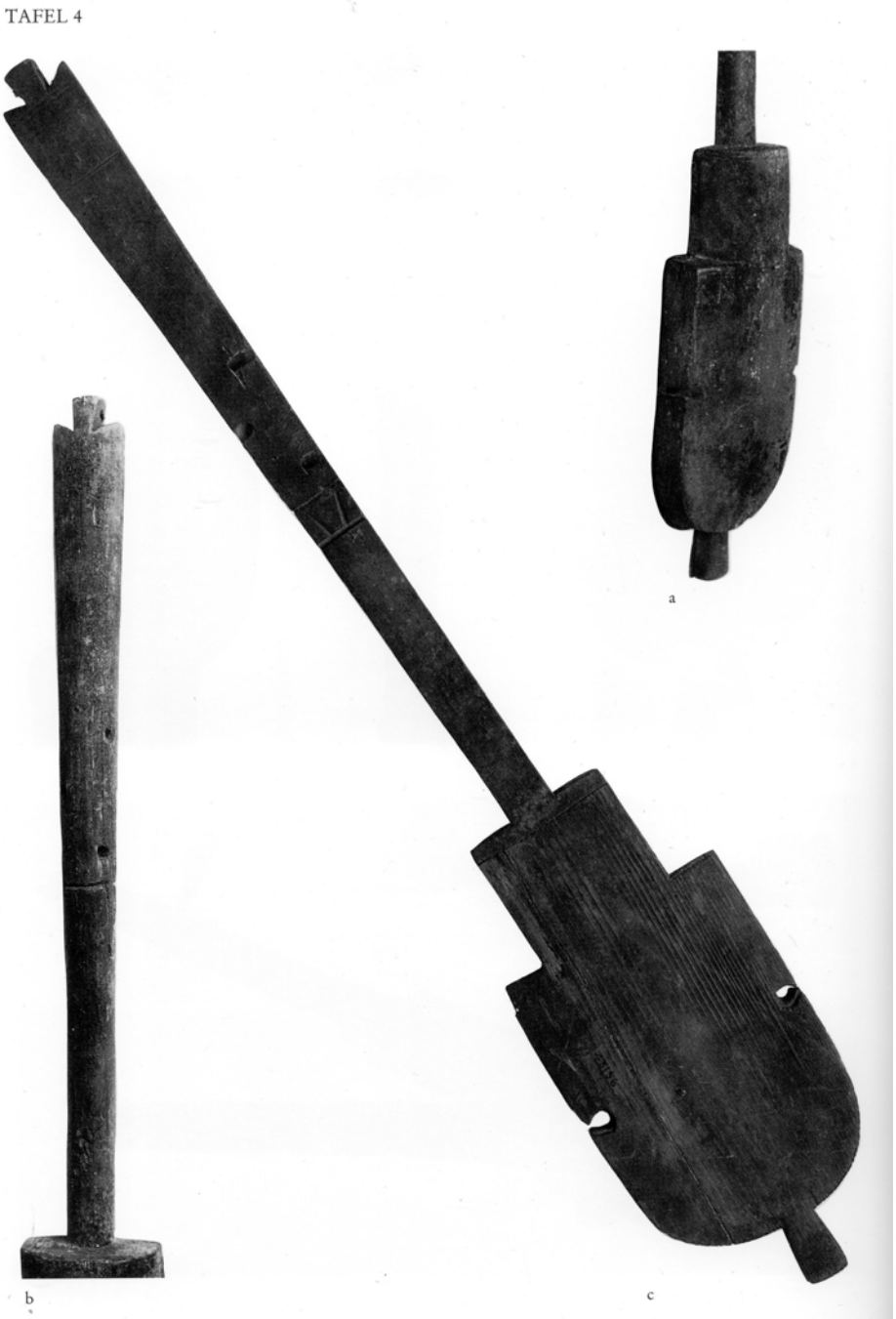


Plate 38: Heidelberg: lute (Byzantine pandura).[124]

[124] Photo: Eichmann 1994, Tf. 7.

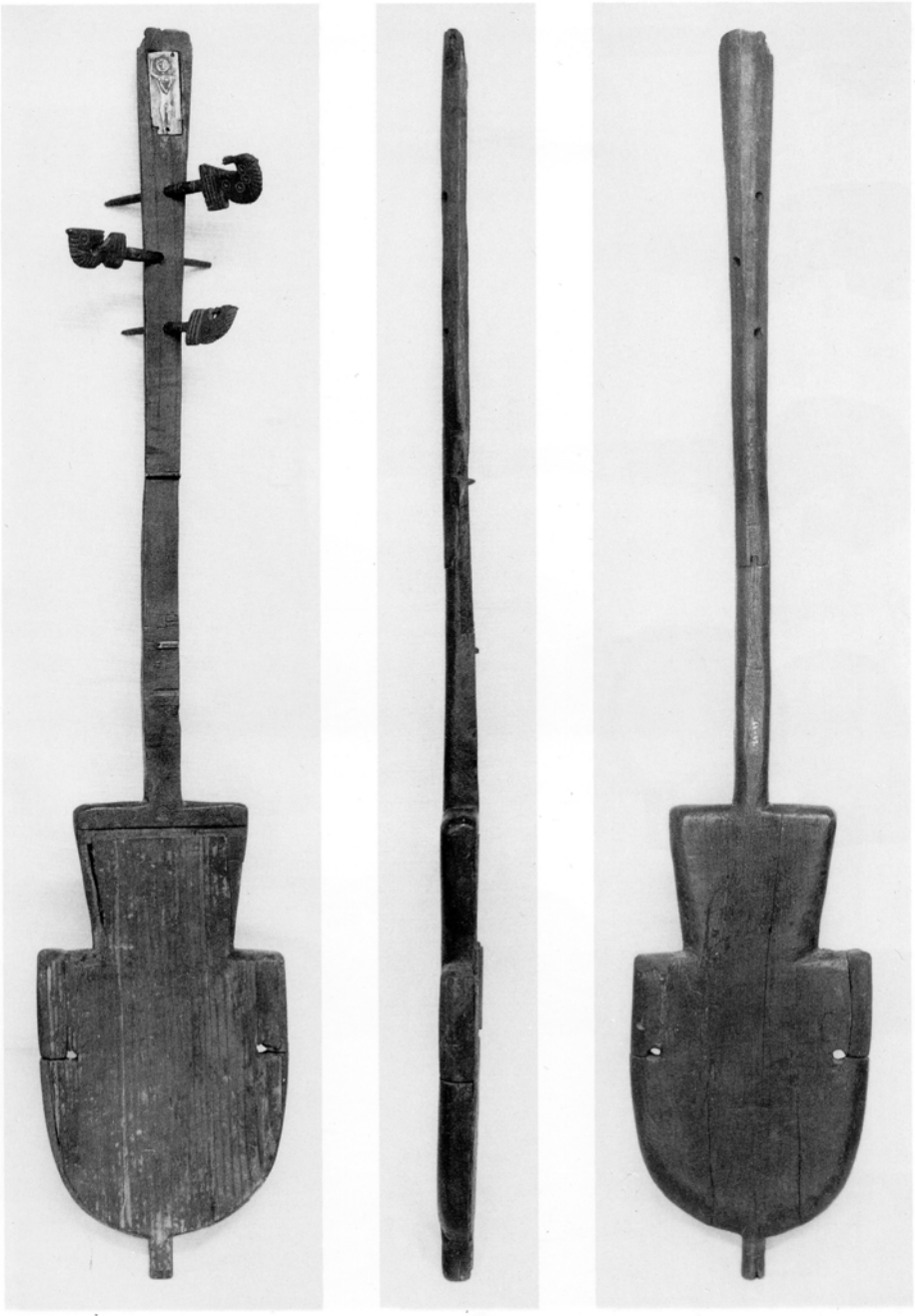


Laute Nr. 2 (Saqqāra/Koptisches Museum, Kairo): a. Rückansicht des Corpus von links; b. Rückansicht des Halses; c. Gesamtansicht von vorne. – Gesamtlänge 85,8 cm. – Photos: a.b. B. Hackländer-von der Way; c. Deutsches Archäologisches Institut, Kairo.

Plate 39: Cairo: lute (Byzantine pandura).[125]

[125] Photo: Eichmann 1994, Tf. 16.

TAFEL 16



a b c

Laute Nr. 6 (Fundort unbekannt/Musikinstrumentenmuseum des Münchner Stadtmuseums): a. – c. Vorder-, Seiten- und Rückansicht. – Gesamtlänge 96,2 cm. – Photos: Verf.

Plate 40: Munich: lute (Byzantine pandura).[126]

[126] Photo: Eichmann 1994, Tf. 4.

Earlier in this chapter we saw evidence of the process of the Christianization of the Roman lyre-cithara via Byzantine culture, with two 6th-c. examples which turn up in 9th-c. Carolingian manuscript illumination (**Pl. 10, 11, 12, 13**). With the surviving instrument specimens from the 5th c. and later, we see the same process occurring
with the Roman pandura in what had always been one of the most receptive areas of its practice, the southeastern part of the Mediterranean. The body profile of **Pl. 36** and **37** is recognizable on the 6th-c. lyres in **Pl. 12** and **13**. The proliferation of the spade-shaped body is consistent with the proliferation of the most potent Christian symbol of all, the cross; compare **Pl. 40** with this cross from a 9th-c. Psalter (**Pl. 41**):

Plate 41: Stuttgart, Württembergische Landesbiliothek, Cod. bibl. fol. 23, fol. 1v, frontispiece with cross framing text of Isidore of Seville's prologue.[127]

[127] This and all of the photos below from this manuscript come from http://digital.wlb-stuttgart.de/sammlungen/sammlungsliste/werksansicht/?no_cache=1&tx_dlf%5Bid%5D=1343&tx_dlf%5Bpage%5D=1 (accessed 15.10.2017).

Some examples of otherwise unbroken spade profile incise the sides with two small incuts - possibly to allow the body to be stabilized with pegs or dowels when it was being carved.[128] The allegorical graphic does not finish with the cross, however, for those who have read the Church Fathers' remarks on stringed instruments - albeit a different type of cithara, the *psalterium* - will know that the letter D forms the shape of the instrument; that is, it has now become part of the design of a necked chordophone.[129]

In summary, the seven existing lutes are *pandurae* from Christian Egypt (Coptic) culture during the Early Byzantine period which ends in the 7th century. They should not be associated exclusively with use in Egypt, for they are found in other eastern Mediterranean iconographical sources of the period. Because the pandura is seen on sculpture from Rome and other areas of Roman influence in the 3rd and 4th centuries, reciprocal influences between (Christian) Rome and the eastern Empire must be assumed. Regarding which adjective best suits the surviving examples, Vendries' proposal of Byzantine is better than Coptic, which could imply an exclusion of the larger Christian-Roman context within which they thrived.[130]

The 6th c. seems to be the last one providing a handful of written records using either the Latin or Greek terms for the pandura.[131] It is also the time when Cassiodorus famously mentions *pandurius* as a wind instrument, ostensibly a case of confusion stemming from the syllable "Pan" (god of woodlands, shepherds, associated with the *syrinx* or panpipe) contained within the term. His mistake was repeated by Isidore and Rabanus in the 7th and 9th centuries respectively.[132] Is it in fact a "mistake," and why did later authors repeat or condone it? It is difficult not to entertain at least the possibility that it was a conscious rejection (Christian-fueled) of the pagan type of cithara, in an age where cithara is such a

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[128] My thanks goes to Jacob Mariani and Peter Forrester for pointing this out from the standpoint of a luthier/ woodcarver; see further discussion on construction techniques in Chapter 4.

[129] See pp. 24 - 26 above for comments about this from Cassiodorus and later writers.

[130] Vendries 2012, 102. The author pointed out that D. Friedrich had used the term "romano-Coptic" to describe the Antinopolis instrument in 1984, whereas the term "Coptic lute" was, and continues to be, the commonly used one.

[131] See Vendries 2012, 111-112, for a useful list.

[132] For a discussion of Pietro Aaron's early 16th-c. commentary concerning Isidore's *pandorius* / *pandorium*, see Ceulemans 2002, 16.

charged icon. The 'misplacement' of it, etymologically speaking, was Freudian. But there is also an interesting corresponding phenomenon at this moment in iconography: as Cassiodorus was writing his statement on the pandura, the mosaic in **Pl. 29** was constructed, showing a shepherd playing, instead of the usual shepherd's instrument the *syrinx*, a pandura. A second example of the same "mix-up" is found in **Pl. 28**, more elusive to date precisely but roughly contemporary with the previous source. The shepherd, by having a type of cithara as his attribute rather than his usual *syrinx*, might suggest Orpheus, or he would - more convincingly, given the contexts of these monuments - suggest Christ.[133]

1.10 Morphology of the Cithara : Etrurian Forms

The Byzantine lutes and their related iconography reproduced above of the same period, 5th-8th c., represent the first observable step in the Christianizing of the pandura. They influenced lutes on the Italian peninsula; more precisely, they were an important part of the manifestation of the fashion of Byzantine culture in Italy during those centuries and beyond. The next group of monuments, those from the Carolingian era, will make this plain. Before we return to the glories of Carolingian book painting and ivory carving, a question may be interjected: was the pandura (or any other kind of lute with a shorter neck), which passed to Roman civilization from the Greeks, cultivated on the Italian peninsula before the Roman Empire?

The answer: not according to any evidence known. Parallel to Greek culture was that of the Etrurians in modern Tuscany, western Umbria and northern Lazio. While lutes - the only known contemporary type would have been the Greek *pandoura* - effectively had no presence in Etrurian culture, "in Greece the lyra (chelys-lyra) peaked during the Classical period, *but it was never as popular there as in Etruria and Lucania....the most surprising instrument is the cylinder-kithara which was often shown in Etruria but rarely in Athens....it can be called the*

[133] For a discussion of possible iconographic interpretations of these shepherd-with-pandura sources, see Vendries 2012, 107-109.

'national instrument' of Etruria" (italics mine).[134] Lawergren's term cylinder kithara refers to a round-bodied lyre with rather broad arms attached to the 'shoulders' of the resonator, with a cross-bar at the top of the arms (**Pl. 42**):[135]

Plate 42: Schwerin, Staatliches Museum, KG 708: Cylinder kithara depicted on Attic pottery, painted by Pistoxenos; Iphikles learns to play the lyre (Skyphos, c. 480 BC).

The word "cylinder" refers to the round shapes at the base of each arm where the arm meets the resonator. These are a salient feature of this interesting type of lyre, and they are always described in modern literature as being non-functional, although there is a case to be made for them as buzzing devices similar to medieval bray pins on a harp, or to Coke bottle tops attached to modern African finger pianos. Made of thinly hammered metal, thin pieces of horn or other natural material (seashells?), their buzzing or rattling would have enhanced the sound presence of the instrument; the wide arms may have been hollow as well for further volume. Similar "miniature cymbals" might be the circular ornaments seen on the ends of the

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[134] Lawergren 2007, 122. The author described the presence of the lute in Etrurian iconography as "rare"; no images have, to my knowledge, been named or published.

[135] Mathiesen 1999, 256, fig. 42.

cross-bar of the Classical Greek concert kithara which are likewise claimed to be non-functional parts.[136]

Whatever its actual sound possibilities, the cylinder-kithara should perhaps not be too quickly dismissed as a presence, however dim, in the collective unconscious of the peninsula in terms of Byzantine-Carolingian and Byzantine-Ottonian precursors of the cetra, for many depictions of this common instrument in Etruria show a spade-shaped profile of the resonator. As Lawergren pointed out, "the body of the instrument is shaped like the letter D turned ninety degrees clockwise."[137] The Etruscan iconographical sources for this instrument fade out during the 3rd c. BC; whether its actual usage continued on locally, perhaps during the Imperial centuries, is not attested by any monuments.

There was another "buzzing" instrument with an elongated spatulate profile which further complicates the history of the lute in the Latin world of the Middle Ages and beyond. Isidore of Seville wrote about it as a kind of percussion instrument in the early 7th c., with Rabanus repeating Isidore in the 9th c.: "The *sistrum* is named from its inventress, for Isis, a queen of the Egyptians, is considered to have invented this species of instrument. Juvenal has: Let Isis with angry *sistrum* blind my eyes. Women use this instrument because a woman invented it.

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[136] The topics of *overtone manipulation* and *tone color* on Western European musical instruments before the 16th century is a sadly neglected one in modern music history, with virtually no dedicated research publication appearing as yet. There was a wide range of devices for altering what we would call the tone color of an instrument: bray pins on a harp, a snare on a drum, rings on a triangle, a vibrating bridge on the tromba marina, a crenellated bridge on a vielle, a vibrating bridge or vibrating soundboard on a symphonia or hurdy gurdy, bray pins on a virginal....these are all examples of tone manipulators, used to enhance an intended musical function within a specific context. The presence and projection of soft string instruments, in particular, could thus be magnified. How else, without the application of such devices, could Paulus Paulirinus writing c. 1460 have declared that the harp "projects sounds to a great distance, indeed farther than any other instrument aside from the trumpet, organ and portative"? See Howell, Standley, "Paulus Paulirinus of Prague on Musical Instruments", *Journal of the American Musical Instrument Society*, Vol. IV - VI (1979-80), 9 - 36.

The Classical Greek concert kithara and cylinder kithara would thus seem to provide early iconographical evidence for such enhancement of stringed instrument sound. The percussive boost thereby gained would serve to accentuate the rhythm of a melody, an aspect vital for accompanying dance. For a discussion on the dance-music function of the cylinder kithara, see Fleischhauer 1964, 24 -25. This will be a common point with the musical function of the cetra to be described later in this essay.

[137] Lawergren 1985, 27.

So among the Amazons the army of women was summoned by the *sistrum*."[138] Yet an illustrated manuscript of Prudentius' *Psychomachia* contemporary with Rabanus represents it as a stringed instrument (**Pl. 43a/b**):

[138] McKinnon 1998, 44. For an english translation of the passage in Rabanus, see Throop 2009, Vol II, 208.

Plate 43a: Valenciennes, Bibliothèque municipale, Ms. 412 (393 bis), fol. 22: scene from Psychomachia (Prudentius).[139]

[139] Photo: http://beta.biblissima.fr/fr/ark:/43093/mdatabe26bf9b81c8fef58f66ac64d01a2069c04141c8 (accessed 12.04.2017).

In the scene illustrated above, Sobriety (*Sobrietas*) wages battle against Sensuality (*Luxuria*) and overturns Sensuality's chariot by thrusting the Cross in front of the rushing horses; Sensuality is thrown out and crushed under the wheels, upon which her minstrels Jest (*Iocus*) and Wantonness (*Petulantia*) "are the first to throw away their cymbals (*cymbala*), for they play war with such arms, trying to wound by strumming their *sistra* (*sistro*)."[140] Examples of these instruments have been drawn as below (**Pl. 43b**), the *sistrum* here showing a form like a Byzantine pandura:

Plate 43b: Valenciennes, Bibliothèque municipale, Ms. 412 (393 bis), fol. 22: detail of *sistrum* (l.) and *cymbala* (r.).

Why did the artist represent the *sistrum* in this way? The shape of the Byzantine pandura may have been inspired by, or consciously connect to, the shape of the *sistrum*:

[140] Psychomachia, lines 433-435: *nugatrix acies: Iocus et Petulantia primi / cymbala proiciunt; bellum nam talibus armis / ludebant resono meditantes vulnera sistro.* Original text and translation are taken from Snider 1938, 72-73.

Plate 44:, Naples, National Archeological Museum, two *sistra* from Pompeii (1st. c.).[141]

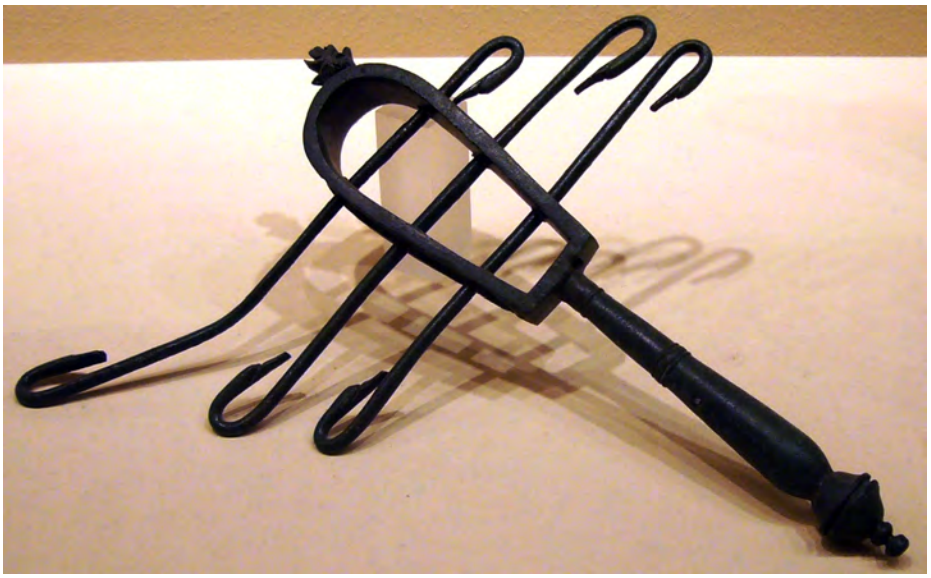

Plate 45a:, Rome, Exhibition 2007 "Memorie dal sottosuolo. 25 anni di scavi a Roma," *Sistro romano*.[142]

[141] Photo: https://vico.wikispaces.com/Leisure+Activities (accessed 17.08.2017).

[142] Photo: https://en.wikipedia.org/wiki/Sistrum#/media/File:Mostra_Olearie_-_sistro_1010384.JPG) (accessed 17.08.2017).

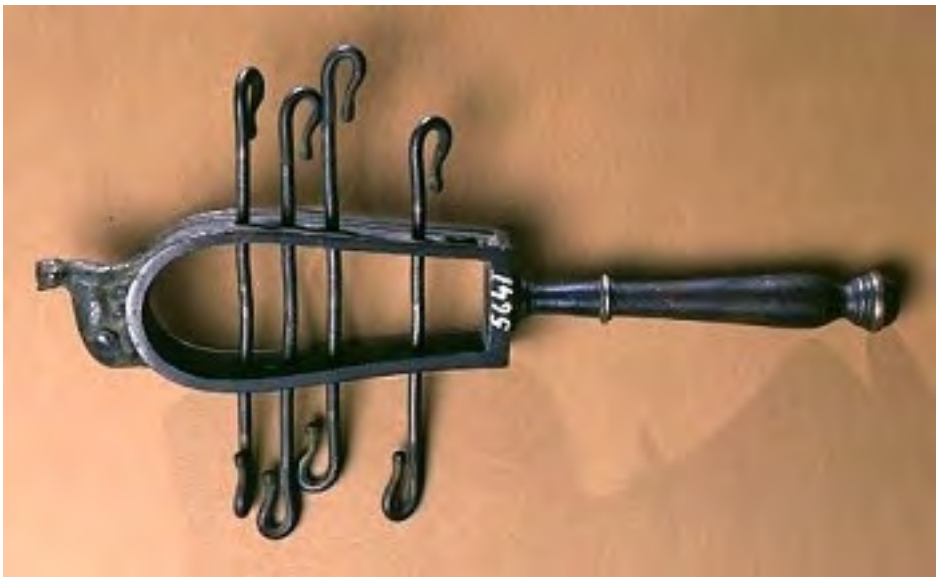

Plate 45b: Roman *sistrum*.[143]

The association between the *sistrum* and war noise was touched upon in the text of Isidore, and we can assume that the ancient Egyptian instrument had a similar function. It also had a funerary function, which it shared with the pandura, and like that instrument, it was exclusively played by women.[144] The common morphology of the two instruments is surely not coincidental, and the appearance of the Byzantine body shapes of the pandura seen on the surviving examples and in the iconographical monuments of their period - shapes which are all varieties of the spatulate form - points to a shared *inventio et usus* of both instruments.[145] Antelami's cetra uses the shape and thereby shares in a Mediterranean chordophone heritage that encompasses a time span and geographical range as expansive as the Roman and Byzantine Empires.

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143 Photo: www.globalegyptianmuseum.org/glossary.aspx?id=354 (accessed 17.08.2017).

144 See Marcuse 1975, 87-90.

145 It is also surely not coincidental that some common names for the cittern since the Renaissance are etymologically derived from Latin *sistrum*, i.e., cistre, sistre (French), Cister, Sister, Zister (German), cister (Danish). See Ivanoff 1995, 886.

1.11 Morphology of the Cithara : Italo-Byzantine Forms

We shall now return to the Carolingian period to continue the narrative of the developments leading up to the establishment of the cetra by c. 1100 in Italy. The usual modern history-book formulation of the "Carolingian Renaissance" as a conscious revival of Classical Greco-Roman learning is a somewhat sleepy way to describe the explosion of the Christianizing of Western Europe in a new wave of creatively-charged energy as a direct correlation to the power ambitions of the New Holy Roman Emperor. Manuscript illumination literally instills light and color into books as a new graphic medium is cultivated with an effect a bit like the birth of the cinema or the rise of computer graphics in the 20th century. Weaving a tapestry of geometric form and color primarily around letters, insular illumination of the 6th to 9th c. was the first wave of a new visual book culture in Western Europe. The Carolingian school of book painting brought a new level of naturalism - of people, figures, faces, objects and movement - to celebrate the wonders of the heroic deeds of the Bible and Classical stories. Among the depicted objects were musical instruments, mainly related to King David. But music as a science also came into increased focus during the 9th c., as a growing need for a theory of what was being sung in Church arose, and the study of music theory became a legitimate and necessary complement to actual singing. The 9th c. in this sense saw the birth of the medieval *musicus-cantor* pairing which became the fundamental "complete musician" right through the centuries to our own day. And, as will be argued in the next chapter, no instrument was more central to this science than the *cithara*.

Instrument depictions in Carolingian works will be found primarily in illustrated Bibles or in illustrated sections of the Bible, most typically, the Psalter. Among the novelties in 9th-c. art are elaborately illustrated Psalters using a complete program of visual images, it is thought, for the purpose of education; one of the first enterprises for the schoolboys in monastic education was to memorize the 150 Latin Psalms, and seeing pictures that illustrated them was a simple mnemonic strategy. Book covers made for the so-called Psalter of Dagulf, commissioned by Pope Adrian were carved of ivory in the palace workshops of Charlemagne, showing King David and musicians, one of whom is playing a type of lute that we have not seen before (**Pl.46**):

Plate 46: Paris, Louvre: Ivory cover of Dagulf Psalter, 783 - 795.[146]

The Dagulf Psalter ivory cover gives us the important information that the short-necked, oval-bodied lute with a clearly articulated neck joint - otherwise undocumented in the Mediterranean cultures, and a fundamental piece of the puzzle to prepare for the cetra - was cultivated in Byzantine Greece by the mid 8th c., perhaps before, and that the Carolingians in northern Europe chose to be identified with it (among other Byzantine instruments, starting

[146] Photo: https://commons.wikimedia.org/wiki/Category:Dagulf_Psalter#/media/File:Plaques_reliure_psautier_Dagulf_Louvre_MR_370-371.jpg (accessed 12.12.2017).

with the hydraulis or water organ) later in that century.[147] It is no surprise, then, that we meet forms of this ovoid lute in 9th-c. Carolingian miniatures of King David, as in **Pl. 47** and **48**.[148] This instrument had surely been seen in Lombardic culture in Italy by the 8th c. at the latest, and had manifested itself in north Italian illumination - hardly without Byzantine influence - by then also; Lombardic miniatures, in turn, were used by Carolingian illuminators as models.[149] Note, too, the clustered sound-hole groups which were seen on the Metropolitan Museum lute in **Pl. 36-37**, as a subtle yet clear marker of heritage:

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[147] For references citing the account of Notker Balbulus describing musical instruments brought to Aachen by Byzantine ambassadors in 812, see Van der Horst 1996, 6.

[148] Among many reproductions, see Steger 1961, 162 - 163, and Tafel 2.

[149] No surviving examples of early Lombardic art specifically with musical instruments are known to me. The theme of Lombardic models influencing Carolingian art has received considerable commentary in art history research; a good starting point for discussion is the work of Meyer Schapiro (see items in Bibliography).

Plate 47: London, British Library, MS Add 37768 (Lothar Psalter): f. 5, King David (c. 840).[150]

[150] Photo: http://www.bl.uk/manuscripts/FullDisplay.aspx?ref=Add_MS_37768 (accessed 12.12.2017).

Plate 48: London, British Library, MS Add 37768 (Lothar Psalter): f. 5, King David, detail (c. 840)

We note the similarity of Byzantine-influenced garments between this figure and King David in **Pl. 10**, also the softened spade-shaped body with a projecting string holder at the bottom for the three strings. The arrangement of the peg-head is a bit unclear, although it seems to show two frontal pegs (?). Although the side indentations or incurvatures are lacking on this cithara, the general shape and fingerboard-to-body proportion on this instrument reminds one of the Byzantine pandura specimens shown previously. Do any artifacts (later than those) exist that could confirm that **Pl. 48** shows a 'real' instrument of the 9th century? From the 10th c., or perhaps c. 1000, comes the following surviving example (**Pl. 49**):

Plate 49: Corinth, Archeological Museum, Object MF 10169 : chordophone found 1961 in excavated well in Corinth (late 10th c.). Top: drawing (Crane 1972, 79); middle: side view of restored lute; bottom: lute back before restoration.[151]

[151] Photos and description on museum website:
http://ascsa.net/id/corinth/image/bw%208599&q=references%3A%22Corinth%3AObject%3AMF%2010169%22&t=&v=icons&p=1&s=4&sort=rating%20desc%2C%20sort%20asc&size=full
accessed 11.08.17

The instrument in **Pl. 49** is an historically significant artifact, an ovoid Byzantine lute from c. 150 years after the miniature shown in **Pl. 48**.[152] Its soundboard and peg-head have not survived, and the neck of the one-piece instrument had already been repaired in antiquity; found separated, it was rejoined to the body in 1961. From the same era comes an illustrated manuscript of Rabanus Maurus copied at Montecassino (**Pl. 50**):

Plate 50: Montecassino, Codex, Rabanus Maurus De encyclopedia (1023).[153]

[152] This monument remains hardly known in organological literature; see Anoyanakis 1965, Crane 1972, 15, and Vendries 2012.

[153] Photo: Cavallo 1994.

Regarding Montecassino, art historian Meyer Schapiro has pointed out that in the mid-late 11th c., the monastery at Montecassino held "works ordered from Constantinople by the abbott Desiderius," as well as "products of immigrant Greeks who had helped to form a native group of monk-artists at the urging of the same Desiderius."[154] Schapiro described a second manuscript of the period containing a short-necked lute as done by "artists painting in the Italo-Byzantine manner, whether Italians or taught by Italians."[155] This image of David's musician Asaph (**Pl. 51**), shows an instrument held in a vertical position, of similar form to the Montecassino chordophone in **Pl. 50**. The context of the two illustrations is entirely different, with the first being a visual gloss on the section of Rabanus' treatise concerned with stringed instruments, and the second being a David portrait from an 11th-c. Psalter produced at Amiens. Of interest is also the rectangular instrument in **Pl. 50**, presumably an Antiquity-inspired cithara with two circles (see pp. 75-76 above for comments on the cylinder kithara, which according to Lawergren, was known in Lucania, a region not so far from Montecassino), with the word *musica* inscribed between the strings. To the right, a triangular / delta-shaped harp (?) with the label *cithara*, and further to the right, the lute with an illegible label (also *cithara*?).

Like the Montecassino lute, an 11th-c. miniature from a Psalter in Amiens, **Pl. 51,** shows three pegs. The upright playing position on the knee, together with the length of the plectrum, might suggest that this is a representation of a bowed instrument, as in **Pl. 74**, although the object in the player's hand in the Amiens Psalter is not a bow. For the moment, we should simply take note of the similarity of plucked and bowed forms of this oval short necked Byzantine chordophone:

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154 Schapiro 1964, 49.

155 Schapiro 1964, 49.

Plate 51: Amiens, Bibl. municipale fonds escalopier 2. (11th c., Amiens)[156]

[156] Photo: http://www.enluminures.culture.fr/Wave/savimage/enlumine/irht3/IRHT_063762-p.jpg (accessed 22.07.2016).

Plate 52: Detail of Plate 51

Iconographical sources, in sum, support the proposal that there was a short-necked lute in Greece by the 8th c., which was known in Italy, at the latest, by the 11th century. The form we encounter in **Pl. 46-52** is *not* a literal continuation of the much earlier B-type lute described by Higgins / Winnington-Ingram from the Classical Greece of the 4th c. BC (see p. 41-49 above, including **Pl. 20**).[157] The Byzantine instrument imported into Italy during the Carolingian / Ottonian periods had a wider body, with an articulated neck joint, a broad three-pointed peg-head and (following **Pl. 46-49**) an end projection to fasten the strings to.

In describing the Lothar Psalter lute shown in **Pl. 48**, the surviving Byzantine-Roman lutes were mentioned above by way of comparing body length to fingerboard. Lothar's body shape hints at a slightly more spatulate profile than the other oval instruments. In fact, an elongated spade shape with clearly cornered shoulders has been mentioned above in connection with the *sistrum*, turning up in 9th-c. manuscript illumination. These monuments were created in Carolingian workshops of northern France, and while it has long been accepted that the illustrations were copied from Lombardic or Roman models showing Byzantine influence, the implications for the instruments represented therein have not been clearly recognized in the general organological community.

[157] Higgins 1965, 64.

Plate 53: Stuttgart, Württembergische Landesbiliothek, Cod. bibl. fol. 23: Psalter, c. 820 - 830, Abbey of Saint-Germain-des-Pres.[158]

The surviving Byzantine *pandurae* (the Roman name is long gone by the 9th c.) are strongly evoked by the cithara held by David in this miniature from the Stuttgart Psalter (**Pl. 53**). According to Meyer Schapiro, "the model of the miniatures of the Stuttgart Psalter was a work of the seventh or eighth century from the Milanese region. The initials contain traces of Byzantine art which may be paralleled in Italian manuscripts of the eighth century."[159]

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[158] Photo credit: see footnote 121.

[159] Schapiro 1980, 111.

Plate 54: Stuttgart Psalter, f. 55 (left); f. 69 (right)

Plate 55: Stuttgart Psalter, f. 83 (left); f. 97v (right)

Plate 56: Stuttgart Psalter, f. 108 (left); f. 112 (right)

Plate 57: Stuttgart Psalter, f. 125 (left); f. 163v (right)

Plate 58: Stuttgart Psalter, f. 161

Plate 59: Stuttgart Psalter, f. 155v

The trefoil ornament sometimes found at the end of the neck of the pandura now has appeared as a string-holder on the bottom end. The artists have been lazy in terms of consistency of number of strings, often showing an inaccurate number of pegs (from four to seven), or vice versa. The number of strings depicted varies between three and six, but the in total ten images present a strong graphic concept of a cithara. The body has consistently clearly articulated, cornered shoulders; the upper edge of the soundbox is not at a

perpendicular angle to the neck as was the case on the Byzantine *pandurae* found in Egypt, but is somewhat slanted.

Psalters are one of the highly cultivated art forms of the Age of Charlemagne. There are different types. Some, like the Lothar Psalter mentioned above, have a prefatory miniature of King David, perhaps reflective of an earlier Byzantine or early Christian tradition of manuscript illustration.[160] Others, like the Stuttgart and Utrecht Psalters, have ongoing scenes throughout the Psalter which illustrate the Psalm texts in their ongoing sequence. This seems to be a tradition of illumination which begins in the 9th c. and continues with later Psalters and historiated Bibles.

The miniatures in the Stuttgart manuscript, then, are not random depictions of King David, but rather scenes which illustrate a specific text. What about those texts with stringed instruments? In the Vulgata version of the (Latin) Psalms, *cithara* occurs 14 times, *psalterio* occurs 8 (when *psalterio* is mentioned, it is always grouped in the same clause as *cithara*, with one exception, Ps. 143).[161] The cithara, for the Stuttgart artists, means a necked chordophone, i.e. a lute, which they will have modelled on 8th c. Italo-Byzantine miniatures, now lost. That this represented a "real" instrument in the music culture of the time is confirmed by a second type of instrument, depicted in one miniature: an organ, with three assistants pumping wind pressure; such an organ existed, in fact, at Charlemagne's court. A total of ten miniatures showing David with his cithara are found in Stuttgart (Ps. 42, 56, 70, 89, 91, 97, 107, 140, 146, 150) including Ps. 140 which has no mention of any instrument in its text.

With **Pl. 60**, we have a detail of one of the many musical instrument images from one of the most famous Carolingian monuments, the Utrecht Psalter.[162] The sources we have been looking at have shown King David and/or his four temple musicians. The Utrecht Psalter does something different: it shows large numbers of unspecific musicians in the act of giving praise, suggestive of perhaps a Byzantine court scene.

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[160] Van der Horst 1996, 87.

[161] The Psalms with stringed instruments are as follows: *cithara* = 32, 42, 48, 56, 70, 80, 91, 97 (twice), 107, 136, 146, 149, 150; *psalterio* = 32, 56, 70, 80, 91, 107, 143, 150.

[162] Utrecht, Universiteitsbibliotheek, MS Bibl. Rhenotraiectinae I Nr 32 ("Utrecht Psalter").

Plate 60: Utrecht Psalter, fol. 18v.[163]

Like many sources mentioned in this chapter, the Utrecht Psalter could easily provide the focus of a separate in-depth study on musical instruments; it is a treasure trove of a variety of forms of stringed instruments in particular. My intention, however, is only to provide an overview of the material - forms, concepts, surviving instruments - which come together as the manifestation of the cetra around 1100. In order to place the miniatures of interest here in a context, a quick look at the provenance of the manuscript will be helpful. The psalter now

[163] This and all other photos of the Utrecht Psalter come from http://www.utrechtpsalter.nl/#about-the-psalter (accessed 10.05.2017).

kept at the university library in Utrecht is thought to have been copied near Reims c. 815-840.[164] Its vellum leaves measure approximately 33 x 25 cm and it has numerous detailed drawings populated with a myriad of figures involved in much activity. There are plentiful instrument depictions but they are physically very small. The images reproduced in the plates here are therefore greatly magnified. A total of twelve Psalm illustrations contain stringed instruments of four types which we could call pandurized lute (1), Roman-Byzantine kithara-lyre (2), triangular harp (3) and Alemannic lyre (4). Whereas the contemporaneous Stuttgart Psalter always uses a lute to represent the cithara of the Psalms, the Utrecht manuscript does not follow the same consistency. All four of these types are possible candidates to illustrate a Psalm text with cithara; of a total of 33 instruments shown, there are 12 kithara-lyres, 11 lutes, 8 harps and 2 Alemannic lyres.

Opinions vary regarding the number of scribes who produced the miniatures, but the number eight seems to have found some scholarly agreement.[165] Meyer Schapiro is among those who have proposed that the Psalter copied illustrations from a Late Antique manuscript; apart from an original perhaps of the 4th or 5th centuries, details of the iconography led him to believe in an intermediary "Latin model" of after about 700.[166] That the miniatures are in large part based on an earlier manuscript, seems to have gained general acceptance, though the precise nature and dates of earlier postulated versions vary.[167]

The 11 lute depictions in the Utrecht Psalter break down into five types, A - E. **Pl. 60** above is an A type as are the following **Pl. 61 a,b,c**:

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[164] Van der Horst 1996, 24.

[165] Van der Horst, 1996, 47 - 54.

[166] Schapiro 1980, 77, 110.

[167] Mütherich and Gaehde 1976, 20, mentions that “one hypothesis holds that the drawings are more or less faithful copies from an 8th-c. Greco-Italian Psalter which transmitted a late-4th- or early-5th-c. archetype”.

Plate 61: Utrecht Psalter, fol. 24v (above left 61a); fol. 27 (above middle 61b); fol. 40 (above right 61c), illustrating Utrecht Psalter lute Type A.

Pl. 60 and **61a - b** are long-necked lutes with spatulate bodies with markedly pointed shoulders and apparently no end projection at their base. **Pl. 61c** is the same but with a rounded rather than a three-pointed peg-head. **Pl. 62** exemplifies Type B, with rounded, out-curved shoulders, end projection similar to a kithara, and trefoil peg-head with three pegs.

Plate 62: Utrecht Psalter, fol. 25, illustrating Utrecht Psalter lute Type B.

Type C (**Pl. 63**) presents a spatulate body form with a perpendicular-to-the-neck upper body edge, plus a widish fingerboard, seem to foreshadow the Antelami cetra shown at the beginning of this chapter; here we have a similar body form to the Byzantine-Roman lute pictured in **Pl. 36** on p. 70, somewhat widened, with a neck about twice as broad, in other words, a general resemblance to the *sistrum* shape previously discussed[168]:

Plate 63: Utrecht Psalter, fol. 48, illustrating Utrecht Psalter lute Type C.

[168] For an instrument of similar shape, with a thinner neck, see the image from the Cappella Palatina in Palermo, now believed to have been painted by Coptic artists in the 12th. c., see Appendix I, Ex. 5.

Like Type C, Type D is shown in only one miniature in the Utrecht Psalter (**Pl. 64**), yet it seems distinct enough from other types to warrant its own category. An elongated spade shape ends in a projection at the bottom of the instrument, and the neck is somewhat shorter than on the closest other instrument Type A. The indistinct peg-head seems roundish (?). This particular miniature generated discussion in the early 20th c. around the object which the musician holds in his right hand, which was thought to have been a kind of bow or a sword, until Emanuel Winternitz confirmed in 1961 that it represents a measuring stick mentioned in the Psalm text.[169]

Plate 64: Utrecht Psalter, fol. 48, illustrating Utrecht Psalter lute Type D.

[169] Winternitz 1961, 227.

Type E (**Pl. 65-66**) echoes the body shape of what we took the liberty to call *spadix* or palm branch earlier in this chapter (**Pl. 29**). A tulip-shaped body with large, outward-curving shoulder arms, suggestive of a Classical Greek chelys-lyra; no body "base" or end extension; rounded pegbox of three strings. Two of the four Type E instruments show six frets on the neck, also making it clear that the fingerboard occupies most of the neck length, in contrast to what we have seen on the existing Roman-Byzantine lutes of the 5th-7th centuries.

Plate 65: Utrecht Psalter, fol. 76 (left 65a); fol. 81v (right 65b), illustrating Utrecht Psalter lute Type E.

Plate 66: Utrecht Psalter, fol. 81v (left 66a); fol. 83 (right 66b), illustrating Utrecht Psalter lute Type E.

The earliest analysis of the Utrecht Psalter instruments came from Kathleen Schlesinger, who wrote in 1910 that

> "the musical instruments bear distinct traces of Oriental influence such as the Greeks of Asia Minor, Syria and Northern Egypt would be likely to have felt in their intercourse with the Persians, Arabs, etc., who used the instruments of the older Asiatic civilizations, from which the neck finger-board and pegs were borrowed, whilst the sound-chest of the instrument remained essentially Greek in contour, and the instrument itself retained its Greek name of kithara, in Latinised form cithara.... as to the nationality of the handiwork and more especially of the drawings, which are outlined with a pen in bistre, some say they are the work of an Anglo-Saxon artist, some that they are copies from an old classical MS., whereas Sir Thomas Duffus Hardy considers they bear unmistakable signs of Oriental work, and that the scenery, fauna, flora, implements, furniture and costumes are such as would be familiar to an artist living in Alexandria before the burning of the library in 638 A.D., the scattering of the theological schools, and the destruction of the city by the Arabs."[170]

[170] Schlesinger 1910, 344.

Schlesinger's reference was Hardy's 1874 publication, "Further Report on the Utrecht Psalter."[171] His work offered conclusions far away from ideas which were more or less universally agreed upon one hundred years later. Hardy insisted the Psalter was, at the latest, a 6th-c. work, with miniatures copied not "from (manuscripts made in) Rome during the seventh and eighth centuries," but rather they were drawn directly by "a dweller in Alexandria well-acquainted with Syria....with 638 A.D. as the latest date that could be assigned to them," but most probably, "the latter part of the sixth century."[172]

Schlesinger was noncommittal on giving agreement to Hardy's conclusions, stating that the lutes in the Utrecht miniatures "were acknowledged descendants of the cithara at the time when the artist drew these illustrations."[173] She drew attention to the similarity between the round-bottom lyres in the Psalter and the body shape of the lutes, looking like the lyre with "cut off" arms and added long neck. The lutes, in her view, were ancestors of the vielle in the Middle Ages.

Winternitz, writing fifty years after Schlesinger, described the Utrecht lutes as having "the body of a kithara, but with a neck in place of the yoke; in other words, a cittern - that is, if we want to project this term as far back as the ninth century."[174] In a later passage,

> "Modern investigations have shown, with almost general consent, that the drawings of the Utrecht Psalter are based on much earlier models, probably Eastern, and quite possibly Alexandrian, antedating the conquest of Alexandria. These drawings would then reflect, not ninth-century, but sixth-century or even fifth-century musical usage. This interpretation of the Utrecht Psalter, however, is based chiefly on the visual style of the drawings. If we had but one more reliable representation of a fingerboard kithara from the sixth century! It would not only push back the origin of the European cittern to the threshold of the ancient world, when kithara and lyre were still in use, as we know from other sources; it would also support the dating of the origin of the Utrecht Psalter in this earlier period. Recent work by British archeologists has enabled

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[171] Schlesinger 1910, 592.

[172] Hardy 1874, 12-16. Hardy's arguments for the Alexandrian origin of the miniatures rely heavily on a private communication written to him by Howard Payn in 1874.

[173] Schlesinger 1910, 345.

[174] "Cittern" = cetra; see Winternitz 1961, 227.

> me to find this missing link; an unmistakable cittern (sic) with atrophic kithara features…" (see the Qasr al-Lebia instrument, **Pl. 29**).[175]

No source was given for the Alexandrian provenance of the Utrecht miniatures in the 1961 publication of Winternitz; whether he got it from Schlesinger or tracked down her source (Hardy 1874), we do not know. In an article from 1980 on mosaic floor pavements in Cyrenaican churches, the same Qasr al-Lebia instrument was reproduced; a footnote cited a personal communication from Winternitz c. 1961 repeating the possibility of Alexandrian influence on the Utrecht Psalter.[176]

The next miniature (**Pl. 67**), an illustration of the Quadrivium of Boethius, shows Musica on the left holding a cithara of distinct Byzantine influence, close to those in the Stuttgart Psalter (**Pl. 53-59**), yet here with a *sistrum*-style peg-head, as seen on the handle of the *sistrum* in **Pl. 44** on p. 82:

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[175] Winternitz 1961, 228.

[176] Alföldi-Rosenbaum and Ward-Perkins 1980, 43-44, footnote 158.

Plate 67: Bamberg, Msc. Class. 5, fol 9v: Quadrivium illustration from Boethius, *De institutione arithmetica*, *De artes liberales*, c. 845, Tours.[177]

[177] Photo: https://www.staatsbibliothek-bamberg.de/index.php?id=1491 (accessed 10.03.2017).

Plate 68: Boethius, *De institutione arithmetica*, detail of Plate 6.

The Tours Boethius illustration, under a clear Italo-Byzantine influence like its contemporary neighbor the Stuttgart Psalter, has a special significance in that it is perhaps the earliest visual source aligning the pandura-style chordophone with the term *cithara* in a music-theoretical treatise. This is not an insignificant step in establishing a visual association for cithara in the music theory treatises of the Middle Ages and Renaissance. That is not to say that every treatise understood *cithara* as a lute-family instrument; but a substantial proportion did, and this is the earliest example known to me.

The next example from the *Psalterium Caroli Calvi* might present another case of *sistrum-pandura-cithara* confusion discussed in pp. 79 - 83 above: here are four instruments of the Psalms, *psalterio,* played by David, *cymbala* (Eman) *tuba* (Idithun) *cithara* (Ethan), while Asaph dances (**Pl. 69**).

Plate 69: Paris Bibliothèque nationale, Cod. lat 1152, f. 1v.[178]

[178] Photo: http://gallica.bnf.fr/ark:/12148/btv1b550014239 (accessed 26.02.2017).

In this dynamic scene filled with movement and energy, Ethan, dancing, holds a large instrument of sistrum form and in sistrum playing position, with vertical and horizontal lines sketched on the wide upper part (**Pl. 70**):

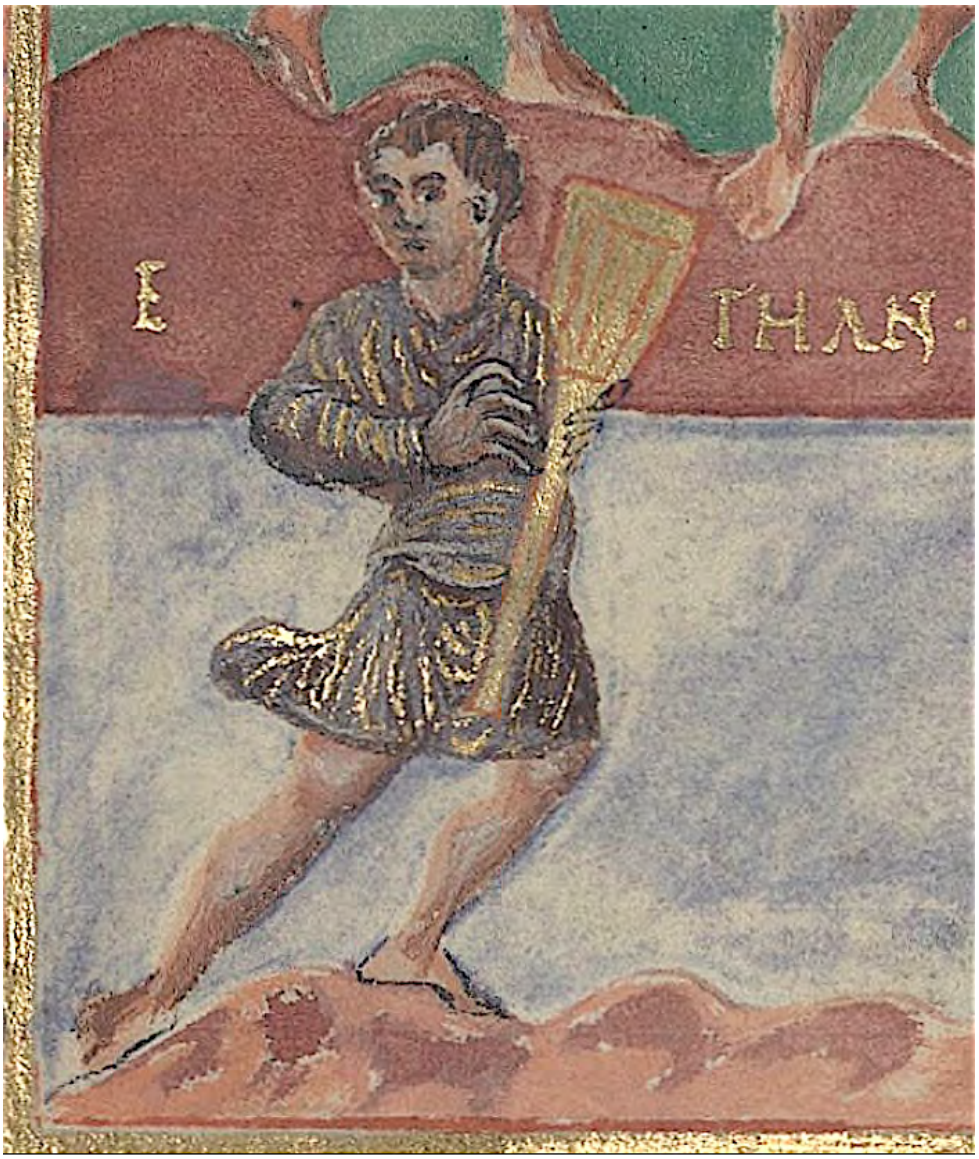

Plate 69: Paris Bibliothèque nationale, Cod. lat 1152, f. 1v, detail.

Hugo Steger saw this instrument in 1961 as "a triangular golden soundbox above a long, thin stem with four strings, in any case a stringed instrument where the left hand clearly plucks the strings; it could be a lute or vielle, but remains unclear...Friedrich Behn considers it to be a harp connected to a long handle."[179]

At the least, it would be highly unusual to find a lute being held and actually played upside down (1), and (2) there are no strings drawn on the "neck".[180] The presence of the *sistrum* in the scene is logical as a rhythm instrument to accompany dance, although the term is not present in the Vulgata text. Thus, despite a vague similarity in shape to a long-necked lute, this cithara in fact turns out to be a large *sistrum*; while the miniaturist has either confused the literal instrument list found in the Psalms, or made a conscious substitution of *sistrum* for *cithara*, but he, unlike the illustrator of the Prudentius drawing (**Pl. 42-43**) does not have the image of a lute in his mind.

A later image of David and musicians from the Ivrea Psalter (998 - 1002) conveys information of consequence for the 12th-c. cetra: frets.[181] Until now, these have been depicted rarely; we have seen them on two long-necked Utrecht Psalter lutes (**Pl. 65-66**), out of a total of eleven in that manuscript, and we know that the surviving Byzantine lutes were fretted with thin wooden frets and, in one case, tied gut.[182] The new aspects of the Ivrea lute are (1) the neck-to-body length is shorter than previous fretted examples just named, (2) the fingerboard is a bit wider, and (3) the frets are drawn as pairs of parallel lines which might - nothing is conclusive - suggest the broad wooden frets that, albeit much later, are a trademark of the cetra (**Pl. 70**):[183]

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[179] Steger 1961, 165.

[180] Instruments may be held upside down in certain depictions of the Elders of the Apocalypse (see, for example, CE 2). The reason for this artistic convention may be that the Elders are described in the Revelation text as having three objects: crowns, phials (incense vessels) and citharae. They offer their crowns to the Throne of God and hold up incense vessels, which may often resemble the oval form of the citharae (see CE 6 for a 13th-c. example). The two similar objects thus came to be sometimes depicted in an attitude of offering. For further discussion, see Young 2015, 99-101.

[181] Seebass 1973, 177.

[182] See Eichmann 1994 for a discussion about frets on Byzantine lutes.

[183] See Chapter 4 for a discussion of frets on the cetra.

Plate 70: Ivrea, Biblioteca Capitolare, Cod. LXXXV, f. 23v. (998 - 1002).[184]

[184] Photo: http://gallica.bnf.fr/ark:/12148/btv1b550014234/f8.item.zoom (accessed 22.11. 2016).

1.12 Morphology of the Cithara : The Road to Santiago

To a significant extent, the history of stringed instruments in Western Mediterranean areas from the 5th/6th c. going into the 12th c. is about the adaptation of Byzantine elements, culminating in the adoption of the bow c. 1000. We have seen how the long-necked pandura flourished in Rome and particularly in the southeastern sector of the Empire, where the Christian (Coptic) artifacts have been found. Short-necked ovoid chordophones had appeared in Byzantium by the 7th c., possibly earlier, and we noted an example unearthed from a well in Corinth, dating to c. 1000. Meanwhile, mixed types of both the spade-bodied, long-necked Eastern pandura and the short-necked oval forms occur in Carolingian Psalter illustration, from Italian and northern French workshops, the latter consistently referencing Italian morphological prototypes of Byzantine influence.

By the 11th c., bows are seen playing a wide range of stringed instruments which had previously been plucked with plectrum or finger. Lyres, with and without fingerboards, are sometimes depicted with a bow, as in **Pl. 71**:

Plate 71: Vatican, Vat. lat. 5729, (Ripolli Bible, c. 1020).[185]

[185] Photo: https://digi.vatlib.it/view/MSS_Vat.lat.5729 (accessed 19.10.2017).

It was, however, another Byzantine instrument, the short-necked chordophone, both ovoid and waisted, which became the big success story for the bow as a new fashion, and which took two forms, oval and waisted, as seen in **Pl. 72, 73** and **74**:

Plate 72: British Library, Add. MS 40731, f. 7v, (Bristol Psalter, 11th c.), showing waisted bowed instrument on the left; to the right of King David in the middle, a plucked oval-bodied instrument might be an Arab-style lute with bent-back pegbox, but the form is not clear enough to be conclusive.[186]

[186] Photo: http://www.bl.uk/manuscripts/FullDisplay.aspx?ref=Add_MS_40731 (accessed 22.11.2017).

Plate 73: British Library, Add. MS 40731, f. 223 (Bristol Psalter, 11th c.): Three instruments hang from a tree next to a group of captive Israelites (left to right: D-shaped harp(?), drum(?), waisted four-stringed chordophone with soundhole and prominent end-projection, suggesting (?) plucked instrument).

Plate 74: Florence, Museo Nazionale, Coll. Carrand, No.26: relief on an ivory box, *putto* on an acanthus leaf (Byzantine, late 10th - early 11th c., Seebass 1973; or 11th c.?).[187]

[187] Florence, Museo Nazionale, Coll. Carrand, No.26. Seebass 1973, 27, commented that this is the only knee-supported bowed instrument he had seen; compare Pl. 51-52 above. This artifact shows with multiple instrument images, including a Roman-style kithara. Image published in Goldschmidt 1930, Nr. 33; Bachmann 1964, Pl. 9.; Seebass 1973, 29; photo: https://www.flickr.com/photos/6144261l@N07/35818599744/in/album-72157685216663764/ (accessed 03.08.2017).

The dispersal of Italo-Byzantine instrument forms into Western Europe is traceable, at least, by their reception and manifestation during the 11th c. along the Great Pilgrim Way to the Shrine of Saint James at the end of the world (*Camino del Santiago*), although Roman settlements and trade had left their mark on northern Spain from far earlier times. The late 11th and 12th centuries saw the construction of the cathedrals and monasteries along the Camino (such as Burgos, Leon, S Millán de la Cogolla and Santiago itself), rich in Romanesque sculpted decorated portals which included musical instruments, typically in the hands of the Elders of the Apocalypse.[188] Necked chordophones, oval and waisted, are abundant in the cathedral sculpture, especially from the 13th c.; although they may be carved without any bow being present, a manuscript miniature c. 1180 from Burgos shows the same two forms consistently played with a bow (**Pl. 75**), raising the idea that the carvings consistently represented bowed instruments, whether they have bows or not:

Plate 75: New York, Metropolitan Museum of Art, 1991.232.14r, (Burgos, Monastery of San Pedro de Cardeña, Beatus Commentary, Seven Plague Angels and the Adoration of the Lamb, c. 1180)[189]

[188] The best single photographic survey of northern Spanish and southern French cathedral sculpture for musical instruments is Seebass 1973.

[189] O'Neill 1993, 300-01 (Plate 153). Photo: https://www.metmuseum.org/art/collection/search/466195 (accessed 23.07.2017).

A second earlier example, an ivory carving from the monastery at S Millán de la Cogolla c. 1060-80, features an oval-bodied instrument with a distinct tailpiece (**Pl. 76**):

Plate 76: New York, Metropolitan Museum of Art, Ivory (1987.89), showing San Millán; (Monastery San Millán de la Cogolla, 1060-80).[190]

[190] Photo: O'Neill 1993, 262.

This ivory plaque shows S. Aemillianus with a cithara of Byzantine influence: oval-bodied and with a tailpiece presumably to facilitate the use of a footed tailpiece-bridge, possibly to allow extended height to facilitate bowing; such a tailpiece raises, again, the question of 'bowed or plucked?', and while it does not provide conclusive evidence one way or the other, it could be suggestive of a bowed instrument, following the (still relatively new) Byzantine bowed fashion.

The importance of the Camino as an *east-to-west* conduit for artistic influence can hardly be overstated:

> "At that time (2nd half 11th c.) the camino was not only a channel for artistic interchange, it was an industry...beginning with his first visit to Rome in 1099, Gelmirez (Bishop of Compostella) carried ideas and models (back from Rome), and he found artisans to carry out his designs in the many lively workshops along the camino. The *ciborium* and the *confessio* he donated to the sanctuary of Santiago and the *paradisus*, or *atrium*, that extended across its north facade were explicit quotations from Saint Peter's in Rome...the camino represented a privileged means of communication in the traffic not only of goods and peoples, but also of information. Everything that was said, preached, sung, recounted, sculpted, or painted along the camino - called the *strata publica*, or public way - reached many people and traveled great distances. Without the pilgrimages Spain would still have witnessed the production of Romanesque art, but that art would have lacked the integrity, monumentality, and consistency that came from its origins"[191]

A genuine plucked, non-bowed necked chordophone found in northern Spanish church sculpture is the citole, as a manifestation of the reception of the Italian cetra along the pilgrim route (**Pl. 77**). Pre-13th-c. Italian cetre (see **CE 1, 2, 4, 5**) antedate the earliest carved citole monuments in Spain (which represent the earliest appearance in Western Europe of the citole with its characteristic thumb-hole construction).[192] The relationship between the

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[191] O'Neill 1993, 180, 182.

[192] In her excellent study of the citole from 2010, Alice Margerum lists only two Spanish sculptures as dated before the 13th c., and both of these are problematic. Neither can be assigned a conclusive date, whereas the Antelami sculpture in Parma sits firmly at about 1200 and is clearly a different animal than the Spanish thumbhole instruments. Regardless of the Antelami cetra, there is a sufficient quantity of earlier images to confirm the presence of the cetra in Italy *at least* 100 years before the earliest Spanish citole representation.

citole and the cetra has been unnecessarily complicated by modern research, but a close scrutiny of iconographical sources for both instruments - and they are by no means the same instrument - will confirm the citole as a Spanish (Spanish-French) response to the Latin fashion of a cithara that, with many, many other items, journeyed along the starry Way of St. James.[193]

Plate 77: Toro, west portal c. 1240 (Photo: Christian Rault).[194]

[193] This list of music history research publications citing the commonplace of musicology that the citole is the ancestor of the cetra is too long to elaborate here; it may suffice to mention Grove Music Online, "Cittern" (https://doi.org/10.1093/gmo/9781561592630.article.05831, accessed 15.03.2018) and MGG Online, "Cister" (https//www.mgg-online.com/article?id=mgg15261&v=1.0&q=cister&rs=id-07a02502-5f0c-e1df-dbcf-e9b691d84f30, accessed 15.93.2018).

[194] Photo: http://www.christianrault.com/fr/publications/the-emergence-of-new-approaches-to-plucked-instruments-13th-15th-centuries (accessed 23. 06.2017).

In conclusion (and speaking of Spain), a special and distinctive monument in the history of lute-family instruments in Western Mediterranean culture is the group of illuminated manuscripts known as the *Beati* or Beatus manuscripts, transmitting Beatus of Liébana's 8th-c. commentary on the Book of Revelation (*Commentaria In Apocalypsin)*. These works have rightfully been called "one of the most brilliant chapters in the history of manuscript art."[195] According to art historian Peter Klein,

> "The copies of the Beatus Commentary were almost exclusively limited to Spain, only two of the extant manuscripts and fragments originating outside Spain. Ten copies include only the text, but another twenty-four illustrate the text with a cycle based on a fifth- or sixth-century Spanish or North African model. These illustrations, inserted between the Apocalypse text and commentary and probably added already during the lifetime of Beatus, were originally simple, schematic images summarizing the essential elements of the Apocalypse text.....The Beatus Apocalypse cycles continued to be copied into the thirteenth century. In the twelfth and thirteenth centuries. the Beatus tradition experienced a final revival, probably due to the large number of newly-founded monasteries: the Cistercians especially commissioned new and, at times, richly illustrated copies of this highly esteemed Iberian monastic text."[196]

The Beatus illuminations containing *citharae*, then, span a time period from the 10th - 13th centuries. The manuscripts are grouped into three "families", Family I (c. 930 - late 12th c.), Family IIa (same time period but different painting style), and Family IIb (begins c. 970 but extends to mid 13th c.; different style to I and IIa).[197] 10th- and 11th-c. manuscripts within these "families" share a general, highly mannered painting style often described as Mozarabic, whereas the general style of the later illuminations is Romanesque or, in the 13th c., increasingly Gothic.[198]

How do the instrument depictions in the Beatus illuminations fit in with the story of the cetra?

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[195] Williams 1993, 17.

[196] Klein 1990, 8-10.

[197] Klein 1990, 11-13.

[198] See Schapiro 1939 for an extended discussion of Mozarabic vs. Romanesque style.

Family I and IIa instrument images show oval-bodied lutes with long, thin necks and T-shaped peg-heads, carrying the stamp of the Byzantine pandura. Furthermore, thanks to the presence of an occasional bowed cithara, a clear Byzantine influence must be assumed concerning the models which were used for the painting. In Williams formulation, "Eastern elements in peninsular art may have often been channeled through Africa...a small group of early Spanish churches employs a special arrangement of basilical space that suggests contact with North Africa."[199] The pandura had also already travelled to Spain, prior to the Byzantine era, in Roman colonies.

A late 12th c. Beatus manuscript from Family IIb, the "Rylands Beatus", has apparently the earliest examples of a plucked, slightly waisted body shape for a cithara within the corpus of Beatus manuscripts (see Appendix I, Ex. 6; similarities to Ex. 6 are also seen in Appendix I, Ex. 2).[200] This source, according to Klein, " might be one of the Romanesque copies of the Tabára Beatus made in the region of Burgos."[201] While the Tabára Beatus does not contain images of instruments (it seems to be missing a number of illuminations), if Klein is correct in considering the provenance of Burgos for the Rylands Beatus, then the prominent position of Burgos along the Camino del Santiago might suggest a possible influence of the Italian cetra, via pilgrim traffic and trade routes, upon specific cithara images in Beatus illumination from the late 12th and first half of the 13th centuries. A second Beatus manuscript (Morgan 429), dated 1220, has also been situated in Burgos, as its place of origin, by Klein.[202] This is precisely the period of the manifestation in northern Spain of the citole, under the influence and in the wake of Latin culture, fashion and artifacts.

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[199] Williams 1993, 15.

[200] See Klein 1990 for background and description of the Rylands Beatus.

[201] Klein 1990, 13.

[202] Klein 1990, 13.

Chapter Summary: Main Points

1. The early Christian world view regarding music included stringed instruments inherited from Greco-Roman culture, in particular the Classical kithara/cithara and chelys-lyre.

2. No instrument is more present in the Vulgata text than the cithara, which generated text commentary by the Patristic writers. Their writings represented the first step in the adaptation or Christianization of what were originally pagan stringed instruments; the Church Fathers were not concerned with any real knowledge of ancient Hebraic chordophones, they rather applied Biblical symbolism to instruments of their contemporary culture. This formula continued throughout the Middle Ages with Christian writers.

3. The authority of written Christian commentary and doctrine produced practical manifestations in art and in life; Latin stringed instruments were adapted and identified with Christian symbolism and media purpose.

4. In addition to the two Greco-Roman lyre forms kithara and chelys-lyre, a long-necked lute form from the Eastern Roman or Byzantine Empire, the pandura, was Christianized. Seven surviving examples from Christian Egypt (5th - 8th c.) provide secure evidence of the cultivation and Christianization of the long-necked lute.

5. 9th-c. Carolingian instruments also participated in the further Christianizing process, incorporating Byzantine elements and including lute and lyre forms of the cithara.

6. A new lute type first seen in the 8th c. is the Byzantine short-necked ovoid form, which manifests its influence in Italy by c. 1000.

7. The use of the bow, also of Byzantine origin, becomes fashionable throughout the Western Mediterranean region from the late 10th century. In Italy it was used as an alternate way to play a plucked cithara, especially short-neck ovoid lutes and lyres. Elements of these types - the ovoid short-necked lute and the bowed lyre - are seen in a new type of spade-bodied lute, the prototype cetra, during the 11th century.

8. Pilgrim traffic, particularly to Santiago de Compostella, facilitated the dispersal of Latin fashion and culture to the west and north, including the cetra of the 11th - early 13th centuries. The assimilation of the Latin instrument first in northern Spain and southern France produced local forms as an answer to the cetra: the citole.

CHAPTER 2: La Cetra Cornuta c. 1100-c. 1535 : Romanesque to Renaissance

2.1 La Cetra Romanica

The progression of instrument forms in the ancient and Christian Mediterranean world through the Ottonian period to c. 1000 presented in **Chapter 1** ended with the advent of the bow, from Byzantine Greece during the 10th c., into Italy and other areas of the northwestern Mediterranean basin, including Spain and southern France. It was a new way of playing lutes and lyres which would forever change the sound of Western music, and five centuries later, an historian of European music referenced the introduction of the bow. Johannes Tinctoris writes with a special fondness about the bowed *viola,* a lute with incurved sides: it was

> "devised (as they say) by the Greeks, differing from the lute not only in shape (like that) but also in the disposition and striking of the strings.....these two instruments (viola and rebec) are mine, mine I say, that is the ones among the rest with which my spirit lifts up to the affection of piety, and which most warmly kindle my heart to the contemplation of heavenly joys."[1]

The bow's Byzantine heritage from earlier centuries was known to Tinctoris, but in his description he was also thinking of a very fashionable instrument of his own day, the *lira da braccio*, a modern (15th c.) take - like the cetra - on the Classical chelys-lyra or cithara. His endorsement of the bowed viola as an instrument suitable for heavenly contemplation seems to echo the identity of another type of cithara - the *psalterium* - for the Church Fathers, who had distinguished it from the cithara, which they associated more with earthly humility.[2] And while our modern culture might be somewhat puzzled at Tinctoris' coupling of piety with what could be seen as an ancestor of the violin, he clearly knew his exegetical texts.

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[1] Johannes Tinctoris, *De inventione et usu musice*, translation from http://earlymusictheory.org/Tinctoris/texts/deinventioneetusumusice/#paneo=Translation accessed 23.08.2017. The treatise was compiled most likely during the 1470's and finished by c. 1483.

[2] Humility was also associated with the lowly tortoise, whose shell was used as the original resonator for the chelys-lyre (see Chapter 1).

In **Chapter 1** we have seen how, in Byzantine iconography, the bow was used on oval and waisted lutes, and on the fingerboard lyre in Italian and northwest Mediterranean iconography. By the early 12th c., the short-necked spade lute is also found played with the bow as in **Pl. 78**:

Plate 78: Mantova, Biblioteca civica PS C III 20, f. 2 (San Benedetto de Pado; first half 12th c.)[3]

3 Photo: https://www.lessingimages.com/ (accessed 05.10.2017).

The bowed spade lute in **Pl. 78** resembles another north Italian miniature of the same period which may suggest that this type is morphologically close to an evolving, shoulder-held fingerboard lyre (compare **Pl. 71** in **Chapter 1**) as shown in **Pl. 79**:

Plate 79: Paris BN lat 2508, f. IIv (early 12th c., north Italian)[4]

Whether one says the instrument above evolved from a fingerboard lyre which lost its arms and gained a bow, or that the Byzantine bowed lute became modified in Italy under the influence of the fingerboard lyre, there are no records of a fingerboard lyre as

[4] Photo: Bachmann 1969, Pl. 23.

an instrument in Byzantine culture. The few records that survive point to Italy for the fingerboard lyre, although an Italian provenance for the instrument type cannot be conclusive.[5] Lyre without fingerboards were well-known north of the Alps from the 5th. c. in the form of the so-called Alemannic lyre.[6] Indisputable, however, will be the morphological resemblance between **Pl. 80-81** and **Pl. 78-79** above. In recognizably similar north Italian style of illumination, we see in **Pl. 80** the plucked version of **Pl. 78** from the so-called Bibbia di Santa Cecilia Trastevere, dated variously between 1073 and 1119:

Plate 80: Rome, Biblioteca apostolica vaticana, Barb lat 587, f. 194[7]

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[5] See p. 25 above and footnote 44 for an Italian gloss on Cassiodorus which mentions five stringed instruments c. 1000, including four instruments known from Italian iconographical sources (Harp / *arpa*, bowed *vitula* /fiddle, the cithara played with a plectrum (= Byzantine short-necked lute?), and Italian rotta (fingerboard lyre?); the fifth, Barbaric lyre, might refer to the Alemannic lyre of which we have surviving examples dated to the 6th c., much later seen played with a bow in German 13th-c. iconography. See Seebass 1973, Pl. 100-101.

[6] See Theune-Grosskopf 2006 for a description of a surviving 6th-c. Alemannic lyre.

[7] Photo: https://digi.vatlib.it/view/MSS_Barb.lat.587 (accessed 10.08.2017).

Plate 81: Rome, Biblioteca apostolica vaticana, Barb lat 587, f. 194, detail.

The years around 1100, then, provide a rough date for the presence of plucked spatulate chordophones, a prototype cetra, in Italian culture. The catalog of images from this period is richly enhanced by the Hamilton Psalter, dated from the second half of the 12th c., copied at a Vallombrosian monastery in the region of Florence or Fiesole, but based on north Italian miniature models from the second half of the 11th c. (**Pl. 82-84**):[8]

Plate 82: Stuttgart, f. 88r.

[8] Augustyn 1989, 119. See CE 3 below.

Plate 83: Stuttgart, f. 125r.

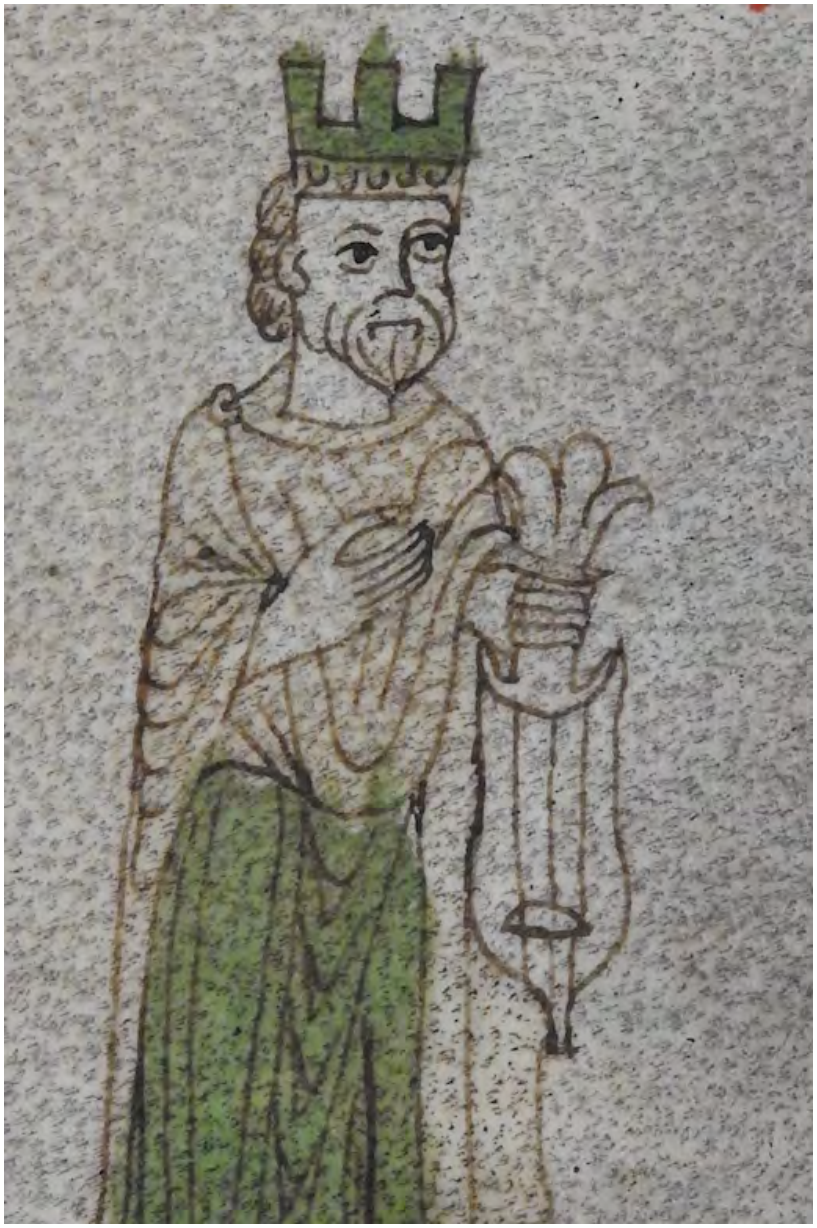

Plate 84: Stuttgart, f. 94v.

With the Hamilton images we have spatulate chordophones with prominent forward-pointing shoulder ornaments. They were dubbed "wings" by Winternitz and other researchers, which is perhaps more suggestive of shoulder ornaments at an angle of 45 degrees or more outwards, rather than short, thin projections following a parallel orientation to the sides of the neck, as in **Pl. 82-83**.[9] There are at least two other descriptive terms for these projections which might be more appropriate than "wings": "leaves", as in the outer two leaves of the three-leaved trefoil form so often found as an attribute of David, or "horns", in reference to the chelys-lyre as mentioned above. Regarding "leaves," the projections sometimes take a curved, tulip-shape form, as seen for instance in the Utrecht Psalter drawings (**Pl. 65-66**), or in later examples where the peghead suggests the center leaf of the trefoil (see **CE 12**). Such shoulder shapes may also remind us of the *spadix* or palm branch leaves discussed earlier in the context of late Roman / Byzantine *pandurae* (**see Pl. 29, 34**). "Horns," on the other hand, is a term, specific to the cetra, found in 16th c. Italian literary sources which makes the chelys-lyre reference unequivocal, and we shall use this term in the present study for the full period under consideration.

Circa 1100, horns become a salient feature of the spatulate plucked chordophone in Italy. We must underscore that they are found on plucked instruments only; they are never found on bowed instruments during this period, and bowed and plucked can be very similar indeed, as we have seen in the examples above. Oval short lutes, including examples with *cornered* shoulders, are seen in both plucked and bowed forms. *Horned* short lutes seem to be exclusively Italian, in all probability as a reference to the Roman/early Christian lyre, perhaps (?) with a more distant cultural nod to the native Etruscan lyre ("cylinder kithara"). Although their bodies are of general spade form (with cornered shoulders), horns are not present on the surviving Byzantine *pandurae* discussed above, and they are not seen in iconographical images after the 9th-c. Utrecht Psalter until we come to the Hamilton Psalter (**CE 3**). Remembering that the Utrecht drawings are based on earlier Italo-Byzantine models, it is possible that there were horned chordophones in use in Italy during the centuries preceding the Utrecht Psalter, although there is no first-hand evidence to support the theory.

The main point, however, is that horns manifested themselves in the 11th c. both as a direct response to the new Byzantine fashion of bowing, which by 1100 was being applied to virtually

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[9] Winternitz 1961, 224.

all chordophones except the harp and psaltery, and as an emblem of something specifically Italian. They identified a lute as being plucked, not bowed, and being something not foreign or exotic, but rather native to Italy, and tied to Christian culture centered in Rome. The cultural identification may also be considered as a manifestation of what might be called "Crusade culture", that is, the focused opposition of Christians versus Muslims which culminated in the First Crusade of 1096.

And so the "Romanesque cythara" has come into being.[10] It is found in Christian iconography of the Psalms or in the hands of the Elders of the Apocalypse only. The iconographical examples shown thus far from the 8th c. (Dagulf Psalter., **Pl. 46**) and later are all within the context of Psalter illumination, with two important exceptions, **Pl. 50, 67**. The Apocalypse scenes - which include lute images - begin in Italy in the 11th c., and we may remind ourselves that all of these Psalter/Apocalypse images graphically crystallise the name cithara and not *lira*, for example, for the latter term is not present in the relevant Bible passages.[11] The two exceptions we have seen which are outside of Bible iconography (**Pl. 50, 67**) are related to music theory, which, together with Christian iconography, forms the theoretical background out of which the "Romanesque cythara" manifests itself. As the cithara of Bible art, the necked, plucked *cythara* has by 1100 assumed an iconographical presence of (at least) equal importance to the psaltery/lyre/harp in Italy, but it has also found a place in the study of musical science of far greater importance than any other instrument.[12]

Music historian Susan Boynton, following Lawrence Gushee, pointed out in 1999 that the 10th century witnessed an "apparently sudden and dramatic turn to 'scientific' or 'technical' music theory", while Calvin Bower "has shown the development of glosses on Boethius' *De institutione musica* in the first half of the ninth century, and the reception of these glosses in treatises as early as Aurelian of Reome's *Musica Disciplina*."[13] The tenor of the times, amongst

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[10] This 12th-c. spelling is the earliest I have found; see Appendix II, XII-1.

[11] See p. 123 above, as well as the discussion of Patristic commentary on musical instruments in Chapter 1.

[12] For an overview of these stringed instruments in Romanesque art, see Seebass 1973.

[13] Boynton 1999, 53-54, makes reference to Gushee 1975, 395, and Bower 1997. Bower divides the influence of Boethius in the ninth century into three stages: reception (800-830), demonstrated by the early glosses on *De institutione musica*; reaction (830-60), evidenced by Aurelian's use of glosses on Boethius; and redaction (860-900), exemplified by the synthesis of musica and cantus in the *Enchiriadis* treatises.

educated clerics, was well expressed by Regino Prumiensis (Prüm or Trier c 900? or late 9th c.):

> "But behold, while we attempt to make known the tones, we have strayed rather far in the very vast and deep forest of musical instruction, which is wrapped in the obscurity of so much mist that it seems to have receded from human knowledge. For while there are very few who judge its force and nature with firm reasoning, nevertheless they are unable to demonstrate clearly with their skill that which they understand about it. On the contrary, there are many who play music with their fingers or produce it with the sound of the voice, but do not at all understand its force and its nature. In short, if you ask one of the lute or lyre players, or anyone else possessing a knowledge of musical instruments, to explain the tones, semitones or consonances, or to show knowledge of strings, how one string is associated to another by a fixed numerical proportion, he will give you no response to any of these questions. He will admit only this: that he does these things in this way, just as he has received and learned from his master.[14] Therefore music to a very great extent hides itself from the knowledgeable and the ignorant alike; it lies as it were hidden in a deep mist."[15]

Clearly, Regino's words are an exhortation for fostering education in musical science, also for players of stringed instruments. But which instruments did Regino's "lute and lyre players" of the 9th c. actually play? We have existing lyres from the period, the so-called "Alemannic lyres" found via archeological excavation in Alemannic grave-sites in southern Germany from the 6th-8th centuries. These found a corresponding presence in German iconographical

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[14] Regarding music education specific to the cetra, see App. II, XIV-1.

[15] '*Sed ecce dum tonos ostendere conamur, per vastissimam et profundissimam musicae institutionis silvam longius evagati sumus, quae tantae caliginis obscuritate involvitur ut a notitia humana recessisse videatur. Namque cum perpauci sint qui eius vim et navidum certa ratione perpendant, tamen quod de ea intellegunt, manuum opere ad liquidum demonstrare non possunt. Rursus cum multi sint, qui eam digitis operentur, vel vocis sono promant, eius tamen vim atque naturam minime intellegunt. Denique si roges cytharaedum sive liricum vel alium quemlibet instrumentorum musicorum notitiam habentem, ut tibi pandat tonos, semitonia vel consonantias, ostendat cognitionem cordarum, qualiter illa corda ad aliam rata numerorum proportione societur; nullum tibi penitus ex his dabit responsum. Solum hoc confitebitur, quod hec ita faciat, sicut a magistro accepit et didicit. Cum igitur a scientibus et a nescientibus se musica ex permaxima parte abscondit, quasi in profundo obtecta caligine iacet*'. Epistola XVIII 1-6 Clavis Gerberti, 70-71.

sources of the 12th and 13th c., whereas they are all but absent from Italian sources of the same period, and unknown in sources of Regino's time. Two 9th-c. fingerboard lyres were discussed in the Carolingian miniatures shown in **Chapter 1**, and were plausibly present to some extent in Italy before the 9th c. As mentioned earlier in this chapter, the Byzantine bowed necked chordophone came under the influence of the fingerboard lyre by c. 1100 to manifest as a shoulder-held proto-vielle in Italy. The few known images of this instrument (**Pl. 79**) show three strings and no frets. In any case, Regino's period had not yet seen the bow. His cithara and lira were plausibly a necked chordophone and lyre (the latter with or without fingerboard; harp is a further possibility but it carries less presence in music iconography of the Carolingian period), and of these, the former recommended itself as the Boethian cithara of the study of *musica.* By the time of Guido d'Arezzo (the famous monk and music teacher who lived in Arezzo during the first quarter of the 11th century), who mentioned it three times in his treatise *Micrologus,* the *cythara* had become the dominant Italian chordophone suitable for the demonstration of music theory, with the following points to recommend it:[16]

1. **Tortoise-based body + string number**. The four-stringed necked chordophone was the logical available morphological candidate to be considered analog to the four-stringed cithara mentioned by Boethius for literate, educated (=clerical) musicians from the 9th c. onwards, with an oval or half-oval (spatulate) resonator.[17] A four-stringed instrument conforms to the description in Boethius of the quintessential musical instrument, the so-called "quadrichord of Mercury", mentioned earlier in **Chapter 1** in conjunction with the mythological origin of the chelys-lyre, the instrument made from a tortoise-shell,

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[16] Babb 1978, 70. (Chapter XIV): *Et item alius quidam citharae suavitate in tantam libidinem incitatus, ut cubiculum puellae quaereret effringere dementatus: moxque citharoedo mutante modum voluptatis poenitentia ductum recessisse confusum. Item et David Saul daemonium cithara mitigabat, et daemonicam feritatem huius artis potenti vi ac suavitate frangebat*. ("Also that another man was roused by the sound of the cithara to such lust that, in his madness, he sought to break into the bedchamber of a girl, but, when the cithara player quickly changed the mode, was brought to feel remorse for his libidinousness and to retreat abashed. So too, David soothed with the cithara the evil spirit of Saul and tamed the savage demon with the potent force and sweetness of this art.")

[17] Four-stringed lutes are shown in the Stuttgart Psalter, as for example in Pl. 54., although three strings are seen in a majority of depictions, surely symbolic of David, the Trinity, etc. In the Stuttgart Psalter, as in the Utrecht Psalter and elsewhere, there is often a discrepancy between the number of pegs on the peghead and the number of strings shown running over the body (see also the Hamilton Psalter, Pl. 83, for four strings on the body and three pegs). Fingerboard lyres are documented in noticeably fewer iconographical sources, and at the present time I am not aware of any showing four strings.

by Mercury.[18] The four-stringed instrument, as a horned cetra, is documented from the late 12th c. on (see Catalog in **Chapter 3**).

2. **Monochord with frets**. A necked chordophone is by definition a kind of monochord, albeit with more than one string; any stoppable string stretched over a resonating chamber is, in fact, a monochord of sorts. As Boethius and countless other later theorists repeated, by changing the points of stopping the string, various pitches are found.[19] These can be quantified mathematically, that is, in terms of measurable length to ascertain a proportion of the length of the stopped string against the length of the same unstopped string. The points of stopping the string are, on the monochord, determined by a moveable bridge. While some necked chordophones (including the fingerboard lyre) used fretless fingerboards upon which the left-hand finger was simply pressed, the lute is the only early chordophone type with unequivocal fretted examples, the frets serving as multiple bridges for each string to obviate the necessity of changing pitch by actually moving a single bridge, as would be the case on a monochord. It is the ideally practical instrument for the demonstration of intervals and tetrachords as related to the modes.

3. **Christian icon of Old and New Testaments**. The lute was, by the later 11th c., better established in Christian iconography, both within and outside of the Italian peninsula, than any other stringed instrument.

4. **Earthly, humble instrument of cleric and everyman**. The four-stringed lute is a more humble, practical musical tool than the fingerboard lyre, or for that matter, the Alemannic lyre; lyres carried an association of courtly nobility, whereas music instruction took place in cathedral schools and monasteries, thereby conforming to the Patristic commentaries on the nature of the cithara.

5. **Ubiquitous as icon of music notation**. Last but not least, the association of the lute with music theory resulted in the invention of the four- or five-lined staff used in Western music notation. This point alone would suffice to establish the connection between the lute and music theory, in the earliest context, to be able to record chant melodies by writing them

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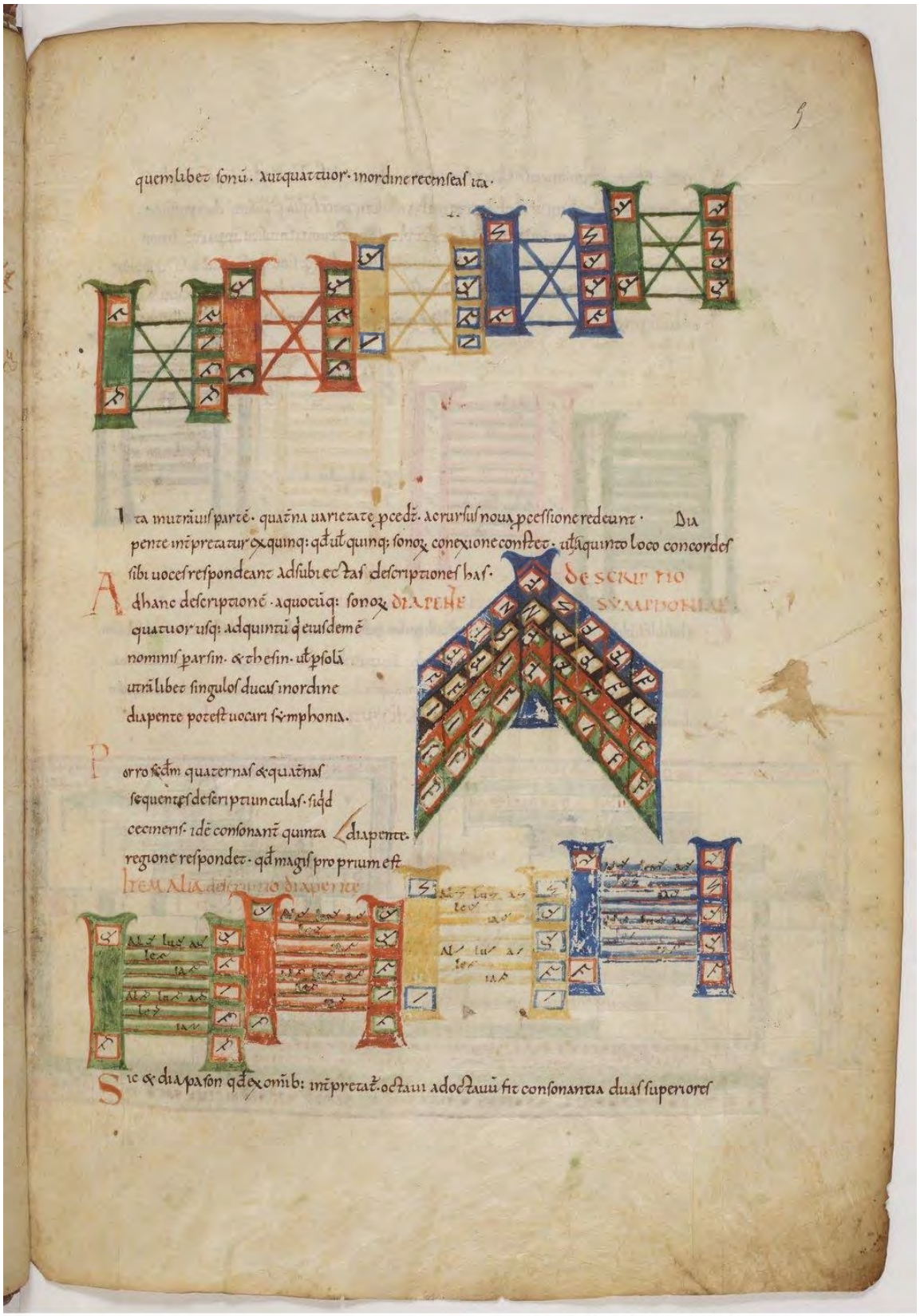
[18] Bower 1989, 29-30.

[19] Bower 1989, 128-130.

down on parchment. The use of parallel horizontal lines used to record graphic symbols of pitch was derived from the horizontal playing position of the instrument; indeed the theorists speak of the strings of the cithara, for late 9th-c. treatises such as Hucbald's *De harmonica institutione* and the *Musica enchiriadis* use *chordae* as the term for "staff lines".[20] An example from the latter source is this (**Pl. 85-86**):[21]

[20] The invention of lute tablature is universally considered to be a phenomenon of the Renaissance, i.e., the 15th century. Virdung attributes the origin of tablature specifically to "Meister Conrad from Nuremberg" (Conrad Paumann, c. 1410-1473), yet the basic idea of a graphic line system representing the strings of the instrument, in its practical playing position, as a basis for pitch representation, goes all the way back to these 9th c. sources. For the passage on Paumann, including the translation cited here, see Bullard 1993, 156.

[21] Photo: gallica.bnf.fr (accessed 21.06.2016).



Source gallica.bnf.fr / Bibliothèque nationale de France

Plate 85: Paris, Bibl.nat., ms latin 7212, f.5r: *Musica enchiriadis* diagram of *chordae* (strings) showing tetrachords (? Abbott Hoger, c. 900, Werden).

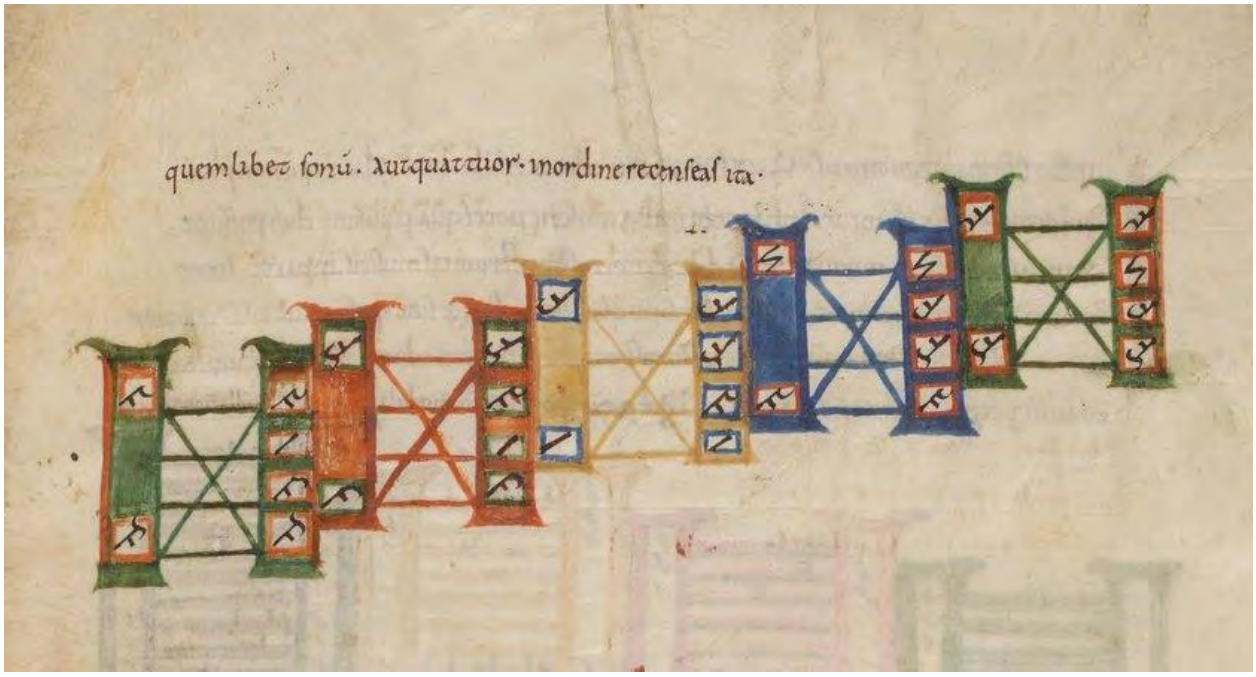


Plate 86: Paris, Bibl.nat., ms latin 7212, f.5r: *Musica enchiriadis* detail, diagram of chordae (strings) showing tetrachords (? Abbott Hoger, c. 900, Werden).

Pl. 86 represents five overlapping tetrachords within the octave D - d. Each tetrachord is designated by four horizontal lines, the *chordae* or strings which stand for pitches. Letters written in the boxes are Greek pitch names, the column on the left of each four-string tetrachord names the stabiles or limits of the tetrachord, while right-hand columns name each pitch. Left to right: **D** / E / F / G; **E** / F / G / a; **F** / G / a / b; **G** / a / h / c; a / h / c / d (letters in bold show the finales of each of the church modes).

A 10th-c. manuscript of the same treatise now at the Nationalbibliothek Wien includes a drawing, added in the 13th c., showing the musical scale as a series of parallel horizontal lines labelled at the top CITARA.[22] These are all the notes which can be found on the Pythagorean monochord, so-called *musica recta* (**Pl. 87**):

[22] Reproduced in Smits van Waesberghe 1969, 84-85.

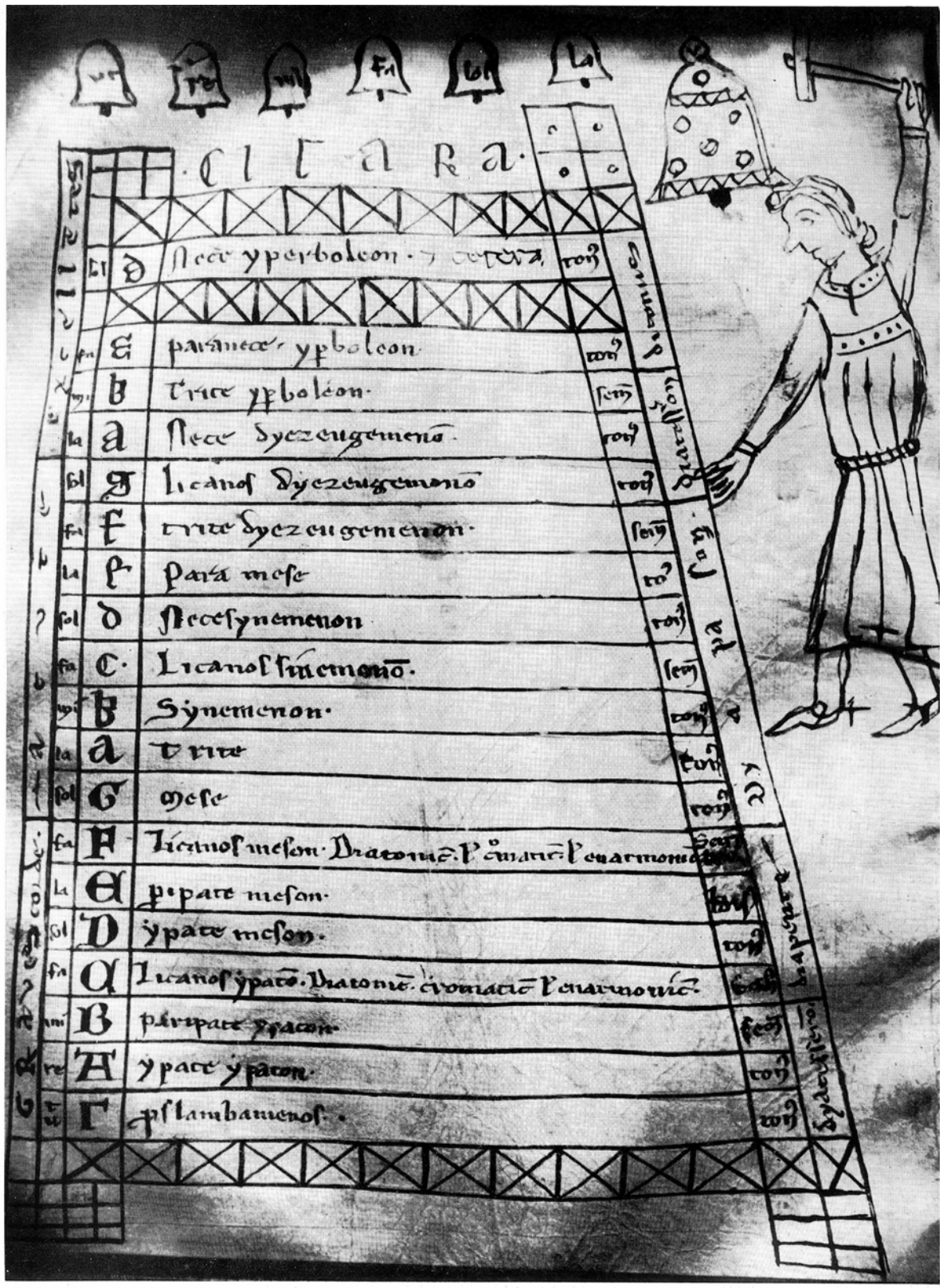


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Plate 87: Wien, Österrichische Nationalbibliothek., (Cpv) 55, f.167v: *Musica enchiriadis* (10th c., Benediktbeuern?); diagram of *musica recta* scale as CITARA.[23]

[23] Photo: Smits van Waesberghe 1969, 85.

Renaissance music theory continued the use of the cithara image initiated for the Latin Middle Ages by Boethius. The treatise *Musices Opusculum* of Nicolaus Burtius in 1487 contains an interesting diagram reminiscent of a cetra fingerboard with wooden frets (**Pl. 88**). The "frets" in this case are the consonances of music, perfect and imperfect, with the ends of each fret marked by a note on two vertical staffs, one to the left and one to the right. The right-hand staff uses the pitches D - d (just as *Musica enchiriadis* above), the staff on the left uses the same notes an octave higher. This is not a depiction of a cetra per se (nor are the "frets" placed in any real or literal distance to each other), but it does reference elements, consciously or unconsciously, of earlier cithara iconography; apparent "wooden frets" under vertical strings, shortening as they progress up the "neck", a triangular form at the top of the "neck", a projection ("stringholder") at the bottom, and a "Roman lute peghead" ornament within the triangle (two points projecting up).

A native of Parma, Burtius would have seen many times the distinctive carving of the cetra found in the Baptisterium next to the Cathedral, the late Romanesque work of Antelami mentioned at the beginning of **Chapter 1**. He apparently knew Giovanni Maria Lanfranco, another Parma native, as a teacher or younger colleague; Lanfranco's later treatise of 1533 *Scintille di musica* conveys precious information to us about the *cethera* (see **Appendix II**).[24] In their works as music pedagogues, the heritage of the cithara continues to manifest itself as it rides the wave of the Humanistic world view so prevalent during this period.

[24] See the dedication of *Scintille (*Lanfranco 1533).

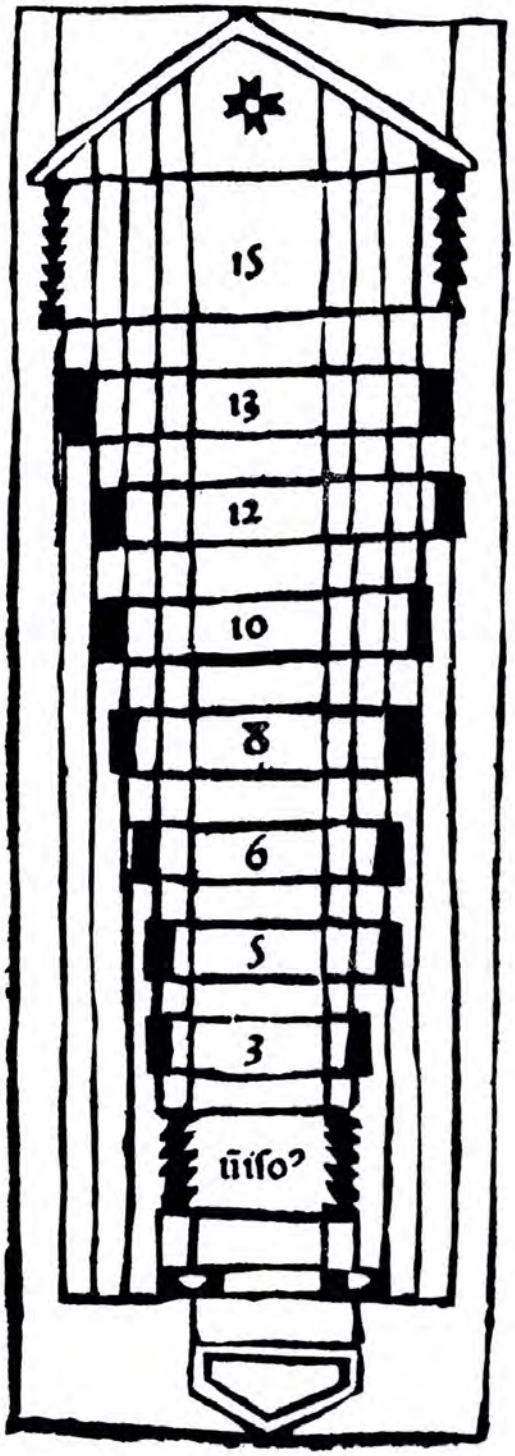

Plate 88: Nicolaus Burtius *Musices Opusculum, tractatus secundus,* f.eiiijr (Bologna: Ugo Ruggeri, 1487), diagram of musical consonances.[25]

[25] Photo: http://www.chmtl.indiana.edu/tml/15th/BURMUS2 (accessed 05.05.2016).

The Romanesque period witnessed the rise and establishment of Antelami's cetra as Italy's unique member of the lute family. It was generated out of two repository streams, Christian lore and Quadrivium science / *Musica,* and was sanctioned and cultivated by proponents of both. It seems to have had little, if any, competition from other members of the lute family; with very few exceptions, these do not appear in Italian iconography before the later 13th century. One such exception is a long-necked lute in two manuscripts now in Milano and Piacenza containing illustrations of instruments in the section of the treatise on musical instruments by Boethius (the instrument groupings actually conform to the text on instruments by Cassiodorus).[26] Both sources are drawn from a common earlier Byzantine (Italian?) prototype believed to be from c. 1000.[27] The Milano manuscript (**Pl. 89**) was copied perhaps during the first half of the 11th c., whereas Piacenza (**Pl. 90**) is dated later from c. 1200. As mentioned in **Chapter 1** (see footnote 47), an 11th-c. Latin gloss may shed light on the names of instruments used in Italy c. 1000: a bowed *vitula*, *arpa* (harp), a lyre which is called an Italian instrument (*itala rotta*), a non-Christian *lira* of some kind, and a cithara played with a plectrum. The lute is clearly the cithara (with plectrum), the *vitula* is the bowed lyre lower left, the *arpa* is the triangular instrument, leaving us unsure as to which of the two instruments placed center and upper left in the Milano MS (these are the top two in Piacenza) is the *itala rotta* and which the barbaric *lira*:

[26] See Footnote 4 for a caveat regarding "long-necked" lute depictions in art of the periods covered by this study. The Milano MS is

[27] For further discussion on these sources, see Smits van Waesberghe 1969, Teviotdale 1988, Bower 1989, Ferrari 2013.

Plate 89: Milano, Biblioteca Ambrosiana, MS C 128, f. 46.[28]

[28] Photo: Teviotdale 1988, 10.

Plate 90: Piacenza, Biblioteca Capitolare, ms. 65, f. 262v.[29]

[29] Photo: Teviotdale 1988, 13.

The three-stringed long-necked lute from the prototype source c. 1000 seems to reflect a Byzantine influence, although from how much earlier, it is difficult to say. The bowed instrument in the Milano and Piacenza MSS (see detail of Piacenza MS in **Pl. 91**) may be fundamentally the same kind of bowed lyre pictured in **Pl. 73**, although it looks closer, especially in the Milano drawing, to being a pandura derivative:

Plate 91: Piacenza, Biblioteca Capitolare, ms. 65, f. 262v, detail.

One other iconographical source strengthens the Byzantine long-necked lute connection for the Milano/Piacenza miniatures and their presumed prototype model c. 1000: a pair of lutes from the miniatures of one of the Cantigas de Santa Maria codices at El Escorial (**Pl. 92**):

Plate 92: El Escorial, Biblioteca de El Escorial MS B.I.2, miniature illustrating Cantiga 140.[30]

[30] Photo: http://www.thecipher.com/viola_da_gamba_cipher.html (accessed 22.11.2016).

The series of Cantigas miniatures from the El Escorial manuscript is quite unique in the history of Western music iconography, and it has had as much of an influence on modern interpretations of medieval music as it has for the history of medieval organology.[31] A full discussion of this source is thematically outside of the history of the cetra (although we shall return to it later for a discussion of the citole in relation to the cetra), however a few basics about the miniature series may help to shed some light on the one-of-a-kind instruments shown in **Pl. 92**. The four manuscripts containing the Cantigas de Santa Maria all come from the court of Alfonso X of Castile (1221 - 1284), whose royal scriptorium housed an international stable of Arabic, Jewish and Christian scholars and illuminators. The more than four hundred songs of the collection are songs of praise of the Virgin Mary, which follow the model of the Old Testament songs of praise, the Psalms of David, in using the association of musical instruments as symbols of the magnificence of the Heavenly Court. Because the Book of Psalms cites praising the Lord with the sound of many instruments, i.e., instrument types in the plural (*tubae*, *citharae*, etc), two of each type are typically shown in the miniatures; a literal daily performance grouping at a court in 13th c. Spain was not the artist's purpose.[32] All the world's instruments unite in one voice to give praise Mary, including a selection of instruments of non-Christian heritage, for example, the long-necked Arabic *tambur*.[33] The presence of such instruments in the miniatures is due, at least in part, to the presence of manuscript painters who were familiar with them, whether from first-hand experience in their homelands, or from having seen them at court or in other multi-cultural regions of Spain.

A second important aspect of the context of the Cantigas miniatures has been discussed by Peter Loewen concerning the presence of the Franciscan music theorist Egidius de Zamora, who was the music teacher of the son of Alfonso el Sabio.[34] Zamora's treatise contains the

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[31] For a useful summary of what the El Escorial miniature program meant to performers, organologists, instrument builders and music historians in 1989, see Brown 1989, 17.

[32] Similarly, the concept of all of the represented instruments playing together as a kind of medieval orchestra was an idea of the 1960's, as in the work of *New York Pro Musica*, *Studio der frühen Musik* and *Hesperion xx*, not of the 13th century. A particularly influential recording among performers in the 1970's and 1980's was *Estampie: Instrumentalmusik des Mittelalters* (*Studio der frühen Musik,* Thomas Binkley, EMI Reflexe 1974).

[33] For a brief comment on how performers, following Thomas Binkley's recordings of the 1970's, have misunderstood the long-necked Arabic *tambur* as an instrument in the Cantigas miniatures, see Young 2015, 102, footnote 16.

[34] Loewen 2013, 218 - 232.

exposition on musical instruments of another Franciscan, Bartholomaeus Anglicus (essentially based on Isidore of Seville; see p. 45), with added passages on Moorish instruments that reflect an interest paralleled by the wide variety of Christian and non-Christian instruments shown in the miniatures. This may also account for the difference in iconographic programs (organologically speaking) between the Cantigas miniatures and the regional cathedral sculptures of 100 (+/-) years earlier, the former showing a broader range of instruments than the latter.

Pl. 92 presents an organological puzzle. Here is a plucked, long-necked ovoid lute form with two support arms connecting the neck with the body, arms much shorter than the body-to-peghead arms seen on the Milano/Piacenza instruments. A similar lute form illustrating Cantiga 130 has no arms, no overlapping fingerboard, no bridge or tailpiece and smaller hole-clusters on the soundboard. The differences between the two lute types cannot be conclusively resolved from the images; perhaps the miniature for Cantiga 130 represents an instrument carved from one piece of wood, and Cantiga 140 depicts a lute where a separate neck has been joined to the body (of gourd, or a wooden bowl?), requiring "arm stabilizers". This is a best guess for the moment about a provocative morphological detail of the later evolution of the Byzantine pandura, which evokes the arms of the fingerboard lyre in a constructional gesture both symbolic and, one imagines, functional. In any case, the Cassiodorus material (text gloss and illustrations) demonstrates that the term cithara was used for the lute, also in a context where a vernacular name (*vitula*) was mentioned.

There is one further source which confirms that the Latin term *cithara* meant a kind of lute in Italy in the 12th c., according to the commentaries of Gioacchino da Fiore (Joachim of Fiore, c. 1130-1202, Calabria) in his writings. Describing the treatise *Psalterium decem cordarum*, art historian Beatrice Hirsch-Reich wrote in 1966,

> "the ten-stringed psaltery is praised as the foremost and most famous musical instrument, but the cithara is mentioned as nearly its equal. The cithara which often occurs in the Old Testament together with the psaltery or by itself is not represented as a figure in Joachim's works (*editor's note: there is a diagram of a psaltery in most of the manuscripts containing Joachim's treatise*), but it is described as a stringed instrument with a pear shaped body and three 'general' strings. Joachim refers to both

> instruments....the confrontation of these two famous biblical musical instruments, the symbolism of which forms the greater part of all the symbolism of musical instruments in the Church Fathers, particularly in the Commentaries to the Psalms, is one of its characteristic features. Usually the stress is on the superiority of the psaltery which had the sound box placed above the ten strings, radiating from the top, while the cithara had it below. This statement was invariably repeated by most authors and even in the Middle Ages when the arrangement of the strings of the psaltery had changed, Joachim discontinues that comparison, for he knew the structure of these instruments at his time."[35]

Whereas the Church Fathers always maintained the superior, more heavenly status of the psaltery, Gioacchino allows the cithara to be equal or even superior, to the psaltery.[36]
There are many things still to be discussed in detail about this "cetra romanica" - tuning, fret system(s), string materials, musical use, influence outside of Italy, as examples - but these points will be dealt with later in this study's exposition. We shall proceed to the next phase of the cetra story, which takes place in the 13th century in Umbria.

2.2 The Vision of the Cithara

In the early 13th c., events were happening in central Italy which would profoundly affect the history of Christianity and Christian art in the Middle Ages. A friar who had become a spiritual leader died in 1226 on the plain just below the hill-town of Assisi and was canonized in 1228 as San Francesco. The order that he had established effectively rejuvenated the Church in Italy, following a dynamic path of growth and contributing to new artistic currents in European culture. The success of the Franciscan movement is more or less unparalleled in the history of the Church, and it was an international success with far-reaching implications for the culture of education in Europe in the Middle Ages. One can speak of an explosion of

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[35] Hirsch-Reich 1966, 543-544. A footnote on p. 545 quotes the relevant passage describing the number of strings and body form of the cithara: "*...cuius summa mysterii in tribus superextensis chordis et concavitate consistit*".

[36] Hirsch-Reich 1966, 545.

Franciscan establishments: within sixty years of the founding of the order in 1210, more than 700 convents were operating within Europe.[37]

The original seat of the movement was of course the town where Francis came from, Assisi. Here one of the most beautiful churches in all of Christendom was built beginning in 1228, when Pope Gregory IX laid the foundation on July 16, one day after St. Francis was canonized. The Lower Basilica was finished in 1230 and the Upper Basilica saw its completion in 1253. The iconographic decoration of both Upper and Lower parts of the mother church of the movement includes, as would be expected, many scenes from the life of St. Francis. The replication of various sections of this iconographic program has been well documented in the vast body of modern literature concerning Franciscan art of the Middle Ages and Renaissance, and it is not without reason that more than one modern commentator has referred to, iconographically speaking, the dispersal of "Franciscan propaganda".[38]

Students of music iconography will know the Assisi Basilica for its famous Investiture of St Martin, a fresco series painted by the Sienese artist Simone Martini around 1320.[39] The series includes a depiction of two musicians playing double flute and gittern, with meticulous detail and attention to realism. Even more striking, organologically speaking, is a series of plucked, necked chordophones in the hands of the Elders of the Apocalypse on the transept of the Altar of the Lower Basilica. These are cetre from c. 1310-1315, in total 16 different examples (**CE 15**), somewhat less ornate but just as impressive, in terms of workmanship, as the Martini works found not far away. As if 16 cetre were not enough, two more are found upstairs in the Upper Basilica in a fresco - badly damaged but still of great value for our study - by Cimabue (**CE 10**).

A sharper glance at the entries in the catalog of collected iconographic sources in **Chapter 3** reveals that many more monuments than those just mentioned were produced by Franciscan artists or workshops. The earliest cetra example which has an unequivocal Franciscan iconographical context and a solid dating is **CE 10** (Cimabue, from c. 1280), but the earliest

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37 Loewen 2013, 2.

38 To mention two useful studies, see Blume 1983 and Bourdua 2004.

39 Brown 1985, 256-257, catalog entry 291.

Franciscan source for the instrument in the current catalog is very likely **CE 6** (Vat. lat. 39; see discussion in **Chapter 3**, 225–226), dated in all likelihood thirty or more years earlier. Virtually *all* catalog entries between the mid-13th and mid-15th centuries (**CE 5-26**) in any medium - stone carving, manuscript illumination, fresco, altar panel - can be associated with Franciscan churches, artists, workshops and influence.

There is good reason to associate St. Francis with the cithara, called *cetera* or *cetra* in both 13th c. vulgar and modern Italian usage. As brother Thomas of Celano told the story in his *Vita secunda* (1244-1247):

CAPITOLO LXXXIX

ASCOLTA UN ANGELO SUONARE LA CETRA

Al tempo in cui soggiornava a Rieti per la cura degli occhi, chiamò un compagno che, prima d'essere religioso, era stato suonatore di cetra, e gli disse: 'Fratello, i figli di questo mondo non comprendono i piani di Dio. Perché anche gli strumenti musicali, che un tempo erano riservati alle lodi di Dio, sono stati usati dalla sensualità umana per soddisfare gli orecchi. Io vorrei, fratello, che tu in segreto prendessi a prestito una cetra, e la portassi qui per dare a frate corpo, che è pieno di dolori, un po' di conforto con qualche bel verso'. Gli rispose il frate: 'Mi vergogno non poco, padre, per timore che pensino che io sono stato tentato da questa leggerezza'.

Il Santo allora tagliò corto: 'Lasciamo andare allora, fratello. È bene tralasciare molte cose perché sia salvo il buon nome '.

La notte seguente, mentre il Santo era sveglio e meditava su Dio, all'improvviso risuona una cetra con meravigliosa e soavissima melodia. Non si vedeva persona, ma proprio dal continuo variare del suono, vicino o lontano si capiva che il citaredo andava e ritornava. Con lo spirito rivolto a Dio, il Padre provò tanta soavità in quella melodia dolcissima, da credere di essere passato in un altro mondo.

Al mattino alzatosi, il Santo chiamò il frate e dopo avergli raccontato tutto per ordine, aggiunse: 'Il Signore che consola gli afflitti, non mi ha lasciato senza consolazione. Ed ecco che mentre non mi è stato possibile udire le cetre degli uomini, ne ho sentita una più soave'.[40]

Chapter LXXXIX

THE ANGELIC CETRA HE HEARD

In the days when he was staying at Rieti for the treatment of his eyes, he called one of the companions, who in the world had been a cetra player, and said to him: 'Brother, the children of this world do not understand the divine sacraments. Human lust has turned musical instruments, once assigned to the divine praises, into enjoyment for their ears. But I would like you, brother, to borrow a cetra secretly and bring it here and to play some decent song to give some consolation to Brother Body, which is filled with pain'.

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[40] Italian translation at <http://www.santuariodelibera.it/FontiFrancescane/framevitaseconda.htm> *VITA SECONDA DI SAN FRANCESCO D'ASSISI di Tommaso da Celano; PROLOGO Nel nome del Signore nostro Gesù Cristo. Amen; Al ministro generale dell'Ordine dei frati minori. (*accessed 23.09.2017).
Latin version from Thomas de Celano, *Vita II, Pars II*, Caput LXXXIX, 126: *Diebus quibus pro cura oculorum apud Reate manebat, vocavit unum de sociis, qui fuerat in saeculo citharista, dicens: Frater, filii saeculi huius divina non intelligunt sacramenta. Instrumenta quippe musica, divinis quondam laudibus deputata, in aurium voluptatem libido humana convertit. Vellem ergo, frater, ut secreto citharam mutuatus afferres, qua versum honestum faciens fratri corpori doloribus pleno solatium aliquod dares. Cui respondit frater: Verecundor non modicum, pater, timens ne levitate hac suspicentur homines me esse tentatum. Cui sanctus: Dimittamus ergo, frater, binum est multa dimittere, ne laedatur opinio. Nocte sequenti, vigilante sancto viro et meditante de Deo, repente insonat cithara quaedam harmoniae mirabilis et suavissimae melodiae. Non videbatur aliquis, sed transitus et reditus citharoedi ipsa hinc inde auditus volubilitas innuebat. Spiritu denique in Deum directo tanta in illo dulcisono carmine sanctus pater suavitate perfruitur ut aliud se putet saeculum commutasse. Mane surgens sanctus vocat fratrem praedictum, et narrans ei cuncta per ordinem subdit: Dominus qui consolatur afflictos, numquam me sine consolatione dimisit. Ecce enim qui citharas hominum audire non potui citharam suaviorem audivi.* (*Analecta Franciscana, Tomus X, Legendae S. Francisci Assissiensis*, Florentiae: Ad Claras Aquas, 1926-1941, 204-205). See also Loewen 2013, 32. Loewen mentions the problem of translating "cithara" and correctly criticizes translations that render it as "lute"; he correctly considers the meaning to be "a short-necked chordophone" - although this definition could also mean a vielle - but also offers "harp" as a possibility.

> But the brother answered: 'I would be quite embarrassed to do this, father, for I fear people will suspect me of being tempted to my old levity'.
>
> And the saint said to him: 'Then, brother, let's let it go! It is good to let go of many things to avoid offending people's opinion'.
>
> The following night, as the holy man was keeping vigil and meditating on God, suddenly a cetra was playing with wonderful harmony an extraordinarily sweet melody. He could see no one, but the changes in his hearing suggested that the cetra player was moving back and forth from one place to another. At last, with his spirit turned to God, he enjoyed such delight in that sweet-sounding song that he thought he had exchanged this world for the other.
>
> When he arose in the morning, the saint called the brother in question and told him everything from beginning to end, adding: 'The Lord, who consoles the afflicted, has never left me without consolation. See, since I could not hear the cetre of humans, I have heard a more delightful cetra'.[41]

In addition to Thomas of Celano's version, the tale of Francis' vision was recounted by S. Bonaventura in the *Legenda maior S. Francisci* and in the anonymous *Legenda perusina*.[42] Dieter Blume argued convincingly that there was an *Ordenspropaganda* ("Franciscan propaganda", or fixed and consistent iconographic programming) at work in the decoration of central Italian Franciscan churches, described by another Franciscan historian, Louise Bourdua, as painting which "conformed to set plans engineered centrally by the Order and distributed from the mother house at Assisi."[43] In any case, St. Francis' Vision of the Cetra does not receive its own treatment by artists until well into the 16th c. (it became especially popular in 17th c. Spanish painting and later), and by this time the "cetra" has turned into a

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[41] This is the translation published in Armstrong 2000, 330; my source of the edition is Armstrong 2013, 248. Note that the English translation of Regis Armstrong *et al.* uses "lute" for where the term cetra occurs, referencing a 16th- or 17th-c. shift to translate *cethera* as *lauto* or *liuto*. My thanks to Dinko Fabris for pointing this out to me.

[42] For the *Legenda maior S. Francisci*, see *Analecta Franciscana, Tomus X,* S. Bonaventure Caput V, 11 (p. 581); for the *Legenda perusina,* see Brooke 1970, 24, and Braunfels 1974, 259.

[43] Bourdua 2004, 149; see also Blume 1983.

High Renaissance *chitarra* (four- or five-course guitar) or *violetta* (violin), of no direct relevance to the present study.[44]

The cetra (cithara) was described by the Church Fathers in **Chapter 1** as a humble instrument appropriate to man's lowly place in God's Universe, and many centuries later, music theorist Johannes Tinctoris said it was appropriate for rustics who made their simple music upon it.[45] The cetra was thus a most fitting musical attribute for St. Francis, the saint of humility and poverty. The lute, on the other hand, was an instrument with associations of refinement and courtly splendor, and the gittern (*chitarra*) shared this, plus perhaps even more of an exotic, Moorish fashion.[46] Neither of these instruments is found in Christian iconography of Italian origin much before the 14th c., whereas the cetra can provide multiple earlier examples, invariably of Biblical context.

Gioacchino da Fiore, the 12th c. Calabrian mystic mentioned previously, was embraced by the Franciscans, who considered him a kind of prophet and prefiguration of St. Francis. A second text of Gioacchino, *Expositio in Apocalypsim*, contains (like *Psalterium decem cordarum*) passages commenting upon the cithara, where the author "advances the idea that the true monk possesses nothing except his cithara, i.e. the new man created *secundum Deum* (Eph. 4, 24) or by the operation of the Holy Ghost, while the three strings symbolize, once again, Faith, Hope and Charity."[47] Thus the "monk's cithara" - here prefiguring St. Francis' *cetra* - is an oval-bodied plucked instrument with three strings.

St. Francis was also associated with the concept of *Joculator Domini* or "minstrel-jongleur of God", following a vision he had at San Damiano in 1224. According to the author of *Speculum perfectionis*, while recovering from an eye illness, God told Francis that he would receive greater treasure than all the riches of the world, upon which Francis composed his *Canticum*

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44 Braunfels 1974, 303.

45 Tinctoris wrote, "Cetula tantum uti quosdam rusticos ad eam nonnullas leves cantilenas concinentes choreas quoque ducentes in Italia quandoque comperi" ("I have sometimes known peasants to use only the cittern, singing some light songs to it and also leading dances in Italy", translation from EMT website, http://earlymusictheory.org/Tinctoris/texts/deinventioneetusumusice/#paneo=Translation; Baines 1950, 25, translates the same passage as "The cetula is used only in Italy by rustics to accompany light songs and to lead dance music").

46 See Young 2015 for a discussion of the Arabic association in 14th c. Paris with the gittern.

47 Hirsch-Reich 1966, 544-545.

fratris Solis (Canticle of Brother Sun).[48] He then told his brothers, in particular Brother Pacifico, to go out in the world preaching and singing praises of God (*Laudes Domini*) as *Joculatores Domini; f*or an example of a sacred image of a jongleur with a cetra, see **CE 26** below.[49]

Other references suggestive of the cetra can be found in the medieval canon of the Francis Legend. Chapter CXLVIII of the same *Vita secunda* contains a passage describing the effect that hearing the phrase "amore di Dio" ("the love of God") had upon St. Francis, who immediately became inflamed with excitement as if a plectrum sounded the strings of his heart ("Subito infatti, al suono di questa espressione 'amore di Dio' si eccitava, si commoveva e si infiammava, come se venisse toccata col plettro della voce la corda interiore del cuore").[50]

St. Francis was associated with a second musical instrument, *il corno di San Francesco,* an animal horn which remains in the collection of the Cathedral (Basilica inferiore: Antica Sala Capitolare, containing relics of St. Francis). The attribute of horns on the cetra may be entirely coincidental with the saint's predilection for the *corno*, or perhaps not.[51]

More medieval Franciscans besides St. Francis mention the cetra in their writings. The Franciscan Giuliano da Spira uses the term in a text for a Vespers antiphon to Psalm 150 (*al suono della tromba, del timpano, della cetra, del salterio*) during the first half of the 13th century.[52] The chronicler Salimbene de Adam (1221-1288), another Franciscan, described in his *Chronica* a group of young people performing in a courtyard in Pisa with *cythare*.[53] These two examples illustrate the two sides of the cetra's identity in the 13th c., as Christian symbol but also as a traditional instrument of the population, equally well suited for popular dancing

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[48] Loewen 2013, 57-60.

[49] Loewen 2013, 59.

[50] Regis 2013 op. cit. ftnt. 176, 291; Italian text at <http://www.santuariodelibera.it/FontiFrancescane/framevitaseconda.htm> (accessed 22.09.2017)

[51] The *corno* of St. Francis was included in the iconographical program of the Gubbio *studiolo* (CE 32), showing a clear Franciscan background to the intarsie; see Raggio 1999, 141.

[52] Gamboso, Vergilio, ed., *Giuliano da Spira, Officio ritmico e vita seconda*, Padova: Edizioni Messaggero (1985), 213-215.

[53] Gallo, F. Alberto, article "Salimbene de Adam," Grove Music Online <http://www.oxfordmusiconline.com/subscriber/article/grove/music/24380?q=salimbene&search=quick&pos=1&_start=1#firsthit> (accessed 23.09.2017).

and singing devotional songs, whether as a group in a confraternity, or in a private setting. The cultivation of these *laude spirituali* became closely associated with the Franciscans.

The cetra as a Franciscan iconographical phenomenon is unique inasmuch as it provides the earliest example of a specific musical instrument type with a mendicant Order. The adoption of the cetra by the Franciscans is consistent with the bigger picture of the Christianization of

the cithara over many centuries, that is, it represents a logical step in the process. I will argue elsewhere in this exposition that the rise of the citole hinged upon the dissemination of the proto-cetra, primarily via pilgrim traffic, from Italy to Santiago da Compostella, and that the rise of the citole in Spain and northern Europe was due, as with the cetra in Italy, in no small part, to the Franciscan movement.

That the cetra still carried an implied Franciscan association or heritage into the 16th c. is suggested by the theorist Giovanni Maria Lanfranco in his treatise *Scintille di musica* (Brescia 1533), who refers to it as "that instrument that is called cetra by the Perugians" (*quello instrumento che da Peruggini Cethera e chiamato)*, which specifies a geographically-oriented identity with the province of Perugia, the larger town lying close to Assisi.[54] Lanfranco's work includes extensive material on the instruments of his day, and it participates in the tradition of *inventio* - who first cultivated the instrument - shared by Johannes Tinctoris, Egidius de Zamora, Bartholomaeus Anglicus and others going all the way back to Isidore of Seville.[55]

During the course of the 15th c., the specific context of Franciscan art as the breeding ground of the cetra becomes more diffused. There are still important Franciscan works being created, such as magnificent churches whose decoration includes the instrument (**CE 23**, **25**), but in the 15th c., the cetra presents itself in a new role: as a courtly, refined tool for secular entertainments, rather than exclusively as a symbol of the Church. If one had to summarize Franciscan artistic activity by type with known cetra sources, one might refer to the 13th c. (and first years of the next) as the period of Umbro-Tuscan fresco painting and Bolognese

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[54] Lanfranco 1533, 139; see also Lee, Barbara, *Giovanni Maria Lanfranco's Scintille di Musica and its Relation to 16th C Music Theory*, (diss. Cornell University 1961), 264, where Peruggini is incorrectly understood as a possible reference to a painter.

[55] For references on Tinctoris' treatise, see Footnote 1, p. 13 above; on Anglicus and Zamora, Loewen 2013, Chapters 7 and 8.

manuscript illumination, the 14th. c. as the period of Neapolitan illumination (strongly influenced by Bolognese styles), and the 15th c. as anything and everything - sculpture, painting, wood inlay, woodcuts for print, and miniatures.[56] We would also note the emergence c. 1350 of a new Florentine cetra fashion amongst painters (**CE 19**, **22**) which, assuming these represent a real instrument and not, as musicologist Howard Mayer Brown put it in 1978, "the product of some modern restorer's fancy" or the inventiveness of the painters, deviated from the Perugian model in its markedly rectangular body shape.[57] One of the three sources, **CE 22**, comes (unsurprisingly) from a fresco in the main Franciscan church of Florence, S. Croce. The new variety of Florentine body shapes will receive further discussion in **Chapter 4**.

Physical differences between the Romanesque and Franciscan cetre are subtle, so much so that it might be argued that the three periods outlined in this chapter (Romanesque, Franciscan and Humanist) should be combined into just two, for example Christian and Humanist. Yet three physical features appear on the Assisi cycle (**CE 15**) which differ markedly from Romanesque examples: chromatic frets (on a handful of instruments), frets with a triangular profile, and inlaid roses. When we add to these the new developments in musical repertory (chromatic pitches, for example) and new focus on Franciscan iconography, the separation between Romanesque and Franciscan seems well-justified.

Franciscan connections to individual sources will be noted in each Catalog Entry in **Chapter 3** as applicable, and will come up again in discussions related to sources found outside of Italy. Music theorists, such as Bartholomaeus Anglicus and Egidius de Zamora (both 13th c.), and music schools, naturally, also participated in the movement. Concerning the latter, Paris was a Franciscan stronghold of clerical and university educators of all kinds, including music: "Among the music schools of the order, Paris must be singled out as superlative, blessed and supported by Haymo of Faversham and Giovanni da Parma, including Julian von Speyer."[58] It is there we will encounter elements in music theory sources that may bring weight to arguments concerning the identity and tuning of our Italian instrument in the 14th c., but for

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[56] For bibliographic references to Bolognese and Neapolitan manuscript illumination, see individual Catalog Entries.

[57] Brown 1978, 131.

[58] Schmidt, Hans, article "Franziskaner, Geschichte" MGG Online, < https://mgg-online.com/article?id=mgg15395&v=1.1&q=salimbene&rs=id-80a59d8b-1a19-1675-a1cf-51b18f5283a0> accessed 23.09.2017

now we shall move on to the third and final phase of the evolution of the cetra, which will "fix" the instrument in a number of ways vital to what it becomes by the mid-16th century.

2.3 The Humanist Muse

The cliché of "The Renaissance" is perhaps the best-known concept since the 19th c. which has been associated with European history. The re-birth or re-discovery of an earlier, purer Golden Age is in fact a premise of Christianity: Man enjoyed a much better existence, without suffering, long ago - for a while at least - in the Garden of Eden. He always must strive to go back to a better culture, a happier time. He can conduct himself, with God's grace and mercy, in such a way during his earthly sojourn that finally, upon death, he can return to a better existence without suffering and pain.

Indeed, the usefulness of the term "Renaissance" in the study of European history has been vigorously debated since the 19th c., and rightfully so. Historian Charles Homer Haskins published *The Renaissance of the Twelfth Century* in 1927, while scholars such as Lynn Thorndike debated whether or not one could speak of a Carolingian Renaissance.[59] In truth, every century since the Carolingian period (before, in fact) looked to the distant past for ancestral Authority, as the most fundamental condition of any literate culture. The earliest body of material came from the Greeks and filtered into Roman culture, hence Greco-Roman learning representing the *other* authority, besides Scripture, already from the time of the Church Fathers. This continued, as a world view, throughout the entire Middle Ages and on through to the so-called Enlightenment.

The on-going process of looking back represents a continuing dialectic between the old and the new, which has carried many cultures through many centuries of Western European civilization. When that dialectic takes the form of anything formally "created", whether a painting, poem, musical composition or piece of constructed furniture, it becomes a thing, a story, an argument, i.e., a manifestation following the Greco-Roman discipline of Rhetoric. We call such a creation "art".

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[59] Haskins, Charles Homer, *The Renaissance of the Twelfth Century*, Cambridge: Harvard University Press, 1927; Thorndike, Lynn, "Renaissance or Prenaissance?", *Journal of the History of Ideas* 4 (1943), 65.

Although the term *ars nova* (new art) is commonly used in medieval music history to denote a new kind of early 14th. c. mensural notation (as opposed to the *ars vetus*, older notation of previous decades), a perception of change was increasingly in the air by the late decades of that century. Dramatic, catastrophic shifts in society, religion and nature were afoot: France and England were locked in the devastating and seemingly endless Hundred Years War, the Church had ruptured into opposing divisions with multiple popes, each claiming Heavenly Authority, and the population was decimated swiftly, and without rhyme or reason, by the dreaded Black Death. As if this were not enough, terrible earthquakes wreaked havoc by destroying urban structures of all kinds in multiple cities in Europe.[60]

Faced with uncertainty and abandoned to Fortune, some, like the Tuscan poet Petrarch (1304 - 1374), took refuge in ancient learning and philosophy. When the distinguished Greek scholar Manuel Chrysoloras was contacted in 1395 by Coluccio Salutati, Chancellor of Florence, about teaching Greek literature and grammar in that city, Salutati's invitation paraphrased Cicero, stating that the Romans either made wiser innovations than those of the Greeks, or they improved on them, at the same time conceding the superiority of the Greeks in culture and the Romans in war. The Florentine's personal opinion, he wrote, was that both Greeks and Latins had always taken learning to a higher level by extending it to each other's literature. Chrysoloras subsequently became the first important teacher of Greek in Italy, functioning as a stepping-stone into the period of Humanism.

The same fascination with ancient authorities which the writing of Petrarch had displayed was at hand in the education and artistic work of the painter Gentile da Fabriano (c. 1370-1427).[61] It is during his lifetime that the cetra begins to manifest a new identity which can be seen on different levels, including (1) for the first time, a non-Christian iconographical setting of Classical Antiquity, (2) a hitherto unseen literary context, also inspired by Antiquity, of laudatory poems and chronicles praising performances of contemporary poets, musicians and

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[60] For one account of events in the 14th c., see Tuchmann, Barbara, *A Distant Mirror: The Calamitous 14th Century,* New York: Ballantine (1978).

[61] Gentile da Fabriano was considered in the 16th c. to have been "the first painter in whom was born the wonderful style which is today in flower" (Francesco Bocchi, *Le bellezze della città di Firenze,* 1591); see the discussion in Hourihane 2012, 657: "The association (by Bocchi) of (Gentile da Fabriano's) *Adoration of the Magi* with the Renaissance revival of antiquity challenges the view first articulated by Alberti that identifies the founding of this revival with Filippo Brunelleschi (1377-1446), Donatello (1386/7-1466), Lorenzo Ghiberti (1378-1455), Masaccio, and Luca della Robbia (1399/1400-1482)."

statesmen, and (3) new physical features corresponding to the morphology of the ancient cithara. These new components were both structural and decorational, and will be looked at in depth in **Chapter 4**. They include lengthened frets, tapering body depth (becoming shallower toward the bottom end), a projecting point ("tooth") at the back of the peghead, metal as a string material, string number and tuning. These novel features shall be further discussed in **Chapter 4**. With new features came perhaps a new way of building the instrument, so-called built-up construction, as opposed to the traditional one-piece, carved-out method. It was a logical step for a new kind of cetra, or better said, a newly-re-invented kind of instrument.

The accessibility of ancient works, whether in word or in stone, became a major engine behind creative endeavour in the Quattrocento. The culture of editing, i.e., translating, works of important philosophers such as Aristotle from the Greek, had been the driving force, already since the "Renaissance of the Twelfth Century," of intellectual pursuits in Western Europe. In addition to transmitting a multitude of aspects of Classical world view, a handful of sources gave details concerning the form of the cithara. These, again, were of two kinds, text and image.

Whereas the history of the cetra, through the proliferation of the Franciscans during the 13th and 14th centuries, had been a clear process of Christianization that had begun many centuries before the mendicant order, under the influence of Humanist culture, the instrument took on elements that were understood to reference the cithara of Antiquity. From the later 14th c, we may speak of a "Classicization process": the instrument's Christian identity is exchanged, so to speak, for an "enlightened Antique" one.

The elements of transformation are subtle and they are easily missed. Pietro d'Abano's commentary *Expositio problematum Aristotelis* is the earliest discussion in the Middle Ages of the music of ancient Greece. D'Abano was "a figure who, though somewhat outside the period of the Renaissance as usually defined, was imbued with the spirit of philologic humanism....his commentaries enjoyed some diffusion in the fourteenth century through manuscript copies, but it was through their publication together with an older translation that they exerted a decisive influence on musical thinkers in the Renaissance."[62] The treatise

[62] Palisca 1985, 51.

of D'Abano underscored the importance of the *cythera* as a fundamental instrument of the Classical world, having four strings, upon which the basic consonances of music could be demonstrated.[63] He was "a professor of medicine, philosophy and astrology both at Paris and at Padua, whose writings established a solid tradition of teaching within Italian universities."[64] And what began with D'Abano's Aristotle commentary gathered momentum, in terms of interest in Classical writings and art works, with every passing decade of the Quattrocento. By the later 15th c., a first-hand knowledge of existing Roman artifacts was standard equipment for any serious artist.

One artist, active from c. 1480-1525, rose above all others in terms of bequeathing us with major contributions for the history of the Humanist cetra. Fra Giovanni da Verona, a true genius of wood-carving and wood inlay, left three *intarsie* and one relief carving depicting a cetra in detail. Among other churches, he was famously associated with Santa Maria in Organo in Verona. Here we find one *intarsia* and one relief carving of the master, but two other cetra images from Santa Maria in Organo bring the total to four, with a fresco by Domenico Morone, and a miniature painted for a choir book by Morone's pupil Girolamo Dai Libri. The variety of mediums featuring cetra images is unmatched from any other single institution: wood inlay, wood relief carving, fresco and miniature, all works of impressive detail and character done for one Olivetan church in the town of Verona.

The early training and activity of Giovanni da Verona included a period of work in Perugia 1480-1484 (Felicetti 2005). We can assume that Giovanni had closely studied and absorbed the panel inlay work he would have seen in the Umbrian city of Gubbio at the renowned *studiolo* of the ducal residence there, including the cetra (**CE 32**). He would have undoubtedly encountered the same instrument in the Cimabue fresco at San Francesco in Assisi (**CE 10**). To the west of Umbria, his association and work at Monte Oliveto Maggiore is attested by two cetra inlays. Whether his preference for the instrument influenced his Verona colleagues Morone and Dai Libri in their work, we cannot say, but Morone's fresco (**CE 37**) in Santa Maria in Organo clearly agrees in all details with Giovanni's *intarsia* in the same church. A decade after Giovanni's cetra carving was made in Verona, the music theorist Lanfranco, from

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[63] Page 1986, 149.

[64] Pieragostini 2006, 199.

the neighboring town of Brescia, called the cetra the instrument "of the Perugians". Perhaps for Giovanni, there was also an association of the cetra with the heart of Franciscan Italy.[65]

There is no clear line of division between the Franciscan cetra of the 14th c. and the Humanist cetra of the 15th, as there is no clear source in the catalog which can claim to be the first cetra displaying new traits. One reason for this is a total lack of iconographical sources for perhaps three decades, c. 1380 - c. 1410, as well as a dearth of sources before this, especially sources showing clear details.

Still, it may be valid to consider **CE 20** as a candidate manifesting a Humanist influence, or more accurately, occupying a Humanist context. The cetre found in the miniatures of this source are used to illustrate the Tragedies of Seneca (copied at the court of Giovanna I in Naples before 1382), making this the first time the cetra is depicted as an instrument in a Classical text. The new physical traits of the instrument appearing during the second half of the 14th and first half of the 15th c. could include a carved head at the end of the peg-head, kollopes-frets, and metal strings (see **Chapter 4** for a close look at all of these features). **CE 20** clearly shows only one of these features, the carved head; the string material in any case would not be determinable from the miniature. **CE 17**, a tiny image and like **CE 20** of Neapolitan provenance, apparently features a carved head, a number of decades before **CE 20**.

The Seneca manuscript has eluded a precise dating in modern research, and is said to be from the second half of the 14th c., presumably before Giovanna I's death in 1382 .[66] A second monument should not be excluded as having been painted in the last few years of the 14th c., although the church in which the fresco stands was completed only in 1390. This source, **CE 23**, has kollopes-frets and an incurved lower bout tapering into a prominent base, slightly suggestive of the Mattei sarcophagus carving in Rome (**Pl. 117**); whether the cetra in **CE 23** has a carved head is impossible to say from the photo obtained. The next chronological source displaying any of the new features is **CE 21**, with its kollopes-frets. Head carving, neck hook and string material are all indiscernible. With a dating range of 1408-1412, it gives us the earliest 15th-c. example with any Humanist features.

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[65] Giovanni da Verona was not a Franciscan but a Benedictine friar.

[66] Lenzo 2011, 157.

With the source **CE 24** (Luca della Robbia, 1430's), the Humanist cetra has fully arrived. The carved head, kollopes-frets and broad base are all found on the two cetre carved by Della Robbia on this monument, a work which has been aptly described as displaying "a profound understanding of antique art, which Luca studied in Pisa and perhaps also in Rome".[67]

The sources **CE 20**, **21, 23** and **24** are four chronicles of changes for the cetra, in both identity (Classical context) and form. All of these sources except **CE 23** were either executed in Florence, or have a connection with Florentine artists. Whereas in its Franciscan manifestation, Umbria-Perugia-Assisi were central places geographically for the cetra, Florence assumed a primary position for the rise of the Humanist cetra - which will come as no surprise to students of Humanism and that city.

Our journey's immediate destination, in the next chapter (**Chapter 3**), is to view the iconographical monuments comprising the cetra database. **Chapter 4** will show, part by part, how the heritage of the ancient kithara manifested itself through the modern one. The morphological developments that manifested themselves in the form of the Humanist cetra were dramatically different from the Franciscan era.

2.4 Chapter Summary: Main Points

1. The Byzantine fashion of bowing manifested itself in Italy c. 1000 with short-necked instruments played at the shoulder and with lyres. The popularity and novelty of these forms gave an impetus to the development of a related instrument which was plucked, which could be called a proto-cetra. Its affinity with its bowed cousin will continue all the way into the 16th century, as shoulder-played instruments of the late 15th and early 16th c. manifest pointed shoulders and cetra-style peg-heads.

2. The Hamilton Psalter, using copy models from the second half of the 11th c. for manuscript illumination done at a Vallambrosian monastery in the region of Florence or Fiesole in the second half of the 12th, shows a clear prediliction for short-necked plucked chordophones with horns, which four out of six illuminated

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[67] Gentilini 2003.

cetre feature. One of the others (**CE 3b**) shows a clear heritage from the Byzantine pandura.

3. By the time of Guido d'Arezzo c. 1000, there were signs from music theory sources that the *citara* or *cythara* was associated with a necked chordophone. These included the development of horizontal staff lines representing the horizontal playing position of the strings, mentions of the instrument in treatises such as Micrologus, and iconographical use of the instrument in music theory illustrations (**Pl. 50**). Additionally, a 12th c. commentary of Gioacchino da Fiore describes the cithara as "a stringed instrument with a pear shaped body and three 'general' strings". The cetra in this period could thus be described as "la cetra romanica",

4. In the 1220's Francis of Assisi has a vision of hearing an angel playing a cetra, and the success of the Franciscan mendicant order also fosters the cetra in Franciscan iconography, which is why there is a relatively high density of monuments showing the instrument in Umbria. It must also be the reason why Giovanni Lanfranco, writing much later around 1530, identifies the cetra with the Perugians. Even the description of the cetra by Johannes Tinctoris, written during the 1470's, evokes the classic Franciscan humility identified since the time of Francis with the instrument: it is, he says, played by "rustics".

5. The rise of Humanism, following Petrarch, ushered in a new, third phase for the cetra, a moment of its re-invention. New features appeared, such as over-long frets and metal strings, along with a new constructional method of joining parts which had hitherto been carved out of a block of wood by glueing them together. The instrument's sound and color were by now very different from a century or two earlier, and it, along with the *lira da braccio*, enjoyed popularity as instruments which specialized in accompanying improvised sung poetry.

CHAPTER 3 - Catalog of Sources in the Visual Arts c. 1100 - c.1535

Objective:

The objective of the catalog is to collect any visual source, or record thereof, containing an image definable as a cetra. The following is a list of criteria which an image may present to qualify for inclusion in the catalog:

- Plucked instrument; the absence of a bow is requisite, but may not prove, finally, how the instrument is played.
- Spatulate or ovoid body form.
- Presence of horns on shoulders following standard models; exceptionally without.
- Strings attached at body end to projection or base.
- Peg-head with frontal pegs; exceptionally: lateral, if so, with carved head.
- Sound-hole with rosette, or circle of small holes; exceptionally: curved holes as pair.
- Normal frets or kollopes-frets; exceptionally unfretted.
- Neck length does not exceed resonator length.
- Back of resonator is flat or keeled.
- Depth of resonator uniform; during the 15th-16th c. some examples feature shallowing depth toward bottom of resonator.
- Presence of plectrum; exceptionally without.
- Iconographical identity: Italian provenance, varying according to period and context.
- Instrument can be excluded to be a lute or a gittern.

Authenticity and Dating:

A cautionary remark is in order regarding authenticity. The images of musical instruments to be interpreted in this study are found in different kinds of artifacts such as sculptures, relief carvings, painted panels, frescoes, manuscript illumination and printed images. The first four of these medium types are more often subject to conservator intervention than the last two. To assess with confidence whether an item has been restored or not, and if so, to obtain access

to reliable information about the nature of the restoration, can present a major challenge. Any restoration is of course an interpretation in itself, and may follow national or regional schools of practice, as well as period fashions. A restoration or series of restorations may alter structural details of an artifact quite radically, or not at all. While it has not been practically possible for me to unearth every detail of every historical stage of every restorative process for every item in the catalog which has in fact undergone restoration, whether known to us or not, I have taken pains to find out the relevant background for a number of central works which I regard as milestones in cetra history.

It is worth underscoring that, regarding the limited number of catalog sources reliably datable to the Romanesque, and in some cases later periods, manuscript illumination will generally provide untampered data, whereas frescoes and paintings may be more liable to have undergone some kind of restorative work unknown to the viewer.

The problem of dating an entry in the catalog will also be briefly touched upon here. Because a majority of sources present a 'best guess' situation in establishing a precise date of origin, recent art historical literature has been consulted and used wherever possible, and multiple opinions have often been included to present a cross-section of opinion. All catalog entries have been listed in chronological order, with full awareness that subjective opinion on matters of dating has been of relevance to the list.

Reservations:

Concerning catalog entries, inevitably there have been sources considered for inclusion which are questionable in terms of fulfilling the criteria looked for as outlined above. Appendix I presents instruments which may be relevant to the cetra in some way, but which themselves are clearly not examples of that instrument. Other cases are less straightforward, as the following examples of entries in the Catalog may illustrate:

CE 2: A fresco series situated today in France but of Catalan culture, these may well be bowed instruments without their bows, for none is actually being played. Their similarity with **CE 4** and Roman-Byzantine heritage seem to justify inclusion in the catalog.

CE 11: Vielles without bows? The same artist (Jacopino da Reggio) painted a cetra in **CE 12**, much larger than these tiny images, so the cetra is at least known in his work.

CE 23: The lute-style peghead is obviously problematic, but see comments in the text of the entry.

KEY: Catalog Entry Terms / Definitions

Location: Current location of monument / artifact.

Medium: Type of artifact.

Dating: Date of object according to publication reference.

Artist: Artist or workshop.

Provenance: Association with place and time for artistic style / influence.

Iconographical context: Iconographical theme.

Number of cetre: Number of images, within the work, of instruments with salient cetra features, including evidence of oval or spatulate body, shoulder horns, articulated projection at lower body end, flat peghead of roundish or mutiple-sided form, wooden frets (also in block form), general neck length not significantly longer than body length (often shorter), strings attached at end projection. In exceptional cases, images with just one or two of these features have been included in the catalog, with accompanying comment.

S***ize:*** Approximate actual size of cetra image(s) where measurement has been possible. If blank, measurement unknown to this study.

Comments: May further elaborate upon any of the terms given above, but will more typically point out relevant organological points of interest specific to the image(s).

BibliographyA: Modern publications which discuss the object within the context of art history; a complete art history bibliography would fall outside the scope of this dissertation.

BibliographyM: Modern publications which discuss the object within the context of music history.

CE (Catalog Entry) Number	Object	Page
(c. 1080 - c. 1200)		
1	Vat. lat. MS Barb. lat. 587	176
2	Master of Fenollar	181
3	Hamilton Psalter	192
4	Anagni Elders	207
(c. 1200 - c. 1300)		
5	Parma Baptisterium	236
6	Vatican lat. 39 MS	240
7	Breslau Psalter	247
8	Ferrara Duomo	253
9	Puy-en-Velay	270
10	Cimabue Assisi	274
11	Bible of Clement	280
12	Smith-Lesouëf 21	283
13	Escorial Bible	287
(c. 1300 - c. 1400)		
14	Giotto Scrovegni	290
15	Assisi Elders	294
16	Clement Bible	315
17	Geneva Bible	319
18	Vienna Bible 1191	322
19	Giusto de' Menabuoi	325
20	Seneca Naples MS	330

(c. 1400 - c. 1500)

21	Gentile da Fabriano	339
22	Lorenzo di Niccolò	344
23	Galatina	348
24	Luca della Robbia	353
25	Rimini	359
26	Ortona	373
27	Padova choir stall LOST 1462	378
28	"E H" LOST 1462	379
29	Tarocchi	381
30	Schifanoia	387
31	Cortona	393
32	Gubbio	397
33	Dai Libri V-A	405
34	Sforza Book of Hours	411
35	Tolmezzo	415
36	S Maria in Organo *intarsia*	418
37	S Maria in Organo fresco	426

(c. 1500 - c. 1535)

38	Girolamo di Benvenuto Montalcino	431
39	Monte Oliveto Stall 18	437
40	Lo Spagna	446
41	Villa Sormani	451
42	Luini Brera	454
43	Monte Oliveto Stall 10	459
44	Selva Convento Benvenuto	465
45	Giulio Campagnola 'Daphnis'	468
46	L'Aquila	473
47	S Maria in Organo carving	478
48	Torrita di Siena 1525	485
49	Dai Libri S Giorgio Verona 1526	489

50	Lugano Luini 1529	495
51	Saronno Ferrari 1535-36	498
52	Wien *Cassone*	508

CE 1

CE 1

Location: Roma, Biblioteca apostolica vaticana, Barb. lat. 587, f. 194 (Bibbia di Santa Cecilia Trastevere).

Medium: Miniature

Dating: c. 1080, possibly 1073? (Ayres 2004); last quarter 11th c. (Tomei 1999).

Artist: Anonymous

Provenance: Rome? (Supino Martini 2000; Ayres 1993, 2004); S. Salvatore di Monte Amiata or nearby (Gorman 2002; Yawn 2010).

Iconographical context: Byzantine - Romanesque. David and musicians, musician Ethan with relevant instrument. David's lyre is also of interest regarding animal horn arms, indicating probable Roman heritage.

Number of cetre: 1

Size: 3.6 cm

Comments: Important early source for spade-shaped, short-necked plucked chordophone in Umbro-Roman context, especially to establish confidence in positing the presence of the proto-cetra in Umbro-Roman Italy in the 11th century. Note plectrum tether (see comment under **Plectrum** in **Chapter 4**).

One of the so-called "Italian Giant Bibles," all of which, according to Ayres, were copied from a common source "most likely in Rome" (Ayres 2004, 20). This is the so-called "Lateran" origin theory for these 11th-century bibles, which accordingly places their production under the influence of the rule of Pope Gregory VII (1073-1085); there is an extensive bibliography in art history research supporting the theory, which includes Ayres and Supino Martini as supporters. See Schapiro 1964, 42, for a brief account of this period of the influence of

Byzantine art in Italy, specifically via the sphere of Abbott Desiderius in Monte Cassino (1057 - 1087).

Other researchers such as Lila Yawn and Michael Gorman have argued strongly for S. Salvatore di Monte Amiata (or vicinity in southern Tuscany / western Umbria) as the place of origin for the early Giant Bibles.

BibliographyA: Schapiro 1964, 41-43; Berg 1965, 167-176; Cahn 1982; Ayres 1993/94; Tomei 1999; Martini 2000; Ayres 2004; Yawn 2011.

Bibliography M:

CE 1

CE 1

CE 2

CE 2

Location: Fenollar, Sant Marti de Fenollar (Chapel of St. Martin of Fenollar).

Medium: Fresco

Dating: c. 1120-30 (Pagès 2013, 50); elsewhere 12th century (Princeton Index).

Artist: Master of Fenollar

Provenance: "Mainly inspired by the art of early Christian Rome and that of Gregorian reform, yet also by Byzantine sources and by Lombard and Germanic prototypes" (Pagès 45); Stylistic similarity with Anagni (**CE 4**).

Iconographical context: Elders of the Apocalypse; originally there were seven Elders on each of the two side walls, and two on each side of the window at the end, making a total of eighteen Elders.

Number of cetre: 10 in various states of preservation, with a remaining 8 originals lost.

Size:

Comments: This is the only example in the catalog of a proto-cetra fresco outside of Italy, with cornered shoulders, articulated string holder at the bottom of the body, frontal pegs, soundhole(s), absence of bow. Elders 5 and 4 on the left wall hold instruments with smallish shoulder projections. See comment of Pagès on provenance (Pagès 2013).
For comment on the Elders holding the instruments upside down, see Footnote 172.

BibliographyA: Pagès 2013; Ponsich 1974.

BibliographyM: Panum 1940 (1915); Winternitz 1979, Pl. 11.

Photos: http://www.romanes.org/Fenollar/Saint-Martin_de_Fenollar_0042.html

Placement of Elders in Chapel

(Left: Elders 9 - 3) (L. front: E 2 - 1) (R. front: E 1 - 2) (Right: E 3 - 4)

All of the Elders are painted on the left and right walls, as well as the front wall with the window, at a level slightly higher than the window. The seven on the left are more or less intact, but those on both sides of the window are entirely missing below the heads, with the exception of the second Elder on the right, whose instrument is visible. The first two Elders on the right wall are intact, the rest are by and large gone.

CE 2

Left wall: Elders 9 - 6

CE 2

Left wall: Elders 5 - 3

CE 2

Left wall: Elder 3, left front wall: Elders 2 - 1 (partly missing).

CE 2

Right front wall: Elders 1 - 2, (partly missing); right wall: Elder 3.

CE 2

Right wall: Elders 3 - 4 (5 - 9 missing).

CE 2

Right wall, Elder 3, detail.

CE 2

Right wall, Elder 4, detail.

CE 2

Left wall, Elder 3, detail.

CE 3

sunt contra eos lingue eorum. Omnis homo.
Conturbati sunt omnes qui videbant eos. et timuit
et annuntiauerunt opa dei. et facta eius intellexerunt.
Letabitur iustus in domino et sperabit in eo. et archol.
od ludebat ante archa
percus
so
iocia
domino.
laudabuntur omnes recti corde Oratio.
Tuela omnium credentium deus. custodi ecclam tuam

CE 3

Location: Berlin, Kupferstichkabinett, 78 A5 ("Hamilton Psalter").

Medium: Manuscript miniature

Dating: Copied c. 1175 (Kupferstichkabinett's official description of manuscript, 2017); Miniatures copied from a north Italian model or models probably from the second half of the 11th c. (Augustyn 1989, 119).

Artist: Unknown. In my opinion, after examining the manuscript on 07. 03. 2017 and without going into lengthy arguments, there were at least three different miniaturists. Artist A was responsible for the opening miniature with King David playing a harp. Artist B was responsible for the large majority of miniatures in the manuscript, including all six images of chordophones. Artist C worked perhaps somewhat later than A and B and did the miniatures on folios 71r, 84r and 96v, which show a distinctly more vibrant use of colors and shading which seems to foreshadow stylistic aspects of the 13th-c. Bolognese school of illumination.

Provenance: Vallombrosian monastery in the region of Florence or Fiesole (Augustyn 1989); Toscana or north Italy (Kupferstichkabinett 2017); possible Italo-Byzantine influence (Schapiro 1964).

Iconographical context: Psalter illustrations

Number of cetre: 6

3a: f. 40r
3b: f. 50r
3c: f. 55r
3d: f. 88r
3e: f. 94v
3f: f. 125r

Size: 3a: 3 cm
3b: 3.8 cm
3c: 2.7 cm
3d: 2 cm
3e: 2.5 cm
3f: 2.1 cm

Comments: An important source which may be considered to be the earliest group of instruments carrying the main features of Antelami's early cetra (see **CE 5**), with the exception of large wooden frets. The nearest any of these instruments come to showing frets is **3b**. While **3b** shows fingerboard markings which seem mainly of decorative significance, rather than having any real functionality as frets, **3a** shows a fingerboard which widens slightly before the narrower peg-head joint. As if to emphasize the distinction between fingerboard and peghead, the artist has playfully colored the peg-head green to match David's garment. The apparent discrepancy in width between the end of the fingerboard and the peg-head joint might suggest that the front surface of the peg-head is slightly angled back and not on the same plane as the fingerboard, although this is inconclusive.

3b, with its long neck, displays a certain resemblance to the surviving Byzantine instruments, and is in this regard unique in the group of chordophones in this manuscript. It may suggest that multiple sources, some quite archaic, others more recent, were used as models for the miniatures.

BibliographyA: Augustyn 1989; Augustyn 1996.

BibliographyM:

3a

auuo de se onō clamat q
thara domino canat.
fontem petu luminis

3a

3b

3b

3c

sunt contra eos lingue eorum. Omnis homo.
Conturbati sunt omnes qui videbant eos. et timuit
Et annuntiauerunt opa dei. et facta eius intellexerunt.
Letabitur iustus in domino et sperabit in eo. et omnes
dō ludebat ante archā
pcus
so
ioca
dnō.
Laudabuntur omnes recti corde. Oratio.
Tutela omnium credentium ds. custodi ecclam tuā

3c

3d

Misericordia autem domini ab eterno et
usque in eternum super timentes eum. Et
justitia illi in filios filiorum
testamentum eius. Qui
Et memores sunt mandatorum
Dominus in celo paravit sedem
ipsius omnibus dominabitur
Jhs xps.
celis bndi
ca uno rex
ange
lus dic
bndicte
re deum.
Benedicite domino angeli eius
facientes verbum illius.
sermonum eius. Qui
Benedicite domino omnes
Benedicite domino omnia

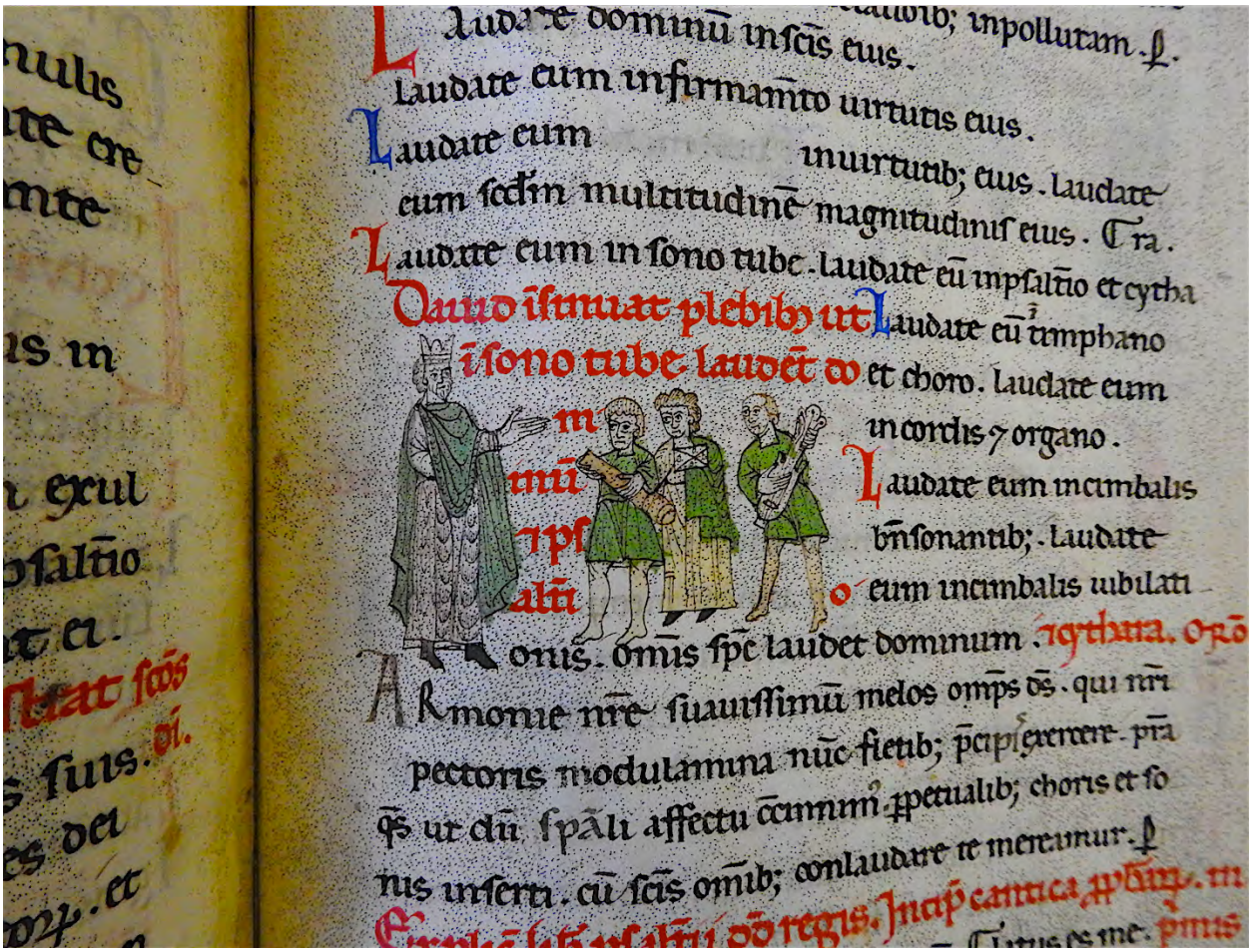
3d

3e

Exaltare sup celos ds
Dauid rex dñi loc
ut liberentur dil
Saluum fac dextra

3e

3f



Laudate dominum in sanctis eius.
Laudate eum in firmamento virtutis eius.
Laudate eum in virtutibus eius. Laudate
eum secundum multitudinem magnitudinis eius. Tra.
Laudate eum in sono tube. Laudate eum in psaltrio et cytha
Laudate eum in tymphano
et choro. Laudate eum
in cordis & organo.
Laudate eum in cymbalis
bene sonantibus. Laudate
eum in cymbalis iubilationis.
Omnis spiritus laudet dominum.
Harmonie mire suavissimum melos omnipotens. qui mirabili
pectoris modulamina nunc fletibus, nunc exercere. pra
ecipis ut cum spiritu affectu cum mente perpetualibus choris et so
nis inserta. cum sanctis omnibus conlaudare te meremur.

3f

CE 4

CE 4

Location: Anagni, Cattedrale di Santa Maria Annunziata, Cripta di San Magno.

Medium: Fresco

Dating: c. 1180-1220? Problematic. Varying opinions have placed the frescoes as early as c. 1100 (among others: Klein 1992, 180-181: "The Anagni crypt frescoes have been traditionally assigned to the middle of the 13th c., but recently these frescoes have been dated with good reasons in the time around 1100;" see also Boskovits 1979) and recently as late as 1237 (http://www.sacred-destinations.com/italy/anagni-cathedral; accessed 08.01.2018). Also compare Kottman 2007 (17, footnote 39): "Ein Extrembeispiel der Fraglichkeit von Datierungen bieten die Wandmalereien des 'ersten Meisters' der Krypta von Anagni, deren zeitliche Eingrenzung von 1104 als Terminus ante quem und 1231 als Terminus post quem variiert."
The dating offered above (c. 1180-1220) is based on three things, an overview of published research, a comparison of the instruments with other sources, and a helpful private conversation in December 2017 with researchers currently working at the Cathedral, in particular, Davide Angelucci, to whom I am most grateful.

Artist: Anonymous workshop? According to the website listed above, without specific reference, the frescoes were painted "by Friar Romanus, who also painted the frescoes at San Benedetto in Subiaco, and two other unknown masters."

Provenance: Byzantine - Romanesque influence. If a late dating is accepted for the work (1220's or 30's), the question of a possible Franciscan influence on the *citharae* should be further examined, also in light of the general stylistic similarity with San Benedetto in Subiaco, where Franciscan iconography is present.

Iconographical context: Elders of the Apocalypse, in two groups, left (12) and right (12).

Number of cetre: 24 total, in two groups of 12 each (Elders on left = L, Elders on right = R), instruments labelled a, b, c etc. from left to right in each group.

Size: c. 25-35 cm

Comments: Frescoes underwent restoration in the late 1980's and early 1990's. A comparison with earlier photos shows very little intervention in terms of instrument details.

All cetre are three-stringed, and this is the only fresco which I have seen which uses wavy lines to depict musical strings which vibrate. Many instruments, especially in the Elder group on the left, have a small bridge-tailpiece and end projection. Cetra **4R-i** (see reproduction below) may have small horns on its shoulders, although this is not unequivocally clear.

This source is important, showing instruments are in three distinct types - oval, square-shouldered and slight-waisted with four c-shaped sound-holes. Spade-shaped, short-necked instruments with defined shoulder points, some with end projections, are of particular relevance. The oval resonators seen here are similar in form to the surviving lute body c. 1000 from Corinth (**Pl. 49**).

BibliographyA: see above under ***Dating***.

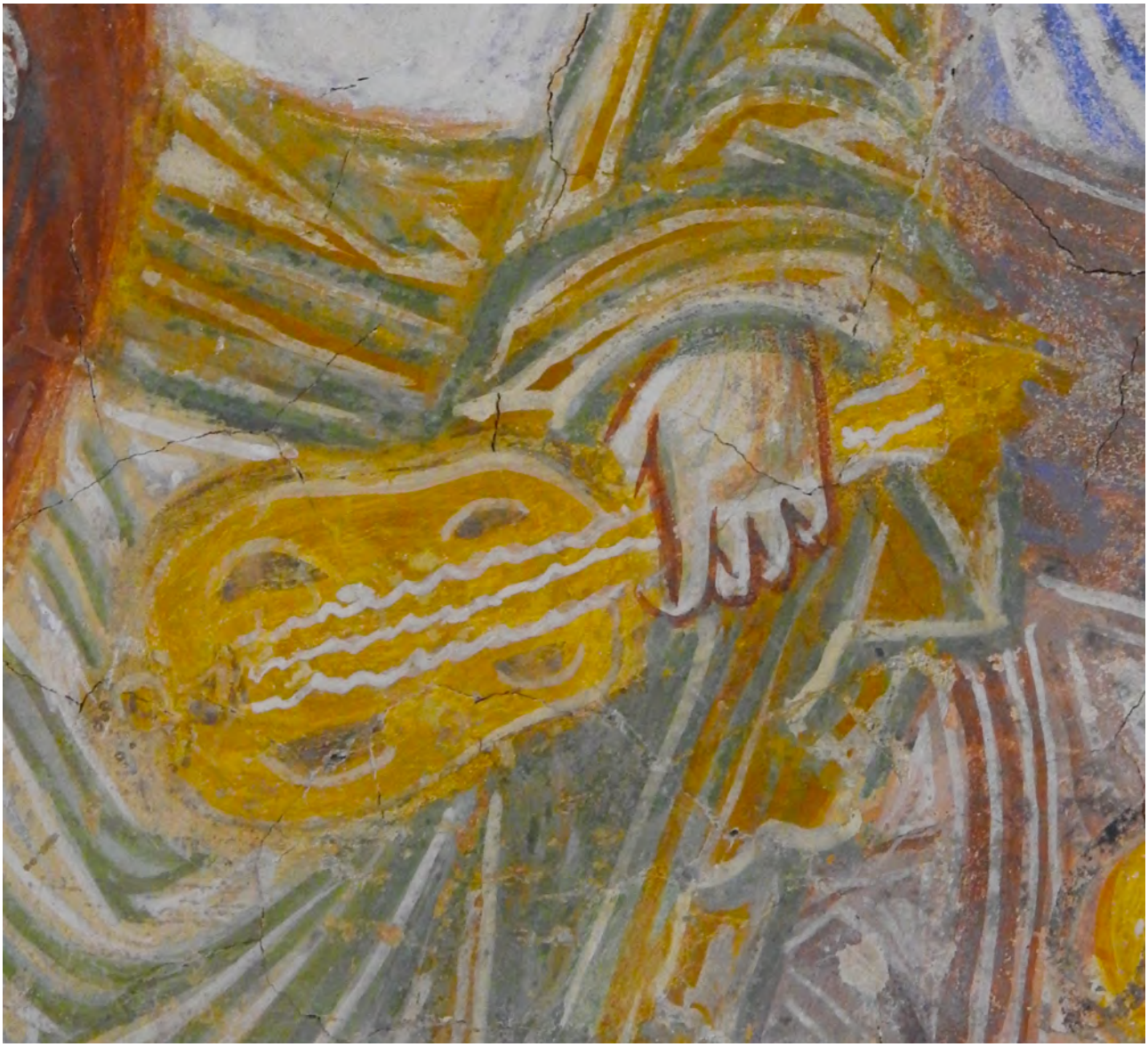
BibliographyM:

CE 4L (Group)

CE 4R (Group)

4L-a

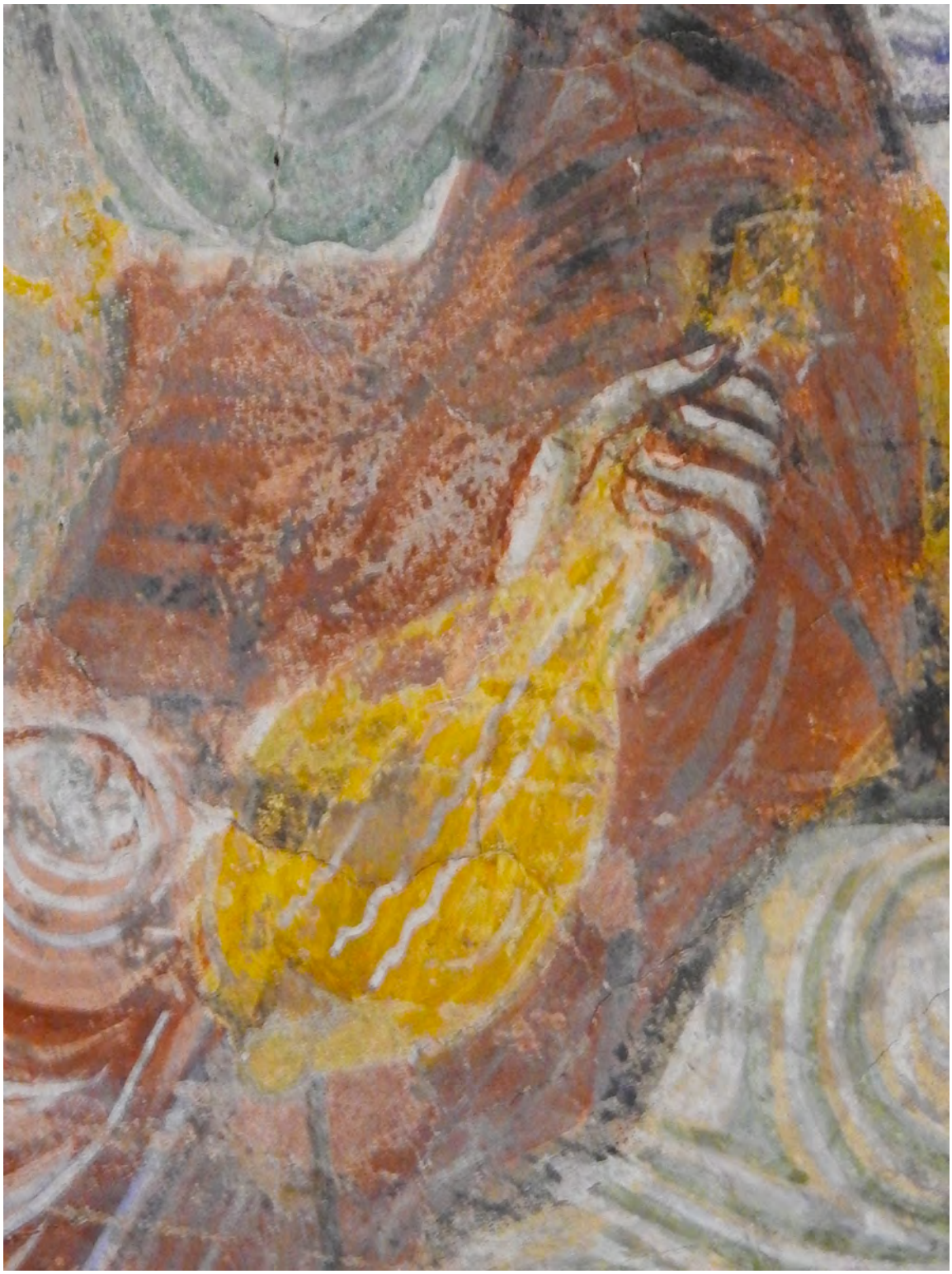
4L-b



4L-c

4L-d

4L-e



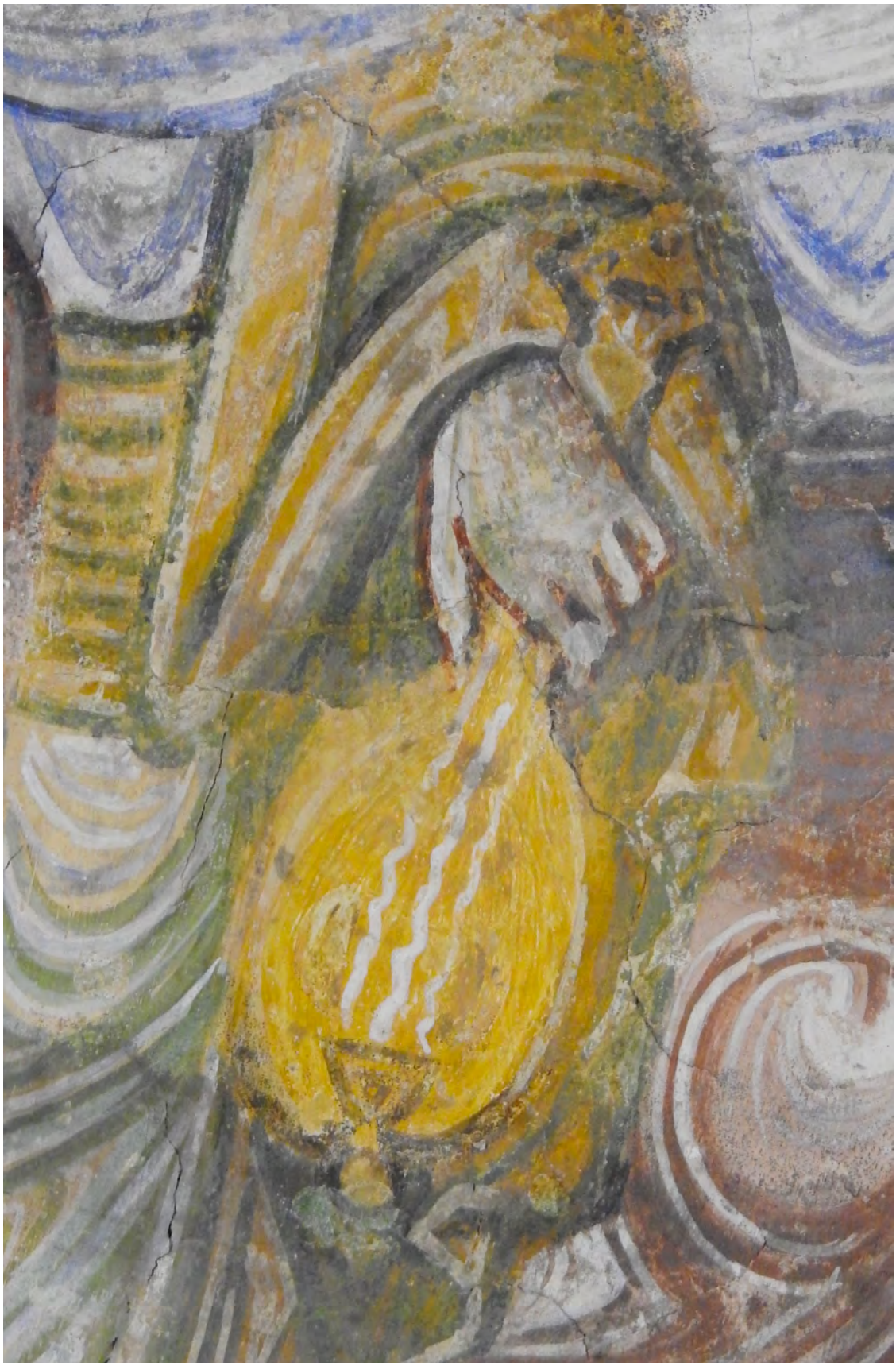
4L-f

4L-g

4L-h

4L-i

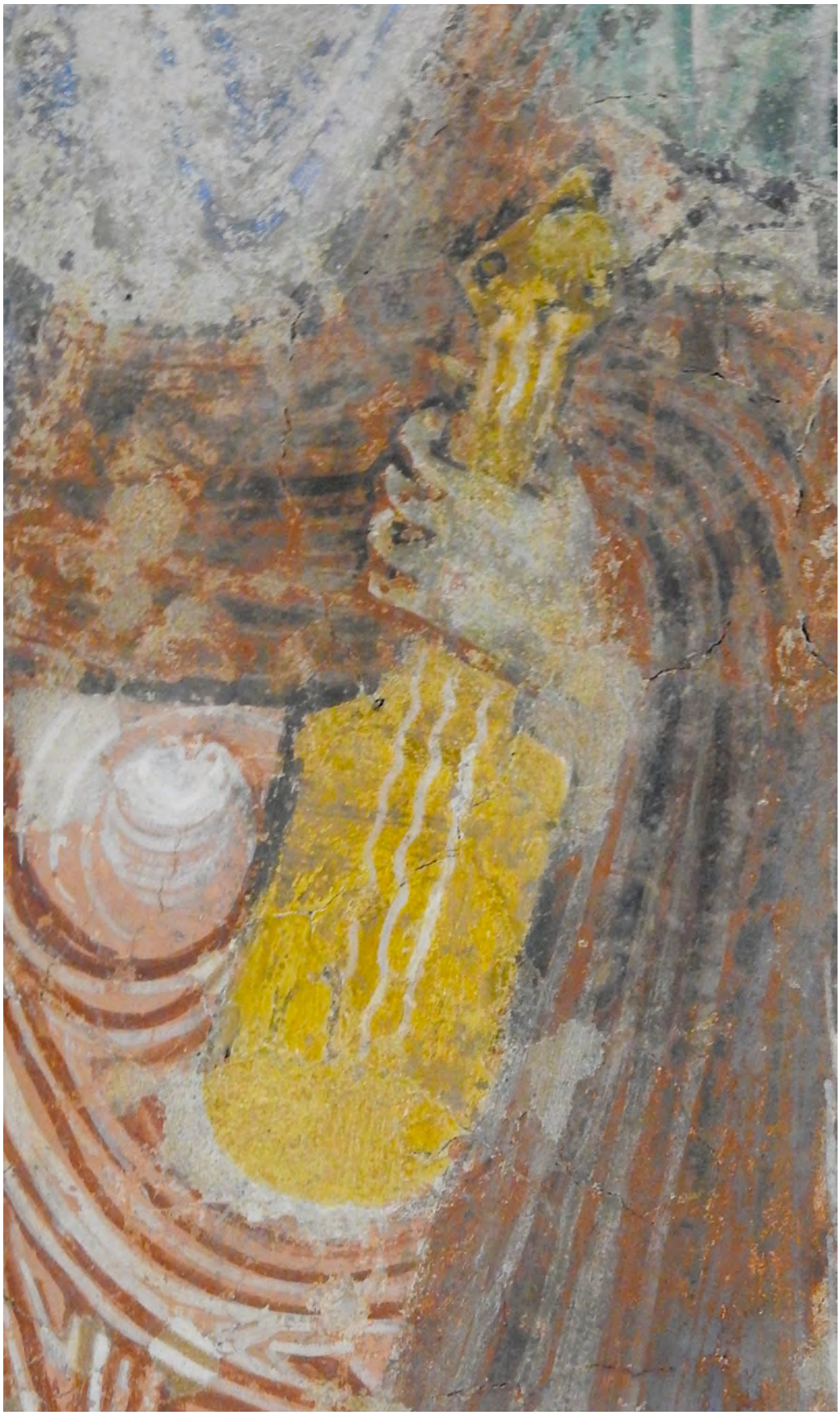
4L-j



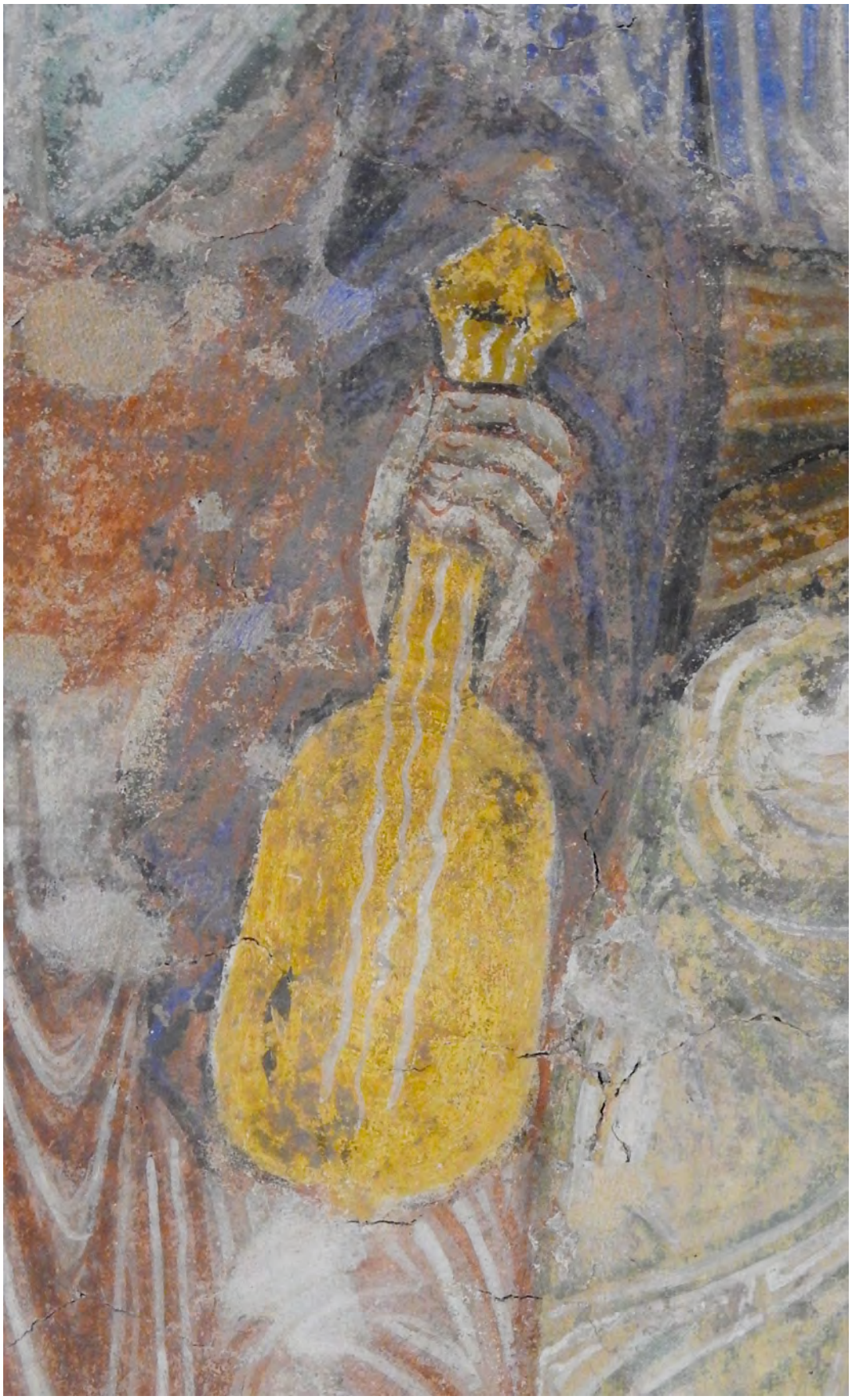
4L-k

4L-l

4R-a



4R-b



4R-c

4R-d

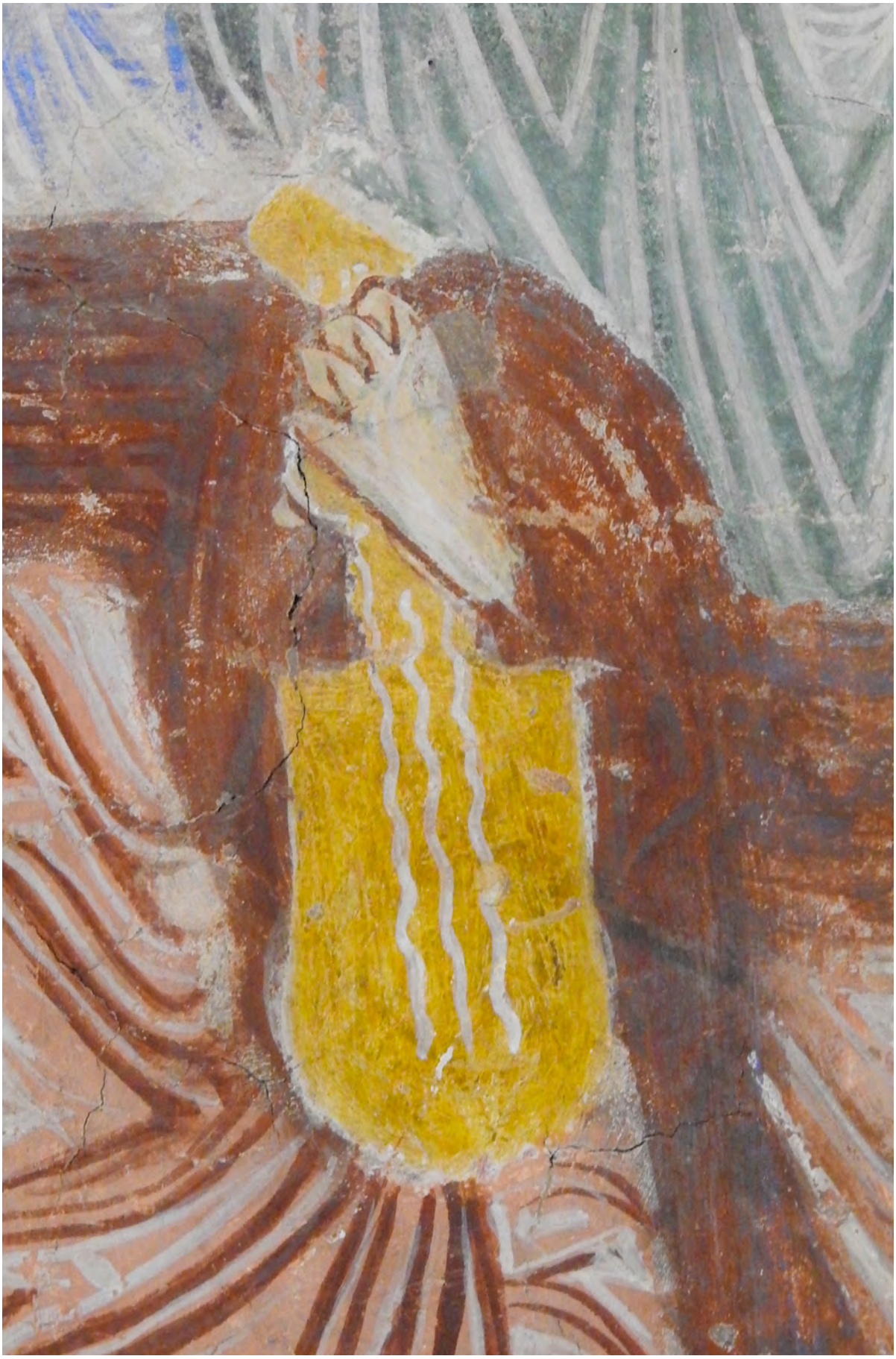
4R-e

4R-f

4R-g

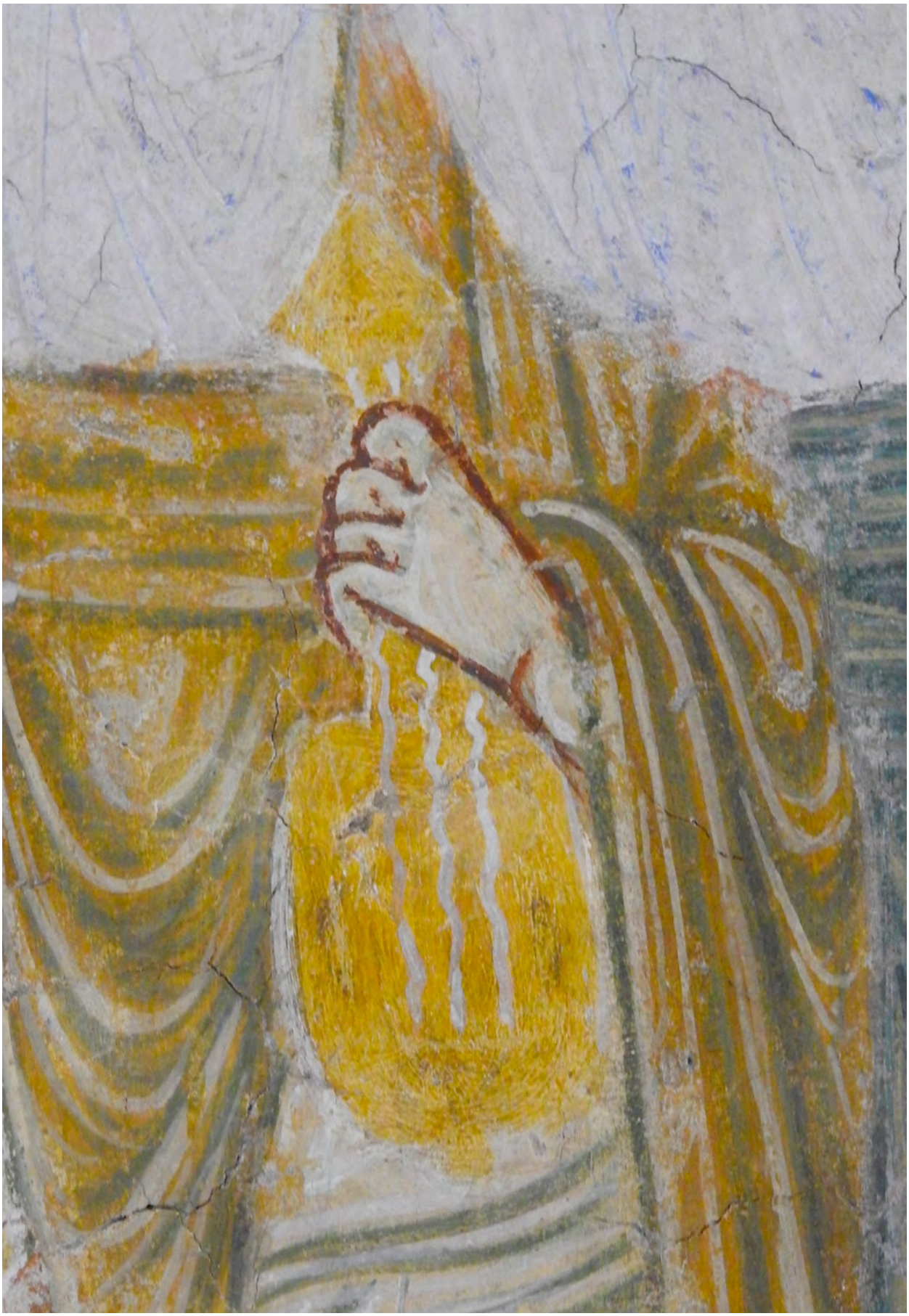
4R-h

4R-i



4R-j

4R-k



4R-1

CE 5

CE 5

Location: Parma, Baptistery, inner west portal.

Medium: Stone relief carving

Dating: c. 1200 (1196-1214; Woelk 1995, 99).

Artist: Benedetto Antelami

Provenance: North Italian, Romanesque style.

Iconographical context: David with three musicians, three dancers.

Number of cetre: 1

Size: c. 38-43 cm

Comments: Woelk 1995 describes scene as David with three musicians and three dancers - left of D: fiddle player, then dancer lifting his gown, then syrinx player who may also play percussion instr; on the other side, a Zupfgeigenspieler and two dancers (Woelk 1995, 130). There are four strings, four pegs and four frets; these elements total twelve in number, reminiscent of Biblical symbolism (see next entry) but also this is the number containing the proportions of the Boethian Quadrichord of Mercury (2:1, 3:2, 4:3, 9:8).

BibliographyA: Woelk 1995.

BibliographyM: Winternitz 1961, repr. 1979, 62; Steger 1961, 249-250; Grunfeld 1969, Pl 17.

CE 5

CE 5

CE 6

CE 6

Location: Roma, Vatican lat. 39, f. 158 - 158v.

Medium: New Testament, miniatures from Apocalypse.

Dating: Second quarter 13th c. (Eleen 1987, 222).

Artist: Franciscan-influenced workshop trained in the Veneto (?) (Eleen 1987, 223-235). As Luba Eleen wrote in her publication of 1987 regarding the saints' calendar contained in this New Testament and the provenance of the manuscript, "Another important link with Verona can be seen in the two commemorations of Firmus and Rusticus, Veronese martyrs whose relics were translated in the mid-eighth century to the church of S. Fermo Maggiore...Vat. Lat. 39's calendar also has later additions celebrating the newly-canonized Franciscan saints, Francis and Anthony of Padua. These commemorations accord with the history of the church of S. Fermo Maggiore, awarded by the pope in 1249 to the Franciscans, who took possession finally in 1261. Again, the suggestion can be put forward that the calendar was created for an individual who worshipped privately in S. Fermo, or who participated in a confraternity that met there, eventually coming under the supervision of the Franciscans."

Provenance: Verona (Eleen 1987, 223); other proposals have included Venice and southern Italy (Zabughin 1921, 18; Morello/Pace 1984, 38-39). Eleen gives an excellent summary of the shortcomings of provenance proposals in the Italian / German facsimile editions published in 1984 (Morello/Pace 1984; Morello/Stockmann 1984). Most commentators agree that a Byzantine influence is stylistically in evidence for the miniatures.

Iconographical context: Elders of the Apocalypse, Last Judgement

Number of cetre: 24 (f. 158: 14; f. 158v: 10, grouped as 6 in the left margin, 4 in the right margin). Due to the close similarity of all of the instruments, they are not numbered here individually.

Size: c. 1.8-2 cm (page size = 19.5 x 14.3 cm)

Comments: This is the earliest tulip-shape source, with similarity to **CE 8**, **14** and **15**.
On f. 158, ten of the fourteen cetre have roses comprised of nine holes (eight surrounding one central hole). One further example shows ten holes, another has eight holes, yet another is faded but seems to show six, and the last is cut off at the page edge. Meanwhile, seven of the fourteen seem to have four pegs, the rest are unclear or out of view. All instruments have shoulder horns and end projections at the bottom of the body, while none show frets. Bent-back pegheads are shown via flattened side-perspective, a feature occasionally seen in illuminations of this period, in particular, Beatus miniatures (for example, Morgan MS 429; see Young 1984) showing Byzantine influence.

On folio 158v, in the left margin, four of the six cetre show eight-holed rosettes, while in the right margin, two of four do. Eight out of the total ten instruments on this folio show four pegs.

The shapes of the hanging censer vessels are a graphic parallel to the cetre; for a discussion of censers and instruments in the Vulgata text and iconography of the Apocalypse, see Young 2015.

BibliographyA: Toesca 1927, 1088; Morello 1984; Eleen 1987. Facsimile: see Digivat page https://digi.vatlib.it/view/MSS_Vat.lat.39, including extensive bibliography (accessed 08.01.2018).

BibliographyM:

I wish to express my gratitude to Marc Lewon, who made me aware of this interesting source for the cetra.

CE 6

Folio 158

CE 6

Folio 158v

CE 6

158v, detail left

CE 6

Folio 158v, detail right

CE 7

NOSTRO IUBILATE DEO IACOB
IN PSALMIS ET LAUDIBUS IN PA
LVM PSALTERII IOCUNDUM

CE 7

Location: Cambridge, Fitzwilliam Museum, MS 36-1950 f. 88 ("Breslau Psalter").

Medium: Bible, miniature

Dating: c. 1255 - 1267 (http://www.fitzmuseum.cam.ac.uk/illuminated/manuscript/discover/the-breslau-psalter/artist/hand-f/folio/folio-88r/section/undefined; accessed 10.12.2017).

Provenance: Made in Silesia, Breslau, under influence of Padovan-Venetian school of Giovanni da Gaibana.

Artist: Hand F (http://www.fitzmuseum.cam.ac.uk/illuminated/manuscript/discover/the-breslau-psalter/artist/hand-f/folio/folio-88r/section/undefined; accessed 10.12.2017); influence of the Master of Giovanni da Gaibana, described on website as "This artist illuminated a manuscript copied in 1259 for the Cathedral of Padua by the scribe Giovanni da Gaibana, hence his name. The manuscript is still in Padua (Biblioteca Capitolare, MS E2) and the Gaibana Master must have travelled north of the Alps after its completion, bringing with him the 'precious' style and Byzantine iconography prevalent in the Veneto at the time. His migration has been associated with Duke Henry III's brother, Vladislav, who studied at the University of Padua and probably brought the Italian artist with him when he returned north of the Alps to become Archbishop of Salzburg in 1265."

Iconographical context: Psalm 80, historiated initial E; five musicians with cetra, straight trumpet, drum, harp, transverse flute.

Number of cetre: 1

S***ize***: c. 2.5 - 2.7 cm

Comments: Four-stringed cetra with interesting details including broadish neck-fingerboard, shoulder horns, prominent base and thin white shoulder cord to support the instrument, the only example of such a device in the entire catalog.

BibliographyA: Pfändtner 1996, 94-96.

BibliographyM:

CE 7

CE 7

CE 7

CE 8

Photo above: https://commons.wikimedia.org/wiki/File:Kathedrale-Ferrara-1.jpg (accessed 01.06.2017)

CE 8

Location: Ferrara, Basilica Cattedrale di San Giorgio Martire (West facade, porch-portal, second-third stories).

Medium: Relief sculpture

Dating: c. 1260 - c. 1300 (see Comments below).

Artist: Anonymous

Provenance: Ferrara / Venice

Iconographical context: Last Judgement, Elders of the Apocalypse.

Number of cetre: 1

Size: c. 60-75 cm

Comments: The dating of the Last Judgement relief is problematic due to the anonymity of the sculptor(s) and the uniqueness of source as a 13th-c. iconographical scene decorating a Romanesque cathedral in Italy, or as one researcher put it, "In view of the unorthodox Gothic architecture and iconography, it is not surprising to find that the Ferrara sculpture has no single, clearly related source."[1] It has been dated as early as the 1230's by Valentiner, to as late as the 15th c. ("13th-15th c." according to Princeton Index online 2017).[2] Apart from a large number of tourist-guide citations, a handful of researchers have offered extended analyses of this important monument.[3] In addition to the datings given above, Zavin supports a date in

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[1] Zavin 1972, 197.

[2] Valentiner 1954, 119; Toesca 1927, 894, dated the work late 13th - early 14th century, to which result the present author was also led, via a different path as outlined below. For the Princeton Index online, see https://ica.princeton.edu/hayward/display.php?country=Italy&site=203&view=site&page=2&image=6392

[3] See for example *Ferrara and Its Province: Towns, Lidi di Comacchio the Po and the Delta Park*, Milano: Touring Club of Italy (2006), p. 26, which dates the Last Judgement to the late 13th century.

the "second half of the thirteenth-century".[4] Marta Boscolo Marchi published additional information in 2011 on the cathedral facade, seeing the Last Judgement as "the crowning sculpture, the porch, done by French workers summoned from Reims and Amiens c. 1235 - 40", possibly with finishing work by Venetian sculptors of the 1260's/70's.[5]

There is broad agreement on the French inspiration of this work, following similar iconographical programs found on cathedrals at Paris, Amiens, Reims, Chartres and others.[6] At the same time, there are notable differences. The decorated surfaces of the Ferrara porch are brought out into the foreground space, in front of the building's facade, in what might be called extroverted fashion. They project out to greet the viewer, rather than the decorated concentric rings - more introverted - which pull the viewer into the church through the doors of the French cathedral portals.[7]

A clear symbolic element is in evidence in Ferrara which is absent from any French monument. The commentaries of the early Christian Church Fathers include the idea that the cithara is a symbol of the Church, which is comprised of the faithful flock's many voices united in glorious harmony to give praise to God. The form of the Ferrarese porch-portal calls forth the likeness of the cithara - albeit with inverted spade resonator - as we have seen in **Pl. 13a/b**. The cithara's triangular crown in **Pl. 13a/b** is analogous to the porch's triangular, cross-topped crown, representing Heaven and placed above the wide rectangular panel of human souls below, risen from their earthly graves, facing the act of judgement.

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4 Zavin 1972, 205.

5 Marchi 2011, 245. Marchi is the first author to refer to the stringed instrument on the lower right as "probably a cetera", citing the book of David Munrow as her source of information on the instrument (*Instruments of the Middle Ages and Renaissance*, London 1976).

6 Zavin 1972, 199, states that "in many respects, the Chartres tympanum seems the most likely candidate for the Ferrara prototype."

7 Zavin 1972, 203: "Despite many relationships to northern sources, the ultimate product is not...'ultimately French'. It is 'Ferrarese Gothic' and uniquely indigenous."

The limestone sculptures have suffered substantial damage over the centuries, especially from acid rain, and had restoration work done in the 1980's.[8] Some figures have been more severely affected with deterioration, others less. The Elder holding the cetra near the lower right-hand corner of the triangular border has been spared the disfigurement that some of his colleagues have suffered, apparently being slightly more protected from the elements than other figures. Was there a restorative intervention specifically focused on the cetra?

Thanks to the publication of a photo by Hilde Bauer of Munich in Valentiner's seminal article (see "HB Photo" below; date c. 1953), we can ascertain what the instrument carving looked like in 1954. In the extensive documentation published by Marchi (2011 / 2016) on the history of any interventions or restorative campaign, there is no record of any work which might have altered the form of the cetra other than the intervention of Ottorino Nonfarmale in the 1980's. The cetra appears, however, to have been unmolested by Nonfarmale, for detailed photos from 2016 show virtually the same object in the same condition as found in Valentiner.

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[8] Zavin 1972, 187, mentions that the Last Judgement sculptures were cleaned in 1968 and a protective, waterproof barrier was installed "semi-permanently." She further reports that although a complete set of photographs was made by Biancolli of Ferrara in 1966, "the photographs taken before the sculpture was lost to view form an inadequate record.....close-up views of many of the details are not available. Much of the the sculpture was not photographed despite the opportunity of an exterior scaffolding in place for a general cleaning and repair of the facade. The photographs are lacking in clarity and generally inadequate for the purposes of stylistic analysis." Reproductions of black-and-white photos supplied in Zavin's dissertation are low resolution and of limited use.
The restoration work in the 1980's was done by Ottorino Nonfarmale; see Marchi 2011.

"HB Photo" c. 1953 by Hilde Bauer (Munich) of Elder with cetra, Ferrara Last Judgement, published in Valentiner 1954.

A Re-Evaluation of Dating

There has been, generally speaking, one line of argument for the mid-13th c. dating proposed by the studies mentioned above, which is the iconographical and stylistic similarity between the Ferrara Last Judgement and the same scene depicted on the French cathedrals at Reims and Amiens during the first half of the 13th century. It has thus been argued that French

artisans were brought in during the years 1235 - 40 (Marchi 2011) or that an Italian sculptor who had been educated in northern France was responsible for the work.

The master responsible for the cetra - I would argue that the entire Last Judgement was done by the same master or workshop, considering the stylistic consistency within all of the images - was very likely Italian, as will be argued further below. One of the proposals of the present study maintains that a French artisan had no first-hand knowledge of the cetra, because the instrument did not exist in France. We do not know whether the commission for the work included a specific list of which instruments were to be depicted.

On the general iconography, it is clear that whoever ordered the commission wished for a Last Judgement after French Gothic style, specifically, a combination of Christ in majesty, with Mary, saint (John?) and archangels (Michael), plus the Elders and other angel attendants.[9] The master who was invited to execute the carvings must have been thought to have had some knowledge or experience of that style. There is no reason why Italian artists would not have qualified for this requirement, and the mixture of creative elements in the Ferrara Last Judgement, including the compression of the elements of 24 Elders (6 Elders with instruments, plus 18 background Elder faces only) into a much smaller, flatter are than the deep, multi-leveled French cathedral portals, and the different facial features and expressions of the figures, confirm the Italian qualities of the work here executed.[10]

While there is no compelling reason why this work could not have been executed five or more decades after the French examples were finished in the first half of the 13th c., pushing the field of dating for Ferrara towards the end of the century, there is another reason why the Ferrara work may not be so late. In addition to being a unique Italian example of a church decorated with the Last Judgement in external stone carving, this monument is also unique in that it clearly mixes two elements, the Elders of the Apocalypse and Psalm 150. The instruments held by the Elders are not exclusively *citharae* as they are described in the Revelation text, but follow exactly those of Psalm 150: *tuba* (curved horn), *psalterio* (psaltery), *cithara* (cetra), *tympano*

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[9] The Christ in Majesty (Majestas Domini) iconography is discussed in Zavin 1972, 189.

[10] See Zavin 1972, 196-198, for a discussion of emotive elements.

(square frame drum), *organo* (portative organ) and *cymbalis* (bells), as well as *choro*, two singers.[11] Of special interest among these instrument forms is the square frame drum (left border, third Elder from bottom), found in just two northern Spanish examples: the carvings of the Elders at the Cathedral of Burgos (1235-1240) and the collegiate Church of Toro.[12]

Ferrara Duomo, Last Judgement, Elders with (l. to r.) psaltery, bells and square frame drum.

The frame drum is an extremely rare instrument in Italian iconographical sources, but it can be found in Christian iconography of France and Spain.[13] Similarly, the Ferrara Elders display mixed instrument types, a feature also seen in Last Judgement cycles from France and Spain.[14]

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[11] Marchi 2016, 280, sees the square instrument as "perhaps a syrinx", i.e., panpipe.

[12] Molina 2007, 94-95, gives photos of both. See Deknatel 1935, 389, for the reasons that Spanish cathedral carving was influenced by French, and in particular, Burgos influenced by Amiens.

[13] I am grateful to Dr. Camilla Cavicchi for drawing my attention to an illustration in a late-13th- or early 14th-c. French manuscript, the *Credo de Joinville* (BNF, MS. Latin 11907, f. 232v) showing a square frame drum and citole in a scene of the Elders of the Apocalypse; see also Molina 2007, 93.

[14] Molina 2007, 94-95.

The presence of the frame drum clearly points to an iconographical element from French usage, but it seems more likely that local artists, rather than French sculptors, were responsible for the Last Judgement. As Shirley Anne Zavin wrote in her dissertation of 1972,

> "To bring the Gothic program (of the Ferrara façade) to a triumphant conclusion, it was decided to replace the exterior sections of the porch with the present more magnificent structure. An even more important factor, however, was the desire to display at Ferrara a sculptural cycle like those then being created for the portals of the great Northern cathedrals. The choice of subject – a Last Judgment cycle – demonstrates the same desire for modernity as the forms used in the upper galleries."[15]

> "Builders of the upper story....had to depend on vaguely remembered or incompletely transported Gothic prototypes for both architecture and sculpture. By northern standards, the upper story of the Ferrara façade is an absurdity; its logic as a conclusion to the lower stories is its least admirable feature. It should be judged, however, primarily as a purely local product, designed by regional architects to fill a particular need. It is informed by a specifically local and definable sensibility. Inventiveness, a willingness to create new forms as required, is another facet of that sensibility... it is the same sensibility which may be detected in the Gothic sculpture which, together with the architecture of the upper galleries, makes it possible to define a 'Ferrarese Gothic' style...uniquely indigenous."[16]

If Zavin's assertions are correct - as I believe they are - then it would be useful to understand what sort of prototype or model might have been available to the regional workshop who executed the carving of the Last Judgement. A bifolio now in Paris may provide a clue. Copied in Champagne (or Acre) during the last quarter of the 13th c., the source shows model-book drawings which illustrate the *Credo de Joinville* text, apparently intended as a guide for mural decoration:[17]

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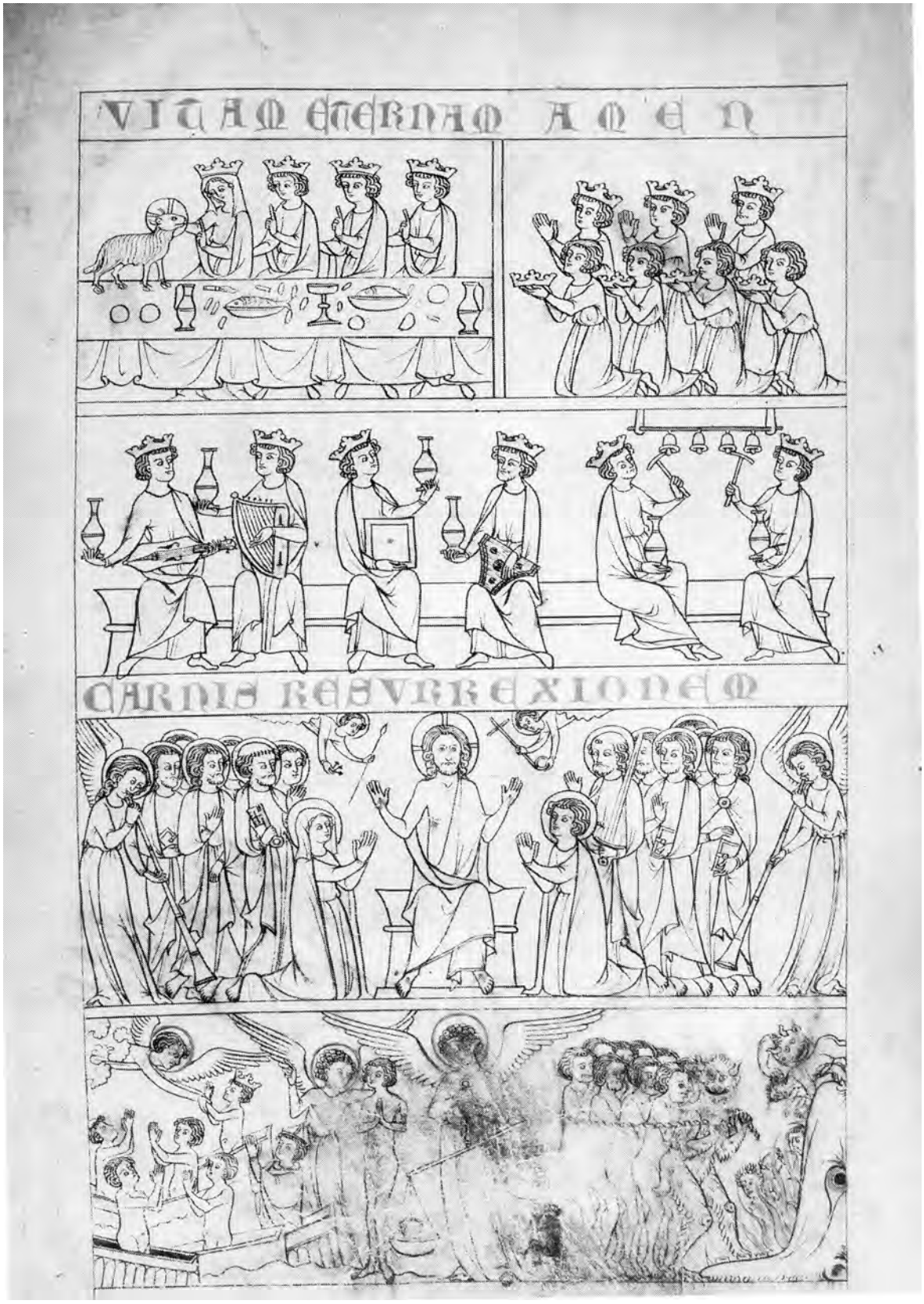
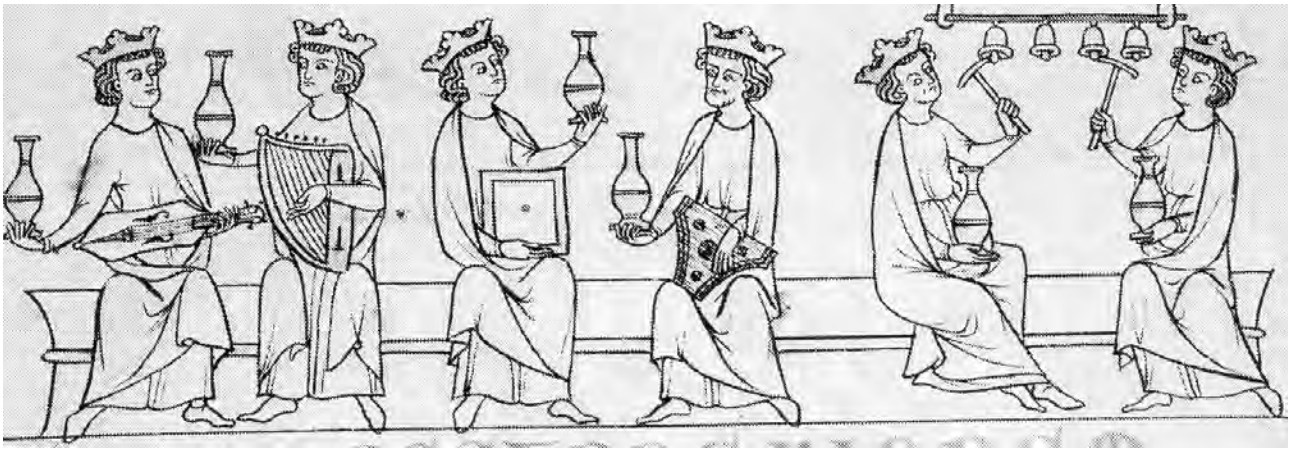
[15] Zavin 1972, 185.

[16] Zavin 1972, 178-179, 203.

[17] On Joinville's *Credo*, see Friedman 1958. For his commentary on the section concerning the Last Judgement, see 80. See also Scheller 1995, 194-200.



Paris, Bibliothèque nationale, Ms. Lat. 11907, f. 232v, (Champagne or Acre, last quarter 13th c.); sketch for mural painting of Last Judgement described in the *Credo de Joinville* (second redaction, 1287).



Detail of Ms. Lat. 11907, f. 232v, showing Elders with (l. to r.) citole, harp, frame drum, psaltery, bells.

We may presume that the workshop who executed the sculptures in Ferrara worked from a model or models of some kind.[18] The detailed rendering of the cetra on the Duomo (see photo of Hilde Bauer above), consistent with the body of Italian iconography for the instrument down to the details of bordun (with the extended nut and bridge) and rose, confirms that whoever was responsible for the work knew the cetra well. The instrument shown on the left in the detail above is not a cetra, it is a French citole of fundamentally different form and construction.[19] Like the square-framed drum, the citole is an integral part of this particular French iconographic program for illustrating the Last Judgement during the 13th century.

A further argument against a French artist working in Ferrara now takes shape: if the (French) artist did not change the square drum to suit local taste (the instrument was more or less unknown to Italian musicians), why did he "change" the citole into a cetra? Or, similarly, if the square drum was a fashionable nod to Northern cathedral style, why was a citole not included for the same purpose? Taking these questions and the proposals of Zavin given above into account, the work was unlikely to have been carried out by imported French craftsmen.

[18] Wooden models may also have been used to carry out the sculpture. For a discussion of the use of wooden models by medieval sculptors, see Marchi 2011, 217.

[19] See the in-depth citole study of Margerum 2010.

The Ferrara Duomo cetra exemplar shares certain characteristics with **CE 6**, **14** and **15**. Although **CE 14** (Giotto, Scrovegni Chapel in Padova) is an incomplete image - only the upper part of the body, neck and peghead are shown in the fresco - what is shown is almost identical to the Ferrara cetra, and we have a very specific date for Giotto's work, 1305-1307; we will surely want to take this into consideration before proposing a date for Ferrara. If Valentiner's dating of 1230-1240 were correct, then the Ferrara instrument would be only 30 - 40 years after Antelami's work (**CE 5**), yet there are substantial differences between the two. Ferrara's body shape features incurved sides with curved, tulip-leaf horns. Antelami has nearly-straight sides, with just a hint of incurvature, and concave lines from horn-tip to neck joint, rather than the slightly convex lines forming the horns of the Ferrara example. Tulip horns are especially prevalent in the Giotto fresco mentioned above and the Assisi cycle c. 1310-1315 (**CE 15**). Ferrara has a more prominent body base and massive bordun nut and bridge (both are exaggerated in size, presumably because of the carved stone medium), which is not found on the Parma cetra (although Antelami's vielle, from the same carving, has a well-defined bordun string which could as well have been represented on the cetra, had this feature been, for Antelami, a salient one). Twelve pegs (Ferrara) rather than four (Parma) is a feature shared with the Cimabue cetre in Assisi of c. 1280 (**CE 10**) and the Giotto cetra in Padova, 1305-1307, (**CE 14**).

All in all, the likelihood of a closer chronological proximity to Antelami (c. 1200) than to Giotto seems small. Marchi 2011 sees a stylistic closeness with Venetian sculpture of 1260's and 70's, which is concordant with Eleen's assessment of a postulated Venetian provenance of **CE 6**.[20] The cetre in **CE 6** share important features with the Ferrara Last Judgement, with the exception of four rather than twelve pegs on the peghead. This variance might be explained by the very small physical size of the images in the miniatures, as a simple practical consideration.

[20] Eleen 1987.

There is one more element to be factored in before concluding with a date proposal for the Ferrara Last Judgement. Although the rise of the cetra during the 13th c., continuing into the 14th c. and in some cases later, was a undeniably Franciscan phenomenon, as outlined in **Chapter 2,** the earliest unequivocal Franciscan iconographical manifestation is **CE 10**, Cimabue c. 1280 at San Francesco in Assisi. The Ferrara Duomo was not a Franciscan church per se, but it was on the so-called *Via Romea Germanica*, the main pilgrim road between Germany and Rome (also connected with Assisi). This could explain the presence of the cetra as an iconographical symbol usually found in this period in a Franciscan context, as a general observation. The quintessential Franciscan Elders monument, **CE 15**, does not show the Elders with mixed instruments, but all with cetre. This could argue against the Ferrara work having a Franciscan iconographical connection.

Taking all factors into account, in summation, the Last Judgement was probably executed sometime during the period c. 1260 - c. 1300. The cetra is stylistically indebted to **CE 6**'s tulip form, which very likely antedates it, and quite similar to **CE 14** and **15**. It is contemporary with **CE 10** (Cimabue), or slightly earlier, but does not manifest **CE 10**'s austere, straight horns. The tulip-horn shape seems to be a Venetian or Veneto-related style (including Padova and Ferrara, not far away), and it finds its way, perhaps via Giotto's influence, back to the Lower Basilica frescoes in Assisi of c. 1310-1315 (**CE 15**).

Regarding the symbolism of specific features of the cetra, we begin with the 12 pegs / strings, which represents a dramatic increase in number over four strings on Antelami's cetra. The choice of 12 as the number of strings is heavily symbolic, from both Biblical and music theory standpoints. In the Apocalypse setting, the 24 Elders can represent 12 Apostles and 12 chieftains of the tribes of Israel.[21] The multiplication formula 12 x 12 = 144 suggests the 144000 blessed souls saved after the Last Judgement. In the geometry of the Ferrara triangular Last Judgement scene, the 24 Elders are divided into two groups, 12 on the left border and 12 on the right (although there appear to be three on the left and three on the right, each one has three small Elder faces hiding behind them, making the total number of Elders depicted 24, although only six are shown with instruments).

[21] Marchi 2011, 214.

The number 12 includes the fundamental proportions of the Pythagorean monochord: 12:6 = 2:1 (octave), 9:6 = 3:2 (fifth), 12:9 = 4:3 (fourth) and 9:8 (whole tone). Then there are the elements of the frets and the tiny soundholes. The frets number six, including the nut, which could represent ut, re, mi, fa, sol, la, the six syllables of the hexachord.

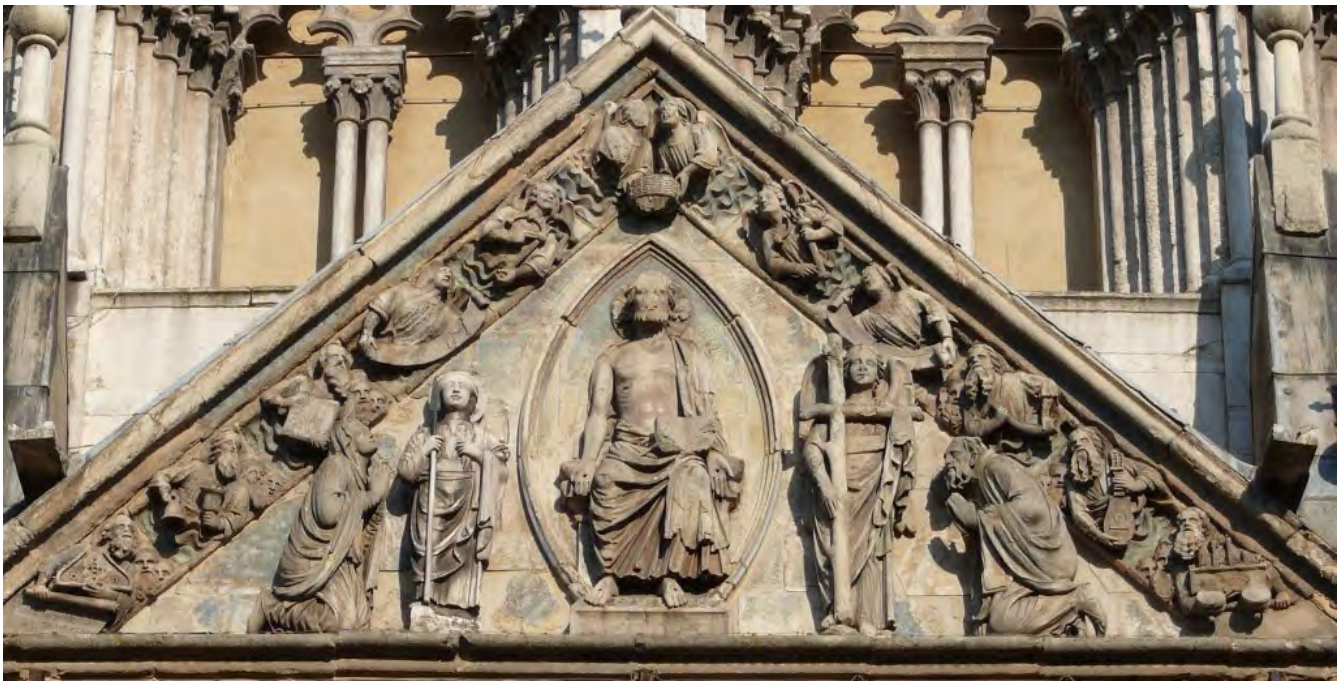
Meanwhile, 18 holes comprise the circular rose in the middle of the soundboard, which establishes a relation based on the first three prime numbers and/or the Trinity 1/2/3 (6 frets / 12 pegs / 18 holes; 6 frets + 12 pegs = 18 holes).

Unlike Antelami's cetra, with four strings carved in stone, there are no actual strings depicted, for obvious practical reasons related to the medium, as well as the distance from the viewer, who does not need there to be twelve carved strings in order to recognize the object. The twelve pegs are clearly grouped into three rows of four pegs each. Placing four pegs in a row would be not ideal for practical tuning, as the string attached to each of the four, with the exception of the peg nearest the nut, would rub against another peg or pegs. Thus it would seem that this detail of the sculpture might not have been completely accurate, and that a real instrument would have staggered pegs to facilitate tuning stability. Could this cetra have had three courses of four (unison) strings each? (After all, Gioacchino da Fiore, the 12th c. Calabrian mystic mentioned in **Chapter 2**, had described the cithara as having three strings). It is not impossible, although a four-string course would be unprecedented on any necked chordophone in the Middle Ages or Renaissance, and it would raise the question, why four strings, rather than three or two, for each course? For a discussion of string configuration on 13th c. cetre, see **Chapter 4** below.

BibliographyA: Toesca 1927; Valentiner 1954; Zavin 1972; Marchi 2011; March 2016.

BibliographyM:

CE 8



CE 8

CE 8

CE 8

CE 9

CE 9

Location: Puy-en-Velay (Le), Bibliothèque municipale, MS 0001, f. 173v.

Medium: Bible, miniature

Dating: 13th c.

Artist: Anonymous

Provenance: Bolognese ? Not included in Pfändtner 1996; the miniaturist is clearly working in north Italian style, presumably under Bolognese influence.

Iconographical context: Psalm 80 (Vulgate 81), Initial E (Exultate).

Number of cetre: 1

Size:

Comments: Body shape is close to **CE 5**. Three strings, circle-of-holes rose, trace of frets. Pfändtner 1996, 46-48, gives an account of the iconography related to Psalm 80, helpful to understand any contemporary miniature source illustrating that psalm, although the only neck chordophones mentioned by him are "fiddle" and "lute".

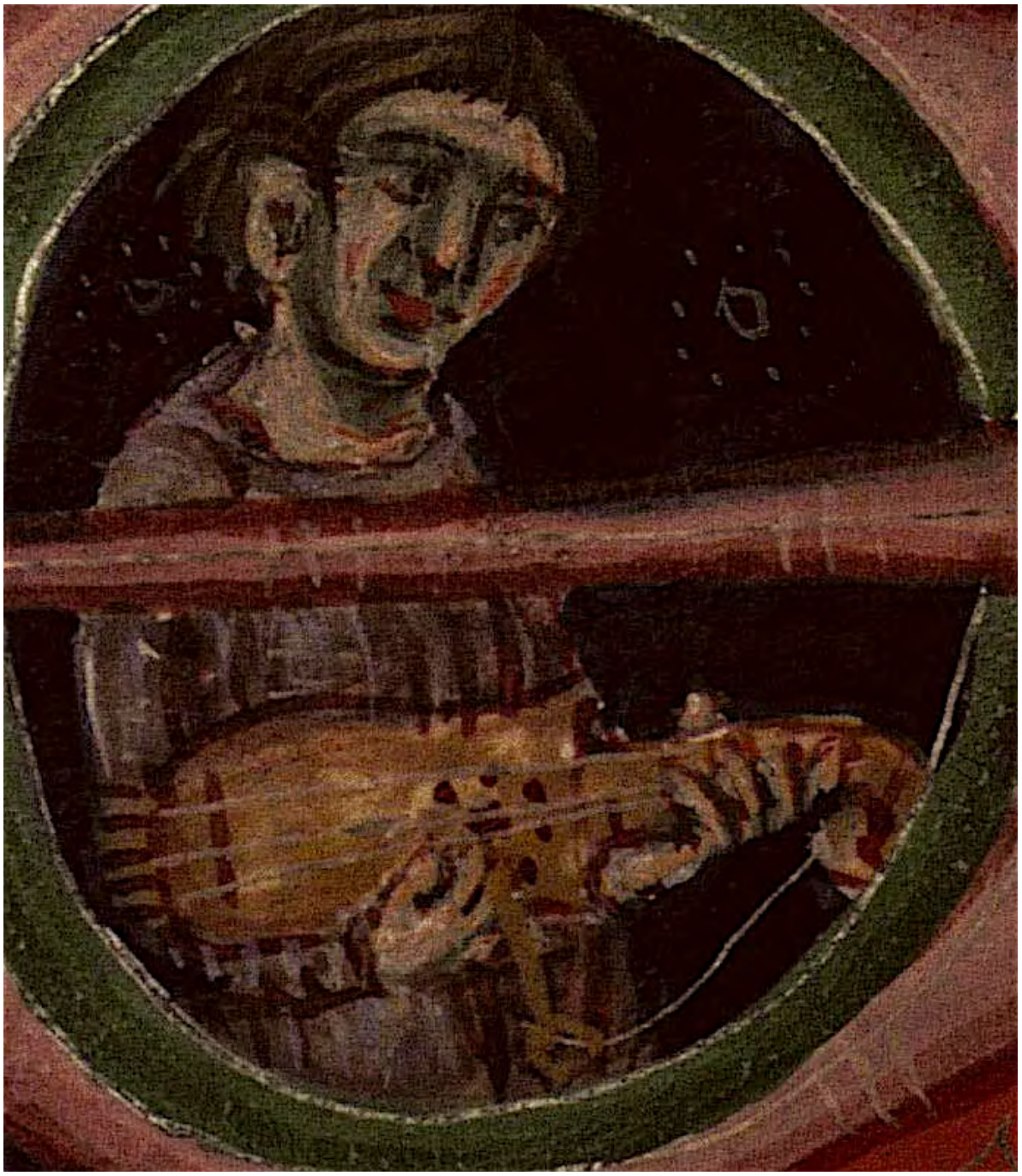
BibliographyA: http://bvmm.irht.cnrs.fr/consult/consult.php?mode=ecran&panier=false&reproductionId=8835&VUE_ID=1272333&carouselThere=false&nbVignettes=4x3&page=2&angle=0&zoom=petit&tailleReelle=
(accessed 10.12.2017)

BibliographyM: Margerum 2010, II, 291.

Photo: https://creativecommons.org/licenses/by-nc/3.0/deed.fr (accessed 12.12.2017)

CE 9

CE 9



CE 10

CE 10

Location: Assisi, Basilica superiore di San Francesco, transept, south wall, panel on far left.

Medium: Fresco (damaged)

Dating: 1277-1280 (Bonsanti 2002; Evans 2004; Malafarina 2005); c. 1280-1283 (Brown 1984).

Artist: Cimabue (Cenni di Pepo)

Provenance: Assisi

Iconographical context: Apocalypse: Vision of the throne and adoration of the Lamb with Elders.

Number of cetre: 2 (**10a** = on the left; **10b** = right)

Size: c. 30 cm

Comments: Despite their damaged state these clearly show cetra features.

10a on the left features an oval body with pronounced longish horns at the neck intersection, five or (more likely) six block wooden frets, frontal, roundish peghead with no pegs discernable, large round soundhole / rose, and strings attached at end of body. There are at least eight strings, although the damaged state of the fresco makes it difficult to be sure of the exact number, which may have been as many as twelve. Strings seem to have been grouped into either four or five courses, with one lower course consisting apparently of three strings.

10b on the right shows eleven or twelve finely drawn strings running over a wide bridge, including two off-the-fingerboard bordun strings off the left-hand edge of the neck. A projecting line extending laterally off the peghead to the right might be interpreted as a nut elongated for a bordun course off the fingerboard, however this is on the opposite side (right) to the pair of strings off the fingerboard to the left. This cetra, like its sister instrument, has

presumably six block frets and a circular soundhole or rose. The left shoulder (damaged) suggests that it had a prominent horn, now unclear; no horn is in evidence on the right shoulder. Important similarities with **CE 8** (Ferrara Duomo) include general size, proportion of neck-fingerboard to body, wide bridge and bordun strings, and large number of strings (**CE 8** shows twelve pegs). A circular soundhole seems represented (rather than f - holes on either side of the strings). The instrument on the left seems to show traces of frets, perhaps the darkened spaces in between the frets? The same instrument has possibly an ovalish peghead.

See **Chapter 4**, "Frets", for a discussion of fret types. It is not clear whether these instruments featured Antelami-style thinner slat-type frets, or the wider style seen in the 15th century. If these are indeed wider-block style, they are not yet kollopes-frets, for they do not seem to project off the edge of the neck.

Established influence of this cycle upon the work of Giotto raises the question of whether Giotto's cetra in Padova (**CE 14**) can suggest certain details of Cimabue's models, for example, the tuliped horns.

Brown guessed correctly that the instrument on the left "may be a cittern," but denoted the instrument on the right (with better preserved detail) as a "fiddle with no bow." Note form similarity with phials, as seen in many other depictions of same scene.

BibliographyA: Poeschke 1985, Pl. 76; Bonsanti 2002, 561-562 (commentary section), 962 (photo section).

BibliographyM: Brown 1985, 230-231 (Entry 84); Margerum 2010.

CE 10

CE 10a

CE 10b

CE 11

CE 11

Location: Paris, Bibl. nationale, MS latin 18, f. 427v ("Bible of Clement VII").

Medium: Bible, miniature

Dating: c. 1275-1300

Provenance: Bologna (so-called "Second Style" period).

Artist: Jacopino da Reggio

Iconographical context: Apocalypse, 24 Elders sit below Throne of God.

Number of cetre: 4

S***ize***: c. 7-9 mm

Comments: This source should not be confused with another so-called Bible of Clement (BL MS Add. 47672, Neopolitan c. 1330, see Appendix).

Do these represent plucked cetre, or are they intended as bowed instruments? This is a sister manuscript to **CE 12**, with miniatures by the same artist Jacopino da Reggio. His work shown in **CE 12** is an unequivocal cetra, and although these images do not display clear horns on the shoulders, or end projections, they are included in the Catalog as legitimate cetra candidates, with full awareness that they might in fact depict vielles without bows. A lack of more specific features must have to do with the tiny physical size of these images.

Jacopino da Reggio is thought to have been influenced by works at the Basilica of San Francesco in Assisi during his period of activity, c. 1265-1285 (Alessandro Conti, Grove Online 210917 http://www.oxfordartonline.com/subscriber/article/grove/art/T043119?q=jacopino+da+reggio&search=quick&pos=1&_start=1#firsthit) (accessed 14.10.2017).

This might suggest that he was familiar with Cimabue's work in the cathedral, including **CE 10**.

BibliographyA: Pfändtner 1996; Fleck 2006.

BibliographyM:

CE 12

Cantate domino
canticum nouum.
quia mirabilia
fecit. Saluauit
sibi dextera eius
et brachium sanc
tum eius. Notum
fecit dominus salutare suum. in o
spectu gentium reuelauit iustitia
am suam. Recordatus est mise
ricordie sue et veritatis sue domui israel.
Viderunt omnes fines terre salu
tare dei nri. Iubilate deo omnis
terra. cantate et exultate et psallite.
Psallite domino in cithara in cithara
et voce psalmi. in tubis ductilibus et voce tube cornee. Iubilate

CE 12

Location: Paris, Bibl. Nationale, MS Smith-Lesouëf 21, f. 145v (Psalter).

Medium: Manuscript miniature

Dating: c. 1280 (Pfändtner 1996).

Artist: Jacopino da Reggio

Provenance: Bologna

Iconographical context: Psalm 97

Number of cetre: 1

S***ize***: c. 1.5 cm

Comments: Note similar body shape with **CE 3a** and **3e**. Image shows a clear bordun-string off the fingerboard; this feature, together with the general body shape, offers some similarity to examples from the Assisi cetra group (see **CE 15**). Pfändtner 2004, 191, erroneously describes the musician as a "fiddler", whereas in Pfändtner 1996, "Liste A 5," the same figure is described as a "hockender Lautenspieler" (squatting lute player). Four strings, five pegs (?).

Pfändtner speaks of a "more independent style of figures" in this manuscript than in its sister manuscript MS 346 as regards Byzantine models. Despite the focus upon a certain Byzantine influence in the iconography of both sources, a survey of 11th-13th c. Byzantine Psalters has thus far not produced a horned-shouldered instrument with any real similarity to the cetra found on folio 145v of the Smith-Lesouëf manuscript. See for example the extensive survey in Cutler 1984.

Jacopino da Reggio is thought to have been influenced by works at the Basilica of San Francesco in Assisi during his period of activity, c. 1265-1285 (Alessandro Conti, Grove Online

21.09.17 http://www.oxfordartonline.com/subscriber/article/grove/art/T043119?q=jacopino+da+reggio&search=quick&pos=1&_start=1#firsthit). This might suggest that he was familiar with Cimabue's work in the cathedral, including **CE 10**.

BibliographyA: Pfändtner 1996, lxxiii-iv; Pfändtner 2004, 191; Evans 2004, 472-473.

BibliographyM: Margerum 2010, II, 291.

CE 12

CE 13

CE 13

Location: San Lorenzo de El Escorial, Biblioteca de El Escorial, MS. a.I.5., f. 235

Medium: Miniature

Dating: c. 1290 (Pfändtner 1996, xx); c. 1295-1300 (Conti 1981).

Artist: Anonymous; one artist, out of at least three in total, responsible for a large percentage of the miniatures, including f. 235 (Pfändtner 1996, xx).

Provenance: Bologna, "late Second style" of Bolognese manuscript illumination (Pfändtner 1996, xx).

Iconographical context: Bible; Psalm 80, musicians in marginal medaillons

Number of cetre: 1

S***ize***: c. 2.2-2.3 cm

Comments: The body shape is reminiscent of **CE 5**. Due to the artistic convention of depicting the oval peg-head in a particular manner in this period (see Appendix I, Ex. 12) the illustration requires some orientation to interpret, and has been consistently misinterpreted in publications (since Young 1984) as a unique possible source for the argument of a "thumb-hole cetra", in other words, a citole in a source of Bolognese illumination. By comparing with the sources named above, the artist's intention to paint a peg-head is clear, although he has attached the elongated ovoid - with seven pegs - directly to the body and neglected any sort of fingerboard.

Instrument referred to as "lute" by Pfändtner (Pfändtner 1996, Liste A 5).

BibliographyA: Pfändtner 1996, xx-xxi.

BibliographyM: Young 1984.

CE 13

CE 14

CE 14

Location: Padova, Scrovegni Chapel

Medium: Fresco

Dating: 1305-1307

Artist: Giotto

Provenance: Tuscan-Umbrian

Iconographical* c*ontext: Dio manda Gabriele alla Vergine / God sends Gabriel to the Virgin.

Number of cetre: 1

***Size*:**

Comments: This source contains a partial view of cetra: the upper half of the body, neck and peghead are visible. The shape is similar to **CE 8**. With twelve T-shaped pegs, the peghead has slight curve backwards. The strings are shown, but are very lightly present; there are four-six strings on the treble side, possibly grouped in pairs (three courses are apparently visible), but any lower strings are harder to recognize on the fingerboard. The frets are either severely faded or absent altogether. The bordun string(s) are not recognizable in the present state, although given the placement of the pegs, a possibility of a bordun is present.

BibliographyA: Jacobus 2008.

BibliographyM:

CE 14

CE 14

CE 15

CE 15

Location: Assisi, Basilica inferiore di San Francesco, vault ribs of presbytery.

Medium: Fresco

Dating: c. 1310-1315 (Settis 2002; Malafarina 2005).

Artist: Workshop of Giotto (*Parente di Giotto* and *Maestro delle vele*).

Provenance: Assisi

Iconographical context: Elders of the Apocalypse. The frescoes are located on both sides on each of the four arms of the X - shaped crossing of the vault of the presbytery of the Lower Basilica (see images below). The four sections of the vault show St. Francis in Glory and the three principal Franciscan virtues, Poverty, Obedience and Chastity. At the center of the X is a circle with the image of God.

Number of cetre: 16, labelled alphabetically here as **15a, 15b, 15c**, etc.

Size: Largest full-body image = c. 50-70 cm.

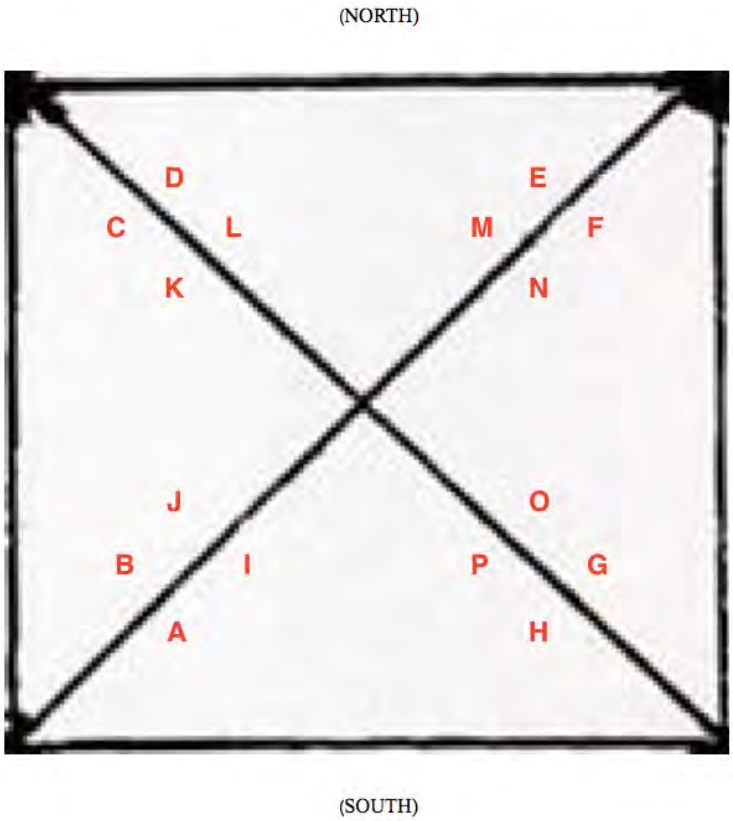
Comments: This is an important cycle of Elders representations. The twenty-four Elders are uniformly depicted with crown and halo. The three different stages of action which they depict as the eye ascends the vault partitions towards God (instrument held, then played, then playing stopped) is suggestive of the narrative progression of John's vision. The sixteen cetre are depicted in surprising detail, many showing unique details including several different fret arrangements. **15a-15h** are only partially shown, due to the facing positions of the Elders, the remainder **15i-15p** are frontal and fully shown. **15k** shows an intimate familiarity of the artist with the cetra, possibly as a player: each string pair is strung from one long string, with precise details of attachment at the pegs and shared string-holder projections.

The following photos show the location of the Elders with the cetre.

Lower Church, Transept, facing north, showing four vault partitions joining at center of vault.

Both sides of each of the four vault partition arms leading up to God (= eight sides in total) feature the same pattern of eight figures enclosed within circles. These figures are, from low to high: 1 - angel, 2 - angel, 3 - angel holding golden vessel, 4 - Elder turned sideways in the direction of God, holding upright a partially visible cetra in one hand while the other hand is held up in an indicative gesture toward God (i.e., the instrument is being held only, not being played or tuned), 5 - Elder with frontally-held, fully visible cetra, all in the act of playing, with the exception of one Elder who is tuning his instrument (see 14L below), 6 - Elder without instrument, 7 - oil lamp, 8 - candlestick.

Lower Church, Transept, vault partition: Eight ascending medallions showing, left to right, angel, angel, angel, Elder, Elder, Elder, censer, cherub; red arrows show positions of Elders with cetre.



This diagram shows the position of each Elder.

The twenty-four Elders are uniformly depicted with crown and halo. The three different stages of action which they carry out as the eye ascends the vault partitions towards God (instrument held, then played, then playing stopped) is suggestive of the narrative progression of John's vision.

Winternitz 1961, 57-65, calls the Elders prophets: "A number of medaillons in the lower church in Assisi, S Francesco, shows prophets (*sic*) holding cittern-like instruments painted by followers of Giotto."

BibliographyA: Emerson / MacGinn 1992, 238-239; Bonsanti 2002; Malafarina 2005; Malafarina 2014.

BibliographyM: Brown 1978, 139 (footnote 43: "A number of medallions in the lower church in Assisi, S. Francesco, show prophets holding cittern-like instruments painted by followers of Giotto"); Young 1984; Della Porta/Genovesi 1984; Brown 1985 Corpus; Beck 2005, 155; Margerum 2010.

CE 15a

CE 15b

CE 15c

CE 15d

CE 15e

CE 15f

CE 15g

CE 15h

CE 15i

CE 15j

CE 15k

CE 15l

CE 15m

CE 15n

CE 150

CE 15p

CE 16

CE 16

Location: London, British Library, Additional MS 47672, f. 471 (Bible of Clement VII).

Medium: Miniature

Dating: c. 1330 (Fleck 2010, 115).

Artist: Pietro Cavallini

Provenance: Naples

Iconographical* c*ontext: Elders of the Apocalypse

Number of cetre: 3

Size: MS: c. 1.1-1.3 cm

Comments: The cetre on the left and in the middle have three strings, while the one to the right has four. The tiny image size precludes detailed depiction. The color of the plectra, white, matches the strings and suggests that old string pieces were used as plectra, as in previous source **CE 15**. There are possible very faint traces of fret marks (?), and the artist's efforts were constrained because of size limitations. The body shape is that of an elongated Antelami form (**CE 5**).

BibliographyA: Fleck 2010

BibliographyM: Remnant 1980

Photo: <http://www.bl.uk/manuscripts/Viewer.aspx?ref=add_ms_47672_fs001r> (accessed 19.12.2017.).

CE 16

CE 16

CE 17

CE 17

Location: Genève, Bibliothèque de Genève, Comites Latentes 15, f. 78.

Medium: Psalter, miniature

Dating: 1335-1350

Artist: Workshop of Cristoforo Orimina

Provenance: Naples

Iconographical* c*ontext: Psalms of David

Number of cetre: 1

Size: 1.1-1.2 cm

Comments: The apparent presence of a carved head (or trefoil?) makes this the earliest iconographical cetra source to show this feature. The body seems lightly shouldered, but is not clear in detail. The strings run in any case to the end.

BibliographyA: Musto 2013.

BibliographyM:

CE 17

CE 18

CE 18

Location: Wien, Österreichische Nationalbibliothek MS 1191, f. 453v.

Medium: Bible, miniature

Dating: Third quarter 14th c. (Lenzo 157).

Artist: Cristoforo Oriminia

Provenance: Naples, court of Giovanna I (d. 1382).

Iconographical context: Apocalypse

Number of cetre: 1

S***ize***:

Comments: As with other Neapolitan sources, image size is exceedingly small and details are lacking regarding features of these instruments. These are plucked ovoid instruments with a clear morphological similarity with **CE 11**.

BibliographyA: Hermann 1930; Schmitt 1970.

BibliographyM:

CE 18

CE 19

CE 19

Location: Padova, Baptistry of Duomo, cupola.

Medium: Fresco

Dating: 1376-1378 (Brown 1985, 226); third quarter 14th c. (Lenzo 157).

Artist: Giusto de' Menabuoi

Provenance: Florentine

Iconographical context: Christ Pantocrator (Paradiso).

Number of cetre: 1

S***ize***:

Comments: This image is difficult to assess. The upper section of the body (neck joint area) and neck, if there is one, are completely hidden, making a conclusive identification of the instrument as a cetra impossible. The visible shape, however, is unlike any psaltery image that I have seen, and I would propose a cautious possibility that this is indeed an image of a cetra. It should at least be considered as a possible sub-type of plucked chordophones with corners on all four body bouts (compare **CE 22;** Appendix I, Ex. 16, 21, 26).

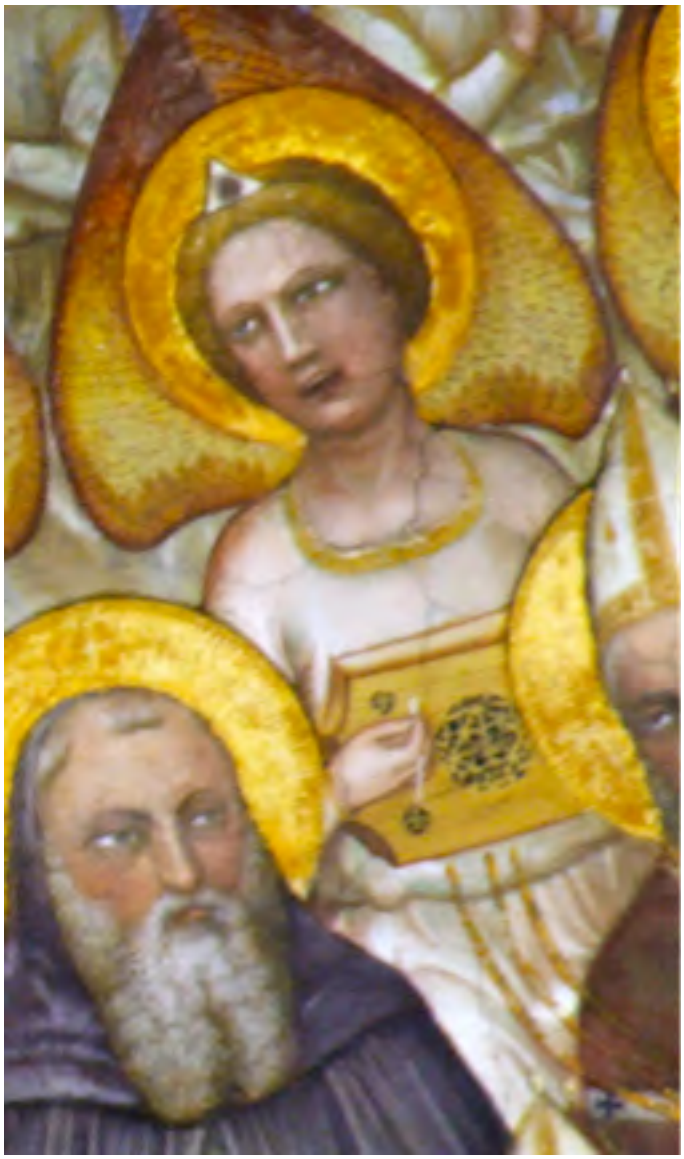
BibliographyA: Foffani 1988; Spiazzi 1989.

BibliographyM: Brown 1985, 226-227; Facchin 1996.

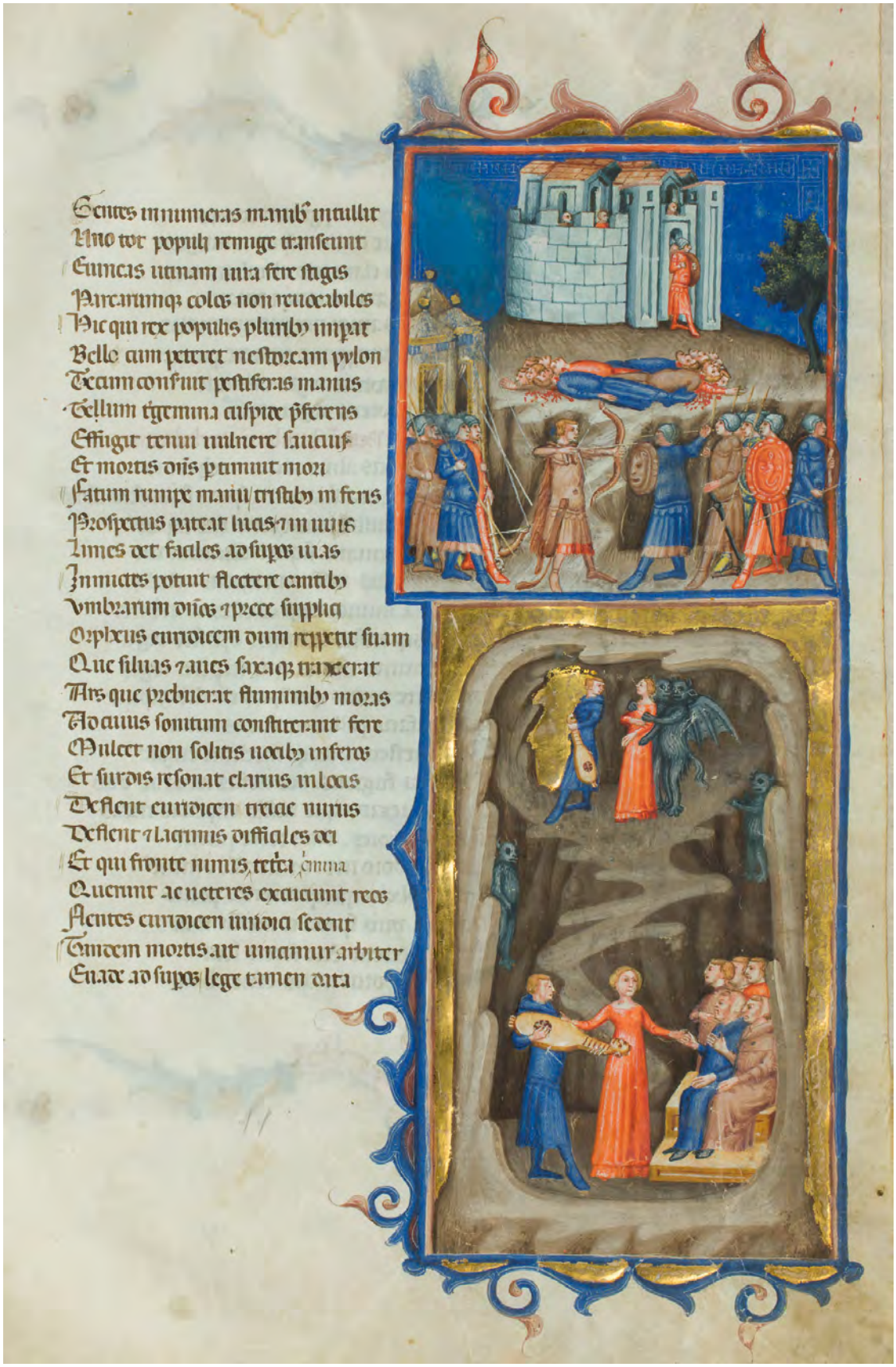
CE 19

CE 19

CE 19



CE 20



Centum innumeras manib' intullit
Uno tot populi remige transeunt
Cuncta uanam intra fere stagis
Parcaumq; colos non reuocabiles
Hic qui rex populis plurib' impat
Bello cum petiret nestoream pylon
Team confunt pestiferas manus
Tellum tigrinna cuspide pferens
Effugit tenui uulnere sauauf
Et mortis oris p tamnit mori
Fatum rumpe manu tristib' m feris
Prospectus pateat luas 7 m uuis
Limes det fatales ad supos uias
Inmiats potuit flectere cantib'
Umbranum oris 7 precet supplicq
Orpheus eurodicem dum reperat suam
Que silvas 7 aues saxaq; traxerat
Ars que prebuerat flumimib' mors
Ad cuius sonitum constiterant fere
Mulcet non solus uocib' inferos
Et surdis resonat clarus in locis
Deflent eurodicen triac numis
Deflent 7 lacrimis diffiales oci
Et qui fronte nimis tetra gnma
Quenimt ac neteres exacuunt reos
Flentes eurodicen iniqua secent
Tamcem mortis aut unamur arbiter
Eurac ad supos lege tamen data

CE 20

Location: Napoli, Biblioteca Governativa dei Girolamini, Codice CF 2-5, f. 9r, f. 11r.

Medium: Miniature

Dating: Second half 14th c. (Lenzo 2011, 157).

Artist: Master of Seneca

Provenance: Naples, court of Giovanna I (d. 1382).

Iconographical context: Tragedies of Seneca

Number of cetre: 3 (**20a** = Verse 451; **20b/c** = Verses 569-571, 589).

Size: largest (**20c**) = c. 3 cm.

Comments: This represents the earliest Humanist cetra source in the catalog, if "Humanist" may be - at least partly - defined as "manifesting a new intensity of interest in Classical literature"; as seen, for example, in the figure of Petrarch. Petrarch visited in Naples 1341-1343, a visit which "laid the foundations of Humanism in the Angevin kingdom" (Lenzo 2011, 164).

This is an early source in the catalog featuring a cetra with a carved head (see also **CE 17**), which may have been a Neapolitan innovation; it will become common in the 15th-century. The frets are presumably wooden, as they are clearly not tied-on, lute-style frets. 21a has trefoil carvings in the rose and a three-pronged string-holder. 21c has six distinct frets, while 21b has five. 21a has a few fret marks in evidence. All bodies show no tapering depth as on some later 15th-c. examples.

Regarding the context: a group of nine tragedies have survived, assigned by tradition to Senecan authorship. The place of the tragedies of Seneca in literature is unique. They stand, with the exception of a few fragments, as the sole surviving representatives of an extensive

Roman product in the tragic drama. They therefore serve as the only connecting link between ancient and modern tragedy. They parallel more or less closely the tragedies of Aeschylus, Sophocles, and Euripides ; and the Greek and Roman product in literature along similar lines cannot be better studied than by a comparison of these Senecan plays with their Greek prototypes — a comparison which is not possible in comedy, since, unfortunately, the Greek originals of Plautus and Terence have not come down to us, except in comparatively scanty fragments.

Verse 451: *Pastor Phereos Delius pavit greges* ("the Delian as a shepherd tended flocks at Pherae" - Apollo came from Delius). In miniature 44 (Lenzo 2011), the moment when Apollo was a keeper of the flocks of Admetus is depicted. The god of the sun is represented colored red, color of fire, and the lyre, his traditional attribute, in the thumbnail appears, moreover, a woman not named in the text, probably Alcestis.

Verses 569-571, 589: The miniature 61 depicts the myth of Orpheus and Eurydice. The figure recounts the events in sequence: in the foreground Orpheus with his lyre and Eurydice convince an assembly, in which you see two men dressed as judges; Orfeo on the background, that began towards the exit, turns watching his beloved. Devils are an addition to the artist place the afterlife scene. The figure of Orpheus was interpreted as Figura Christi. Orpheus, in fact, is for medieval man a metaphor for the Good Shepherd, and therefore for Christ. (from https://archive.org/stream tragedieswithengo1seneuoft/ tragedieswithengo1seneuoft_djvu.txt)

BibliographyA: Lenzo 2011

BibliographyM: Testi, Flavio, *La Musica Italiana nel Medioevo e nel Rinascimento*, 1969; Young 1984, 79.

CE 20a

Numinum liquet repetit. mentimur iouem.
Junonis odio creta. Iacis. Quo molas iouem
Mortale celo non potest iungi genus
Amph. Communis ista plibus causa deis
Iacus Semiuiri ne fuerant ante q̃ fieret deo
Amph. Pastor phereos. delui pauit gregis
Iac. Sed non omnes exul errauit plagis
Amph Quem profugi tra mari errantes edidit
Iacus Aum monstra seua phebus aut timuit fera
Amph Primus sagittas imbuit phebi draco
Quam grauia parvus tullerit ignoras mala
Ematris utero fulmine eiectus puer
Mox fulminati proximus patri stetit
Quid qui gubnat astra qui nubes quatit
Non latuit infans nuppis excesse sycai
Soluta tanti pecta natales hint
Semperq; magno constitit nasci deum
Iacus. Quecaiq; miser uideris hominem sacas
Amph Quemcaiq; fortez uideris miser negres
Iacus Fortem uocemus amus ex humeris leo
Domum puelle factus 7 clauia excidit
Fulsitq; pictum uestis syrorum latus
Fortem uocemus amus horrentes come
Mouere nardo lauae qui notas manus
Tympano uirilem tympani mouit sonum
Mitram ferocem barbara frontem premens
Amph. Non euitesat bachus effusos tener

CE 20a

CE 20a

CE 20b/c

CE 20b

CE 20c

CE 21

CE 21

Location: Milano, Pinacoteca di Brera, Valle Romita Altarpiece.

Medium: Tempera on wood

Dating: 1408 (De Marchi 2011); 1412 (Christiansen 1978, 5).

Artist: Gentile da Fabriano

Provenance: Commissioned by the Zoccolanti (Observant Franciscans) at the hermitage of Valle Romita Chiavelli, or by Chiavello Chiavelli, Lord of Fabriano; painted by GdF in Venice; GdF had been supported by the lord of Fabriano Chiavello Chiavelli (died in Venice 1412) who had a close relationship with Gian Galeazzo Visconti; GdF was in Milan in 1395, he trained in Pavia. "Evidently painted for the high altar of Santa Maria di Valdisasso near Fabriano" (Christiansen 1978, 5).

Iconographical* c*ontext: Altarpiece: polyptych of Coronation of the Virgin flanked by Saints Jerome, Francis, Mary Magdalene and Dominic and scenes from the lives of the saints.

Number of cetre depicted: 1

Size: c. 5-6 cm

Comments: Source of importance for early Humanist cetra. Eight angels are at the feet of God and Virgin, two outermost face the viewer as a kind of invitational interface to join in praise.

BibliographyA: Degenhart 1960; Berenson 1968; Christiansen 1979; De Marchi 2011.

BibliographyM: mentioned in Brown 1978, 131: "The cittern with its characteristic winged tips in Gentile da Fabriano's Coronation of the Virgin in Milan may be some sort of missing link between earlier and later Italian citterns."

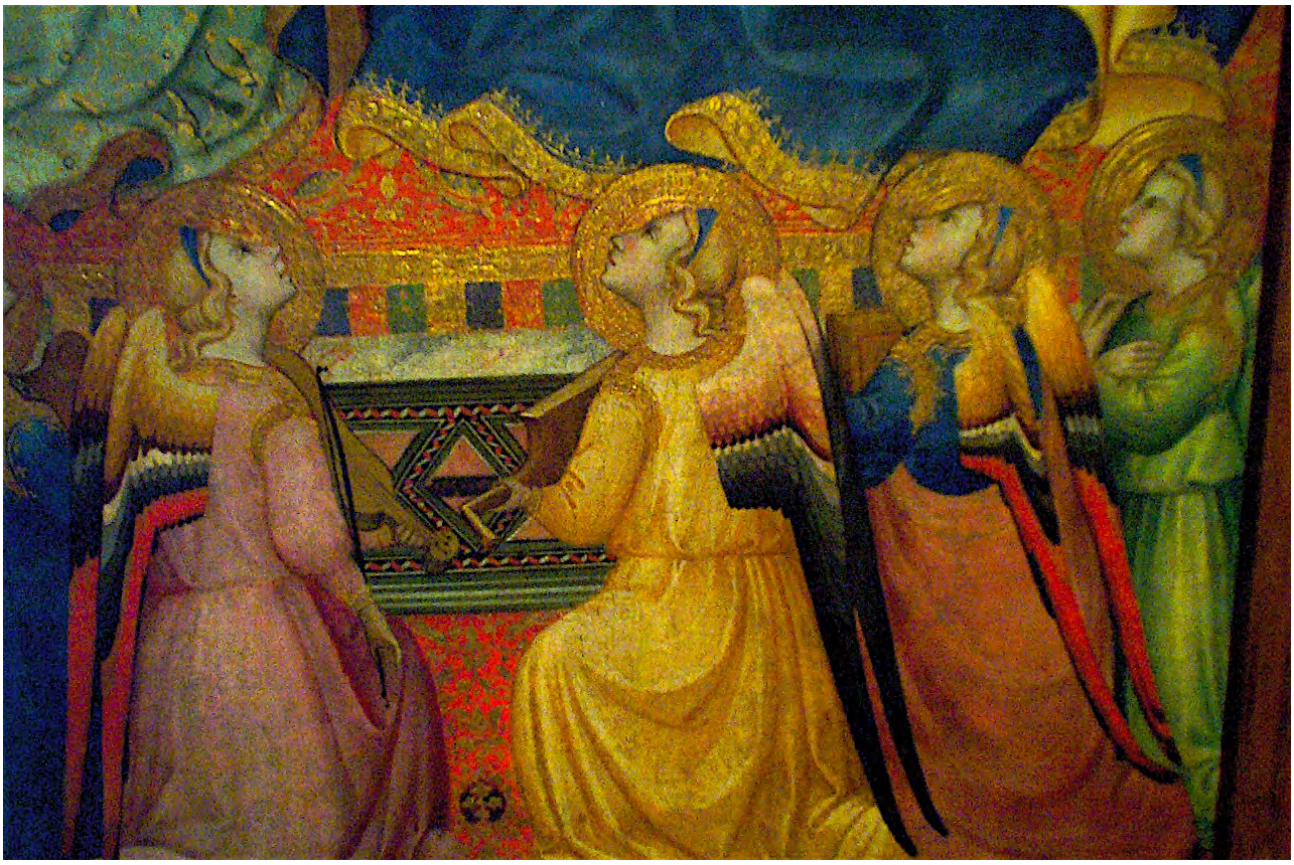
Billiet 2008, 114, does not interpret this instrument as a cetra: "A *guiterne*, or a type of lute of four single strings or courses, serves as a counterpart to the gittern placed at the extreme left of the panel, but the two instruments are not rigorously identical. The instrument could be a *mandore*, called *mandora* in Italian, according to the questionable hypothesis of certain organologists: the oval soundboard, the strongly arched back, the short neck, the fretted fingerboard are common characteristics with the lute. But its dimensions were smaller than those of that instrument. The bridge did not resemble a lute bridge. It was easier to play than the lute." (A specific reference to the *mandora* hypothesis is not provided.)

A second article in the same volume (Lacchè 2008) devoted to Gentile da Fabriano and music, Herczog 2008, 96, mentions "la cetra" in a footnote reference to the symbolic meaning of the cithara for Rabanus Maurus and Albertus Magnus, but does not use the term to describe the instrument in the painting of Gentile discussed above.

CE 21

CE 21

CE 22



CE 22

Location: Firenze, S. Croce, Cappella Medici.

Medium: Fresco

Dating: c. 1408-1409

Artist: Lorenzo di Niccolò

Provenance: Florentine

Iconographical context: Coronation of the Virgin

Number of cetre: 1

S***ize***:

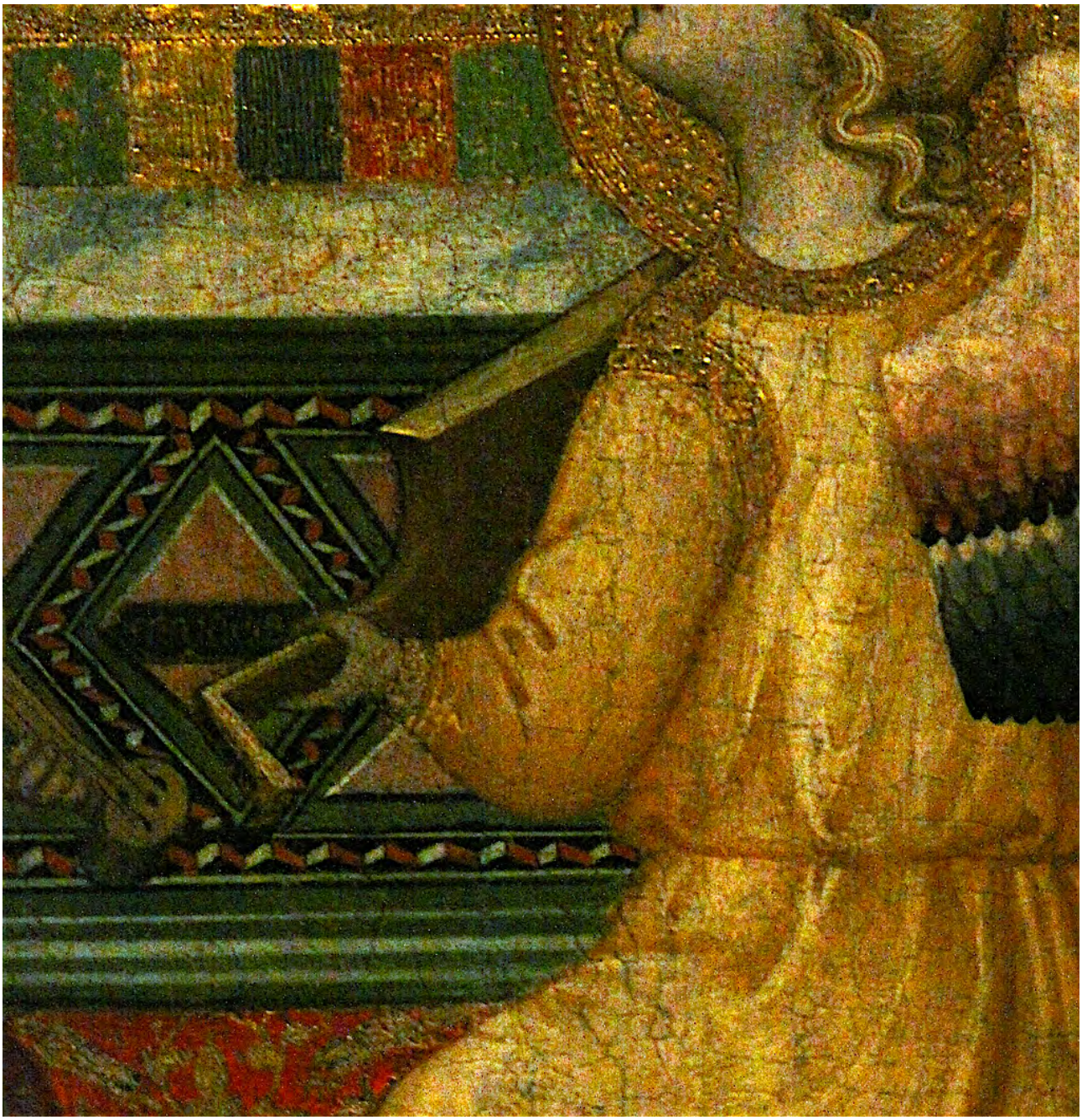
Comments: This instrument is only partly seen from behind, showing pointed upper bouts on a flat-backed body, suggestive perhaps of another Florentine source, **CE 19**. While the lute-style peg-head is unexpected on this type of body, it does occur on two other later sources given in Appendix I, Ex. 18 and 26. For further comment on this body form as a Florentine variant of spatulate cetra form, see **Chapter 4**.

BibliographyA: Berenson 1963, I, 122.

BibliographyM: Brown 1985, 252-253.

CE 22

CE 22



CE 23

CE 23

Location: Galatina, Basilica di Santa Caterina di Alessandria.

Medium: Fresco

Dating: c. 1390's-1430; scholars have not found a consensus on the precise dating, although restorer Sergio Fusetti gives a date of 1420's, which I find convincing (private communication, Fusetti 2017).

Artist: Workshop of Francesco d'Arezzo

Provenance: Franciscan church built 1390; frescoes Marche school, Giotto influence (private communication, Fusetti 2017).

Iconographical context: For the cetra image, the context is the Genesis cycle (Ciclo della Genesi), with angels with instruments in diamond-shape medaillons. Some 40 musical instruments have been depicted with great care, and the entire church is a magnificent kind of visual encyclopedia of late medieval knowledge.

Number of cetre depicted: 1

Size:

Comments: This cetra shows five (possibly six?) courses: from top to bottom, 1 (or 2?) / 2 / 2 / 2 / 2 / ? 1 or 2 bordun ? Exceedingly thin horns and squared-off base might suggest a built-up construction, with each side glued to end block and heel block, although this is not conclusive. The nut end of the fingerboard seems to be missing the first fret; see **CE 36** for a possible explanation of this feature.

The upper side of the instrument shows a mark which might be taken as a side-hole; if this interpretation is correct it might then be indicative of built-up construction, as is assumed to have been the case with **CE 30** and **CE 32**.

BibliographyA: Russo 2005; Castaldo 2006; personal communication with Sergio Fusetti who restored the frescoes in S. Caterina during the 1980's (13.04.2017).

BibliographyM:

Photo: Giordano Ceccotti

CE 23

CE 23

CE 24

CE 24

Location: Firenze, Museo dell'Opere del Duomo.

Medium: Relief sculpture

Dating: 1432-1438 (Hammerstein).

Artist: Luca della Robbia

Provenance: Florence. Della Robbia would have known the works of Gentile da Fabriano. As the Humanist architect Leon Battista Alberti wrote in 1436, Della Robbia was one of the major figures of the Florentine artistic "rebirth".

Iconographical* c*ontext: So-called *Cantoria* ("loft for singers"), this was originally positioned above the portal of the North Sacristy of the Duomo; it shows instruments, as well as singers and dancers, in like-groups following the Psalms' descriptions of instruments given in the plural.[22] See Hamm, 251.

Number of cetre depicted: 2 (**24a** - left, **24b** - right).

Size: c. 40-60 cm

Comments: One of a total of five existing three-dimensional cetra sources (**CE 5**, **8**, **24**, **25**, **47**), this item's chronological predecessors **CE 5** and **8** pre-date it by two centuries or more. On both instruments **24a** and **24b**, the profile of the body sides below the edges of the soundboard may suggest curved profile of the back; such an interpretation is by no means unequivocal, but if it were, then this source is unique in representing a curved or ridged profile to the back (a ridged profile is well-known from representations of various forms of ancient kithara). **24a** shows nine pegs and ten strings (5 x 2) whereas **24b** has nine pegs and nine strings in five courses with a single top. Both instruments feature carved female

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[22] For a similar iconographical monument, see the miniature program of the 13th-c. Cantigas de Santa Maria, Biblioteca de El Escorial MS B.I.2

heads, presumably symbolic for the Muses, as led by Apollo Musagetes; see also the catalog entries under **CE 25**.

These well-known carvings are perhaps the best examples of projecting frets on the upper edge of the fingerboard, the function of which has puzzled many observers. One early commentator who mentioned the Della Robbia cetre, including the prominent, elongated frets was Valentin Denis (Denis 1944).[23] For a discussion of the interpretation of this feature, see Chapter 4.

BibliographyA: Gentilini 2003.

BibliographyM: Denis 1944, 117-120, Pl 114; Winternitz 1961, Plate 13b; Buchner 1981; Hammerstein 1962, 248 - 252**.**

Photos: Winternitz Archive at RESEARCH CENTER FOR MUSIC ICONOGRAPHY (RCMI) at Graduate Center CUNY, Zdravko Blazekovic.

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[23] Denis comments (117) "Another also essential Italian plucked instrument is the cittern. It comes from the East. In the early Middle Ages it is a plucked fiddle; the body has the same shape as the fiddle. In the 15th century it is more independent. Luca della Robbia depicted the cittern twice in his famous Cantoria in S Maria del Fiore in Florence. It is thanks to this sculpture, and other art works, that the 15th c cittern can be clearly defined. The body is oval, the flat soundboard and back are connected by side pieces. The neck is clearly separated from the body, it is not, like on most plucked instruments, equipped with gut frets or thin frets (saddles), on the contrary, small grooves which divide the neck in four or five boxes. Nine pegs are in the trapezoid-form peghead, with carved human head at the top end. Four courses plus a single top are attached to a comb (at the end of the body). The plucking hands of the two female musicians cover the soundholes, whose existence however cannot be doubted. In contrast to the lute and mandora, these citterns are plucked with the fingers."
Denis adds (p 120) that Della Robbia's cittern "indeed has a neck, which not only is divided into four or five boxes by grooves - which makes of each box, as it were, a fingerboard, but each of these frets is lengthened on the left side. (footnote: 'The real purpose of this lengthening is not yet clarified.') The more or less same system can be seen on two Florentine prints from about 1485 (Pl 116 - drawing). Here one counts six of those enigmatic keys. With the exception of this feature and the use of the plectrum, this six-string plucked instrument has nothing in common with the cittern. The general profile, stringholder and sound hole are fully like the guitar. Thus we have a real instrument type, a guitar-cittern, that was soon abandoned by instrument makers."

CE 24

CE 24a

CE 24b

CE 25

CE 25

Location: Rimini, San Francesco ('Tempio Malatestiano').

Medium: Relief sculpture

Dating: c. 1456 (Pozza)

Artist: Agostino di Duccio

Provenance: Florentine, born 1418; would have seen the della Robbia cantoria; studied sculpture in Venice in 1446, worked at Tempio in Rimini 1449-1457.

Iconographical* c*ontext: Zodiac (Mercury), Allegory (Musica), Mythology (Apollo).

Number of cetre depicted: 3 (**25a** = Musica; **25b** = Apollo; **25c** = Mercury).

Size: **25a** = 33 cm; others similar.

Comments: Noticeable relative small size of all three, which is uncomfortably small if taken literally; all three show wing-block-joint, making built-up construction likely.

CE 25a has six strings, a flower- shaped rose, but also elaborate carving (or painting?) on the soundboard. There are two side smaller roses with portrait carvings, with the rest of the decoration possibly being painted. There are seven fret blocks and a clear horn-block-body joint construction; one could conceivably argue that the elaborate decoration of the soundboard was justified to the up-close proximity of the viewer at floor level, whereas the other two cetre in the church are further distanced and less scrutinized.

CE 25b has a carved head which looks like a child /putto /angel? rather than a woman. It has seven (possibly eight?) kollopes-frets.

CE 25c has four strings, a rosebud (?) peg-head carving; a flower-like rose design; the projecting side of frets is reversed, but this can be explained by the symmetry with two other

instruments, that is, this one is turned upside down. While the distances between the frets increase correctly for this angle, the exposed fret ends have been treated as if the instrument were held like the others.

Church was heavily damaged in WWII; there are no obvious signs of restorative intervention on the three cetre.

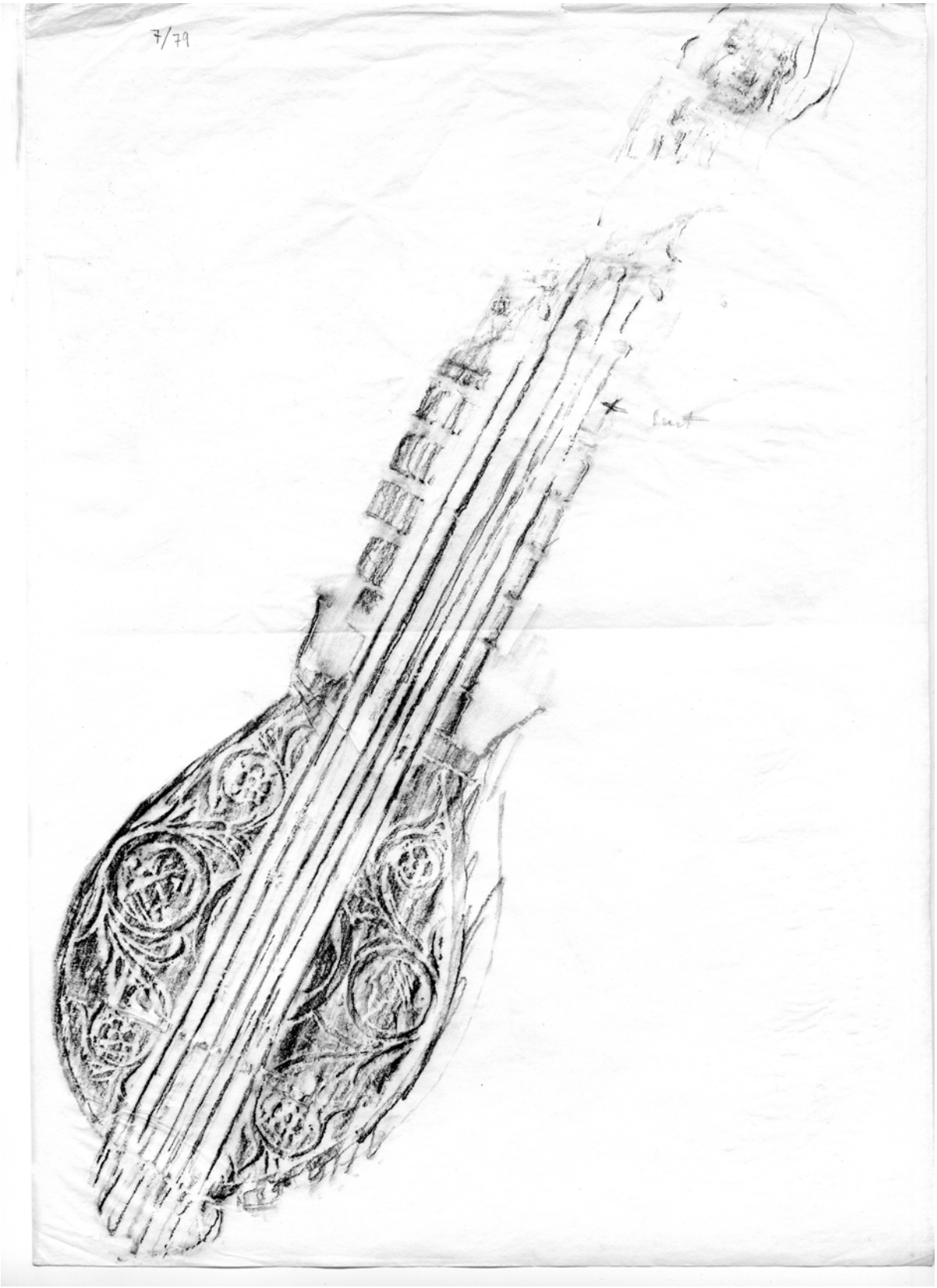
BibliographyA: Settis 2011.

BibliographyM: Winternitz 1961.

Photos: author's photos below include in situ pencil rubbing of **25a**.

CE 25a

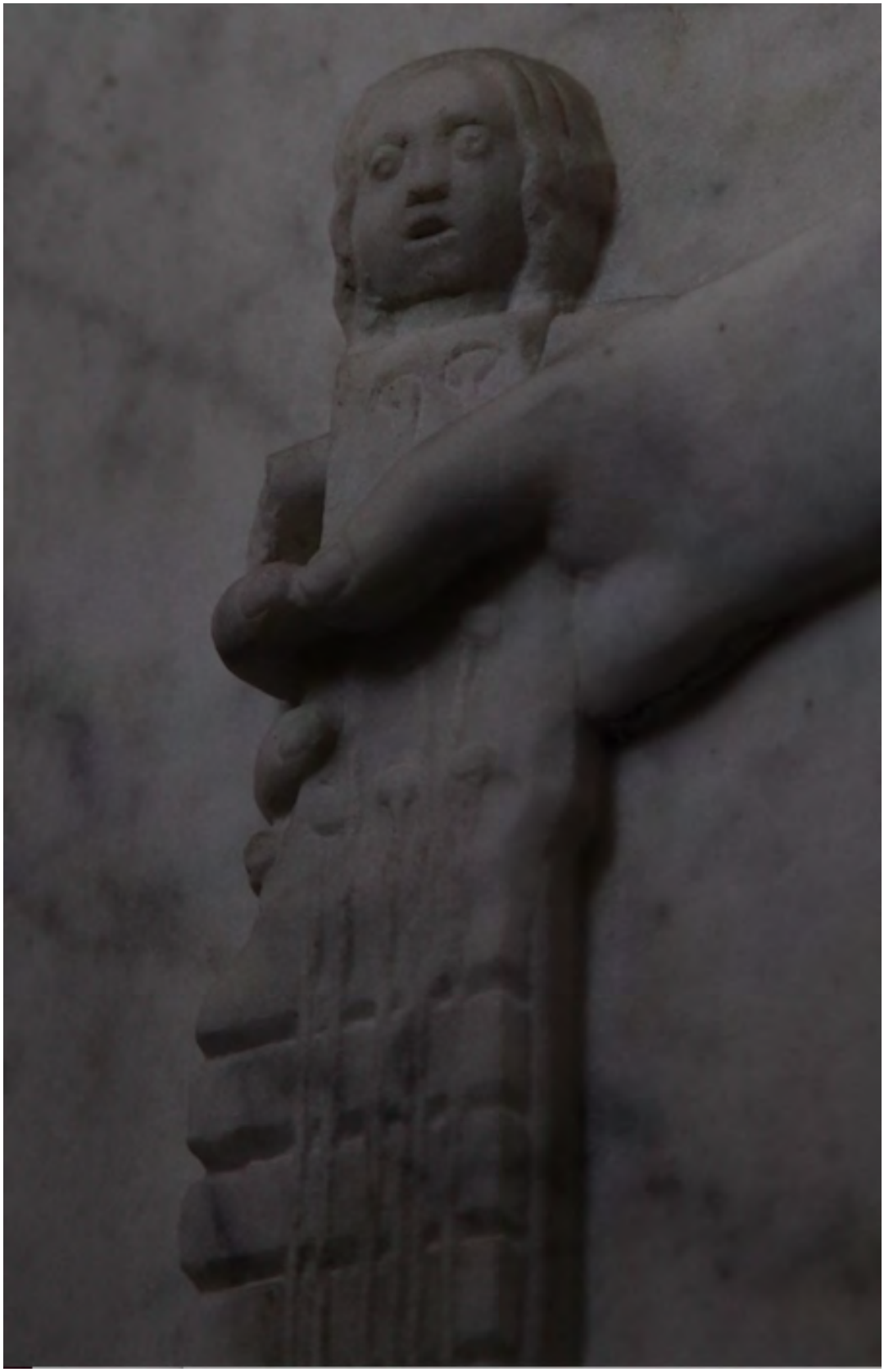
CE 25a



CE 25a

CE 25a

CE 25a



CE 25b

CE 25b

CE 25b

CE 25b

CE 25c

CE 25c

CE 26

CE 26

Location: Ortona, Museo Diocesano.

Medium: Painting

Dating: Mid-15th c., 1440-1450?

Artist: Unknown

Provenance: Cappella del Salvatore della Cattedrale of Ortona, originally the family chapel of Riccardi family from Lucca.

Iconographical c*ontext*: Volto Santo di Lucca / Holy Face of Lucca, Legend of the Fiddler. Thematic relation with Franciscan *Joculatores Domini* (see Loewen 2013, 57-60).

Number of cetre depicted: 1

Size: c. 40-50 cm

Comments: The painting shows apparent metal strings (gold color, different from lute strings).

BibliographyA: https://www.museodiocesanoortona.it/en/visit-the-museum/museum-guide/il-volto-santo-di-lucca

BibliographyM: (CD-ROM)Alessandra Bonomo, Sacred Music: Image and Reality, Innsbruck : Universität Innsbruck. Institut für Musikwissenschaft, cop. 2003.; Olimpia Goldys, "Ein Mysteriöser Spielmann: zu den kulturgeschichtlichen Aspekten der 'Spielmanns-Ikonographie' in den Volto-Santo-/ Kümmernis-Darstellungen vom 13. bis zum 20. Jahrhundert," *Music in Art,* Vol XXXIII, no. 1-2 (2008), 149-167.

I owe many thanks to Ivo Magherini, who kindly gave me a poster which included this image many years ago.

CE 26

CE 26

CE 26

CE 27

Location: Padova, Basilica del Santo, choir stalls; **LOST** (burned 1749).

Medium: Intarsia

Dating: 1462 (Beck 2001, 5)

Artist: Lorenzo Canozi (1425 - 1477), Cristoforo Canozi.

Provenance:

Iconographical* c*ontext: Depictions of musical instruments: "*cetera, liuto, la chiarina, il monochordo, la sampogna,i timpani, la tromba*" (cetra, lute, clarion, monochord, bagpipe, timpani, trumpet).

Number of cetre depicted: 1

Size:

Comments: Lorenzo Canozi worked as an *intarsiatore* on the *studiolo* at *Belfiore* for Leonello d'Este between 1449-1453/4 (work now lost);

BibliographyA: Gonzati, La Basilica si S. Antonio di Padova, p. 71.;

BibliographyM: Beck 2001.

CE 28

Location: Private collection of Dr. Karl Voll (1867-1917, München); whereabouts unknown (lost?).

Medium: Stringed instrument "Cister" (cittern)

Dating: 1462

Artist: "E. S. MCCCCLXII" on label inside instrument (Zuth 1926, 257); Zuth suggested the maker was therefore Erhard Smid, a famous organ builder from Pressenberg in Bavaria during the middle of the 15th century, an idea apparently influenced by Lütgendorff. Lütgendorff 1922 documents Smid in 1433: "Smid, Erhard - Peissenberg (Bayern) 1433.....Vielleicht ist die E.S. gezeichnete Cister Dr. K. Volls in München eine Arbeit E. Smids."

Provenance: Unknown

Iconographical context: Surviving musical instrument

Number of cetre: 1

Size: Unknown

Comments: An exhibition "6. Gitarristentag" took place in the Rathaussaal in München in 1904 with "approximately 20 original lutes, the majority from the collection of Paul de Wit", according to Chauvel 1999.

Zuth wrote in 1926 that the instrument had a Gothic rose made of parchment, as well as "Kopf und Säulen am Griffbrett waren im romanischen Stil gearbeitet," which I take to mean a carved head on the pegbox (?) and "columns" (= block frets?) on the fingerboard, fashioned in Romanesque style (?).

That an actual instrument from the 15th c. might still exist is, of course, an exciting idea. Zuth saw the instrument sometime before 1926, so there was an existing object at least until then. The description of mixed Romanesque and Gothic style elements is problematic (although what those terms meant exactly is an open question), and if the rose was made of parchment only, one might think of later rose styles from the Baroque period or after, but again, the precise meaning of Zuth's term is unclear. "Columns" might suggest projecting block frets, or have a different meaning altogether. Indeed, the provenance of the missing instrument is the first question: a cetra would have been built in Italy, rather than in Germany, although a German builder living in Italy (or one who had lived there) would not be out of the question. Then again, there is no proof of what name the initials E.S. really stood for.

BibliographyA:

BibliographyM: Lütgendorff 1922; Zuth 1926; Bletschacher 1978.

CE 29

CE 29

Location: Milano, Veneranda Biblioteca Ambrosiana (E series);
London, British Museum (Dept. of Prints and Drawings), Bartsch Collection (XIII.133.30) Number 13. Vienna, Staatliche Graphische Sammlung Albertina DG1935/891 (S Series).

Medium: Print

Dating: c. 1460-1465 (E series); c. 1470-1475 (S series); first series "engraved no later than 1467" (Grunfeld 1969).

Artist: Two different artists: "Master of the E Series Tarocchi" / Anonymous ("S" Series).

Provenance: Ferrara or possibly Venice (?)

Iconographical* c*ontext: "Terpsichore XIII" (E series), "Tersichore XIII" (S series). Image of Terpsichore from so-called "Mantegna Tarocchi" cards, these are not Tarocchi cards at all but rather Humanist education aids. "E series" = Estates of Man, "S series" = Stations of Man.

Number of cetre depicted: 2 (29**a** = E series, 29**b** = S series)

Size:

Comments: See commentary of Denis 1944, 120.

BibliographyA: Hind 1938.

BibliographyM: Denis 1944, Pl. 116; Grunfeld 1969, Pl. 21 / 22; Salmen 1998, 83.

CE 29a

CE 29a

CE 29b

CE 29b

CE 30

CE 30

Location: Ferrara, Palazzo Schifanoia, Salone dei Mesi, Month of May, Triumph of Apollo.

Medium: Fresco

Dating: c. 1470 (Travagli 1994, 51); 1476-1484, http://www.wga.hu/html_m/c/cossa/schifano/3may/index.html.

Artist: Francesco del Cossa (c. 1435-c. 1477).

Provenance: Ferrara

Iconographical c*ontext*: Apollo; cetra hangs via cord from A's right wrist with right arm extended, holding the circular image of the sun (?). The depiction brings Martianus Capella's description of Musica to mind, who has small models of instruments dangling from her hand as attributes while she holds a circular shield from which "poured forth a concord of all the modes"....."In her right hand Harmony bore what appeared to be a shield, circular over-all....from her left hand the maiden held, suspended at equal length, several small models of theatrical instruments, wrought of gold." (William Harris Stahl and Richard Johnson, *Martianus Capella and the Seven Liberal Arts, Volume II, The Marriage of Philology and Mercury*, Columbia University Press 1977, 352-53). Apollo sits on a cithara-shaped throne.

Number of cetre depicted: 1

Size: c. 25-35 cm

Comments: Eight narrow-edge frets, similar to Ortona (**CE 26**). Hook with hole, but string attaching the cetra to Apollo's wrist does not seem to run through the hole. Thin horns are similar to Gubbio (**CE 32**). Possible tapering body depth (?), although definitive view is blocked by Apollo's leg. Inlaid rose (?). Apparent hole in side of body is reminiscent of Gubbio. Dark-colored binding on edge of soundboard. Exact number of pegs impossible to discern but size and placement suggests twelve (?). Carved, open-mouthed animal head

could be a lion, is also suggestive of monster's head below Apollo's feet. Built-up construction seems possible if not probable.

The frets are depicted in an unclear fashion, although they may represent blocks shown as if the viewer were standing below, looking up to the cetra in a frontal view. In other words, the (flat) top of each fret block is shown as well as the front side of the block facing the bridge.

A second interpretation could suggest fret blocks with noticeably narrower top surfaces than most seen so far; **CE 29a** might be taken as being suggestively similar. While the unique triangular frets seen in the Assisi cycle **CE 15** have apparently no flat surface areas on top, they may have been imperceptibly flattened to reduce string wear. In any case, **CE 30** is some 150 years later and may be assumed to feature metal strings. According to the writer's experience, the stability of intonation with metal strings is lessened if the space behind the fret edge is too wide, and it would be quite surprising to see triangular frets on a metal-strung instrument.

BibliographyA: Travagli 1994; Settis et al. 2007.

BibliographyM:

CE 30

CE 30

CE 30

CE 31

CE 31

Location: Cortona, Museo Diocesano.

Medium: Tempera on panel

Dating: c. 1473-1475 (Martini, 136) or later? Note that Martini writes "To understand the Assumption properly one must bear in mind that the two kneeling saints in the foreground and the second row of angels at the top are vulgar later additions; let us hope that a restoration will establish the original integrity." (Martini, 136-137) No specific source for this claim is given and it is unclear whether Martini means the upper row of angel musicians, who look just the same as the four angel musicians below (left to right, with lute, hammered dulcimer, harp and viola / lira), or the red seraphim bordering the Virgin.

Artist: Bartolomeo della Gatta (1448-1502) born in Florence, became Camaldolese monk; worked on Sistine Chapel as assistant of Perugino and Signorelli.

Provenance: Church of San Domenico, Cortona.

Iconographical context: Assumption; Virgin of Assumption Gives St Thomas her Belt.

Number of cetre depicted: 1

Size: overall size of panel: 317 cm (125 in) x 221 cm (87 in)

Comments: neck almost entirely blocked by head / halo of another angel playing smaller bowed instrument with horns also; highest fret at body-neck joint visible; body may have taper profile (?) Inset rose.

BibliographyA: Martini 1960.

BibliographyM:

CE 31

CE 31

CE 32

CE 32

Location: New York, Metropolitan Museum of Art, Gubbio studiolo.

Medium: Intarsia

Dating: c. 1478-1482 (Raggio 1996, 35).

Artist: Giuliano da Maiano (1432-1490, Florentine); attribution not definitive but likely.

Provenance: Gubbio

Iconographical context: *Studiolo*, commissioned by Federico Montefeltro.

Number of cetre depicted: 1

Size: c. 35-36 cm from left-hand corner of base (string-holder) to intersection of hourglass / book

Comments: There have been multiple restorations over the years, most recently in the 1990's. Wilmering's dedicated study of that restoration (Wilmering 1999) mentions nothing of relevance for the cetra.

Important source showing many details in unique perspective / detail. It may have relevance for providing information on construction techniques; the thin wings and varying grain directions of the inlaid pieces of wood around the heel of the neck might point towards built-up construction, including a neck which is attached to the body and not carved out of the same piece of wood as the sides of the body. It seems to this writer that the arguments for interpreting this cetra as exemplifying built-up construction are more persuasive than understanding it as having been carved from one piece.

The view expressed by Peter Forrester concerning the presence of small holes on the sides of the *chitarra battente* could make sense as an explanation for the pair of holes on this cetra (see **Chapter 4**), that is, to fasten the sides to a mold when bending them or otherwise

keeping them stable in order to glue them to other parts of the instrument (back, neck block, sound-board). If the body of this cetra had been carved out of one piece, and the back and sides were thus joined, there would have been no need for the stabilizing holes. In other words, the presence of the holes, together with the added-on horns and glued-on neck, furnish the best evidence we have, from any iconographical source, that this shows a cetra of built-up construction. At the very least, it shows (1) that the sides and back were glued to each other and not carved out of the same piece of wood, (2) that the sides were very likely formed by heating and bending one long strip of wood into a U - shape, and (3) the neck was joined to the sides after they had been bent and attached to the mould via two wooden dowels on each side.

Not every observer interprets this intarsia in the same way, and it has been pointed out to me that the perspective given to the side of the body, narrowing as it nears the lower end, could suggest a carved (from one-piece) back-and-sides, to which the neck was then attached; or both body and neck were carved out of the same piece, as in the three other instruments constructed in **Chapter 6** of this study.[24]

The six fret blocks on **CE 32** offer useful, unequivocal information about their height relative to each other - which is equal - and the profile of the top of each fret. The fret tops are flat, with all four edges of equal height. They are neither slanted (one edge higher than the other), producing a series of saw-toothed frets, nor rounded or humped on top.

The width and placement of the frets bring up the question of whether they produce a chromatic or diatonic scale when stopped. Neither possibility works out if the bridge placement is taken literally, but if the bridge is moved lower on the soundboard, the frets appear to be significantly closer to a diatonic fretting than to a chromatic one (see Comments to **CE 36** and **Chapter 4** for an extended discussion), thus establishing **CE 32** as a primary candidate for a diatonically fretted cetra, during a period when most sources suggest a chromatic layout. Of the detailed perspective studies called *intarsie*, this source alone is the strongest evidence for a diatonic fret system.

BibliographyA: Raggio and Wilmering 1996; Raggio and Wilmering 1999.

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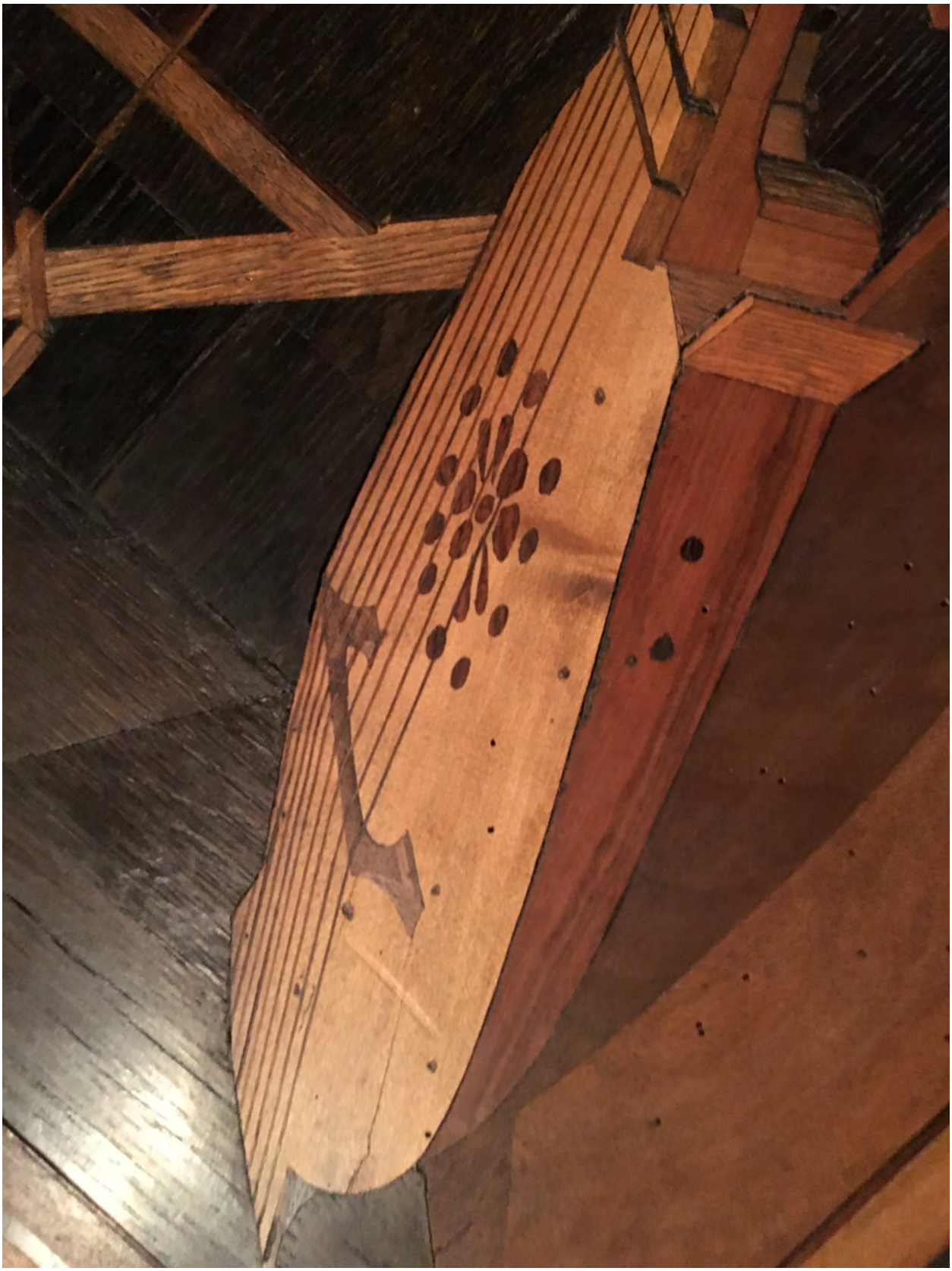
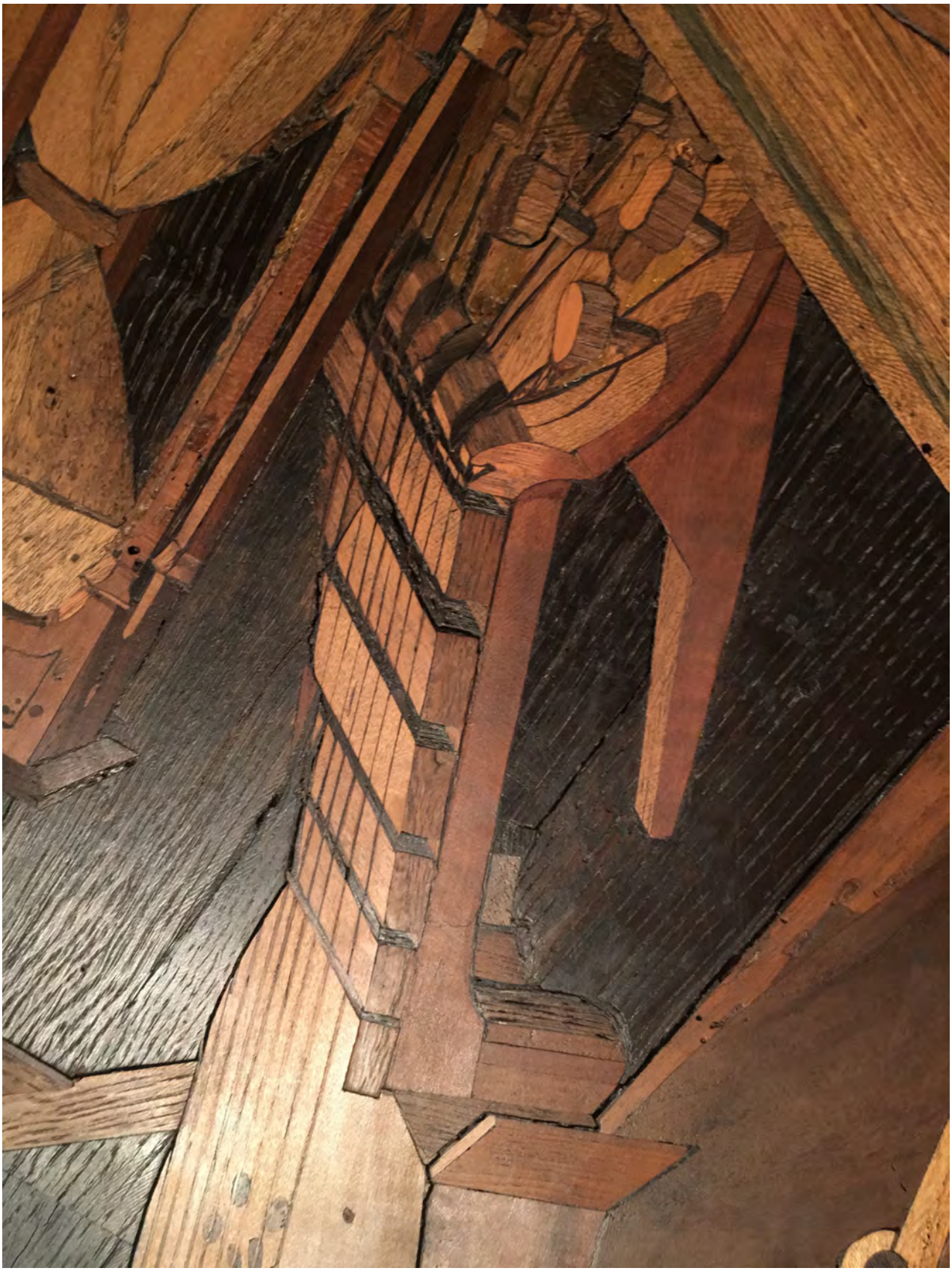
[24] Personal communication from Luca Piccioni in 2017.

BibliographyM: Wint 1942; Wint 1961.

CE 32



CE 32



CE 32

CE 32

CE 33

CE 33

Location: London, Victoria and Albert Museum, E. 1168-1921.

Medium: Manuscript illumination (choir book initial).

Dating: 1480-1490 (Victoria and Albert Museum, 2016); c. 1495 (Alexander, 1995).

Artist: Girolamo dai Libri

Provenance: Verona, perhaps commissioned for Santa Maria in Organo (V & A, 2016); "Possibly the miniature in a psalter for which Cirolanodai Libri was paid on October 7, 1502, by S. Maria in Organo" (Levi d'Ancona 1969, 21).

Iconographical c*ontext*: Initial letter B (Beatus), King David sits playing instrument, behind him stand four men (temple musicians without instruments).

Number of cetre depicted: 1

Size: c. 5.5 cm

Comments: This source shows a cetra of strikingly large size. The frets are seemingly carved out of one block of wood (same as body-neck-peghead?); the fret width increases on both sides of the fingerboard as they ascend; metal strings depicted by color? The string-holder is atypical, no comb or projection is seen at the body end. The bridge arrangement is not clear. There are two possibilities, one as 'normal' with the strings running over the bridge, attached at the end of the body, or the strings are attached near the end of the body to the second piece which looks also like a bridge. The condition of the miniature is very faded, but it seems to show an inlaid main rose and smaller roses at the ends of the bridge feet (?). There are seven or eight frets, depending whether the first is the nut or an actual fret.

Apparently the position of the rose was changed. Blurring or smearing is apparent in the center part of the top (see black and white photo below).

Stefano Pio refers to this instrument as “bastardized, contaminated model [of a viola da mano]” (Pio 2011, 201).

BibliographyA: Levi d’Ancona 1969; Alexander 1995, 219; Castiglioni e Peretti 2008; http://collections.vam.ac.uk/item/O89301/manuscript-initial-b-with-david-playing/ (accessed 15.03.2018).

BibliographyM: Pio 2011, 201.

CE 33

CE 33

CE 33

CE 34

CE 34

Location: London, British Museum, et al.; Hind 1948, V, lists six existing copies of the print.

Medium: Engraving

Dating: c. 1490 (Payne, 77)

Artist: Giovanni Pietro da Birago; also called Master of the Sforza Hours.

Provenance: Milanese

Iconographical context: Virgin of the Rocks with Child, with wingless angel musicians, St Jerome in background; John the Baptist child presents Jesus with lamb. At middle of bottom, inscription DIVE / MARIE VIR / GINI.

Number of cetre depicted: 1

Size: c. 6 cm

Comments: Seven pegs. The fingerboard similar to CE 40 in that it extends onto the sound-board. There is a clear joint between the sound-board and block from which the horns are cut, which could be an indication for built-up construction. This prominent joint across the sound-board suggests the cross-bar, i.e., yoke of the kithara. The instrument lacks a rose entirely. In general this seems quite a large instrument, with an elongated comb. It is being played with quill similar to **CE 40**. The excessively wide spacing of the (six?) frets could suggest diatonic frets, although other fretted instruments are found depicted by the same school and medium which feature unrealistically wide fret placement, thus a word of caution is in order when interpreting these frets. Lines drawn on top under hand area look a bit like grain marks in the wood, but may have been done simply as shading. No strings are shown. The thickish plectrum suggests a writing quill. Sides have been added in perspective which seem to indicate little or no taper in depth towards the bottom end of the resonator, although this cannot be conclusive given the limitations of the medium.

BibliographyA: Hind 1948, V, 78; Payne 1978, 77. Lambert 1999, inv. 499.

BibliographyM:

RCMI Graduate Center New York: Winternitz collection, unpublished (R BK III: 18).

CE 34

CE 35

CE 35

Location: Venezia, Gallerie dell'Accademia.

Medium: Painting

Dating: 1485-1495

Artist: Gianfrancesco da Tolmezzo (Giovanni Francesco / Gianfranco del Zotto) 1450-1510 (Friuli-Venice).

Provenance: Venice

Iconographical c*ontext*: Madonna and Child

Number of cetre: 1

Size:

Comments: Nine frets and ten frontal pegs are visible. In terms of string groupings, the configuration seems to be 2 x 5. A carved animal head is present. Surely these are chromatic frets, many within a short space; they are very close to correct placement. There is a marked similarity to the L'Aquila **CE 46** instrument, but see also Appendix I, Ex. 28, which may have used **CE 35** as a model.

BibliographyA: Berenson 1968, Pl 330.

BibliographyM: Ravizza 1970.

CE 35

CE 36

CE 36

Location: Verona, Santa Maria in Organo.

Medium: *Intarsia*

Dating: 1494-1499 (Bagatin, 88).

Artist: Fra Giovanni da Verona

Provenance: Verona

Iconographical* c*ontext: Inlaid choir stall, instruments of Psalms.

Number of cetre: 1

Size: c. 42 cm

Comments: This instrument has twelve pegs, consistent with the one other source by this artist where the entire peghead is visible (**CE 39**). Note the problems of perspective with the frets, also with the absence of the right-hand horn. Although the frets, looking at the right-hand edge of the fingerboard, appear to increase in height as they approach the body (*sic*), this would be impossible on a real instrument. It has been argued by more than one modern researcher that the height of the frets must decrease as they go up the neck toward the body (including Bugini 2014, 125, 169), but the general conclusion of this study is that the flat tops of the block frets are all at the same height (see **Chapters 4** and **6**), without exception. The left-hand finger of the player presses down over the space between the frets, causing the back edge of the block higher up the fingerboard to function as the actual stopping point for the string. This is a simple and viable system for fretting, and produces a clear tone as long as the spaces between the frets are slightly narrower than the width of the finger. If the spaces are too narrow (say, half a finger width or less), then it is no longer possible to push the string very slightly down into the gap and a clear tone is not produced. If the spaces are wider than a finger, or much wider than a finger, then the intonation of the metal string can be tricky to manage consistently, and somewhat instable for the intonation. But with the right distance

between the blocks, both blocks allow the finger to press the string into the gap only so far, just enough to achieve a clear tone for the note.

This is one of three *intarsie* by fra Giovanni, all three of which seem to follow the same model with problematic fret perspective (**CE 36, 39, 43**).

Fretting - Chromatic or Diatonic? A second point of interest found here is the noticeably large spacing between the first two frets, a feature mentioned on an earlier cetra from the 1420's, **CE 23**. Could it be possible that **CE 36** shows a chromatic fretboard without the first fret? One reason for omitting the first fret is that, on a smaller sized instrument with a short string length, stopping the string cleanly just after the nut is tricky, but the more important reason is that, as Tuning Test #4 shows (**Chapter 4**), the first fret provides unneeded chromatic pitches and is redundant in musical function. **CE 36** thus presents evidence for an altered chromatic fretting, in contrast to the diatonic system of **CE 32**.

Do either of Giovanni's two other cetra panels show a similar configuration? No, both **CE 39** and **CE 43** show a regularity of fret positions associated with fully chromatic frets. When examining an iconographical source for accuracy of fret placement, it is wise to remember that there are two interdependent fields of measurement, the section with the frets (their distance apart from each other), and the entire string length. The string length is the measurement from the nut to the bridge. On numerous sources such as **CE 32**, but especially those of Giovanni and, even more specifically, on his *intarsie*, the bridge is placed too high on the soundboard, that is to say, it is closer than it should be to the rose to produce a mathematically correct series of fret placements. In reality, it would have to be somewhat closer to the end of the instrument, and this has been correctly done on **CE 37**, Morone's painting of the same instrument as Giovanni's **CE 36**. While Giovanni's string-less cetre apparently are meant to symbolize the vanity of earthly pleasures and the brevity of earthly existence, they are completely unrealistic in one sense: a cetra bridge can only remain on the soundboard if held there by the pressure of the strings. Therefore a stationary bridge on a cetra in a vertical position, as shown on Giovanni's panels, would elude the laws of physics.

CE 36 also seems to show that the neck under the frets is positioned under the treble-side of the fingerboard, i.e., off-center as suggested by later cittern neck profiles. As such this would

represent an early, unique source which presents an off-center neck structure; for further discussion of neck profile, see **Chapter 4**.

The circle-of-holes rosette has received a unique treatment of detail, in that (1) trouble has been taken to show the soundboard thickness at the edge of individual holes, and (2) small cracks (following the realistically-represented longitudinal grain of the wood) have apparently been added in between some of the holes, as they might have occurred during the process of drilling the holes in the one-piece soundboard. If intentional, and not an unplanned occurrence for the *intarsiatore*, they represent extraordinary attention to detail.

Giovanni's cetre total four (**CE 36, 39, 43,** plus his single woodcarving**, CE 47**), and, as mentioned above, none of the four are equipped with strings. In contrast, his bowed instruments are always fully strung. Four out of ten lutes are strung, although no example seems to have an accurately complete set, including missing or broken strings; the other examples have none. His single harp seems fully strung, possibly with one string broken, and his string keyboard has complete strings.

Broken strings and the intentional imperfections outlined above may be consistent with the artist's predilection for showing the vanity of sensual pleasure and earthly pursuits, but it is also possible that the cetre lack strings (twelve in total) because accommodating this number would have covered or compromised the painstaking details of the roses, including the rose of this example with the details described above. In any case we must assume that a stringless cetra in an upright position would in real life be without a bridge, which was only held in position by the downward pressure of the strings. For a discussion of the lack of strings on this and other instruments by Giovanni, see Bugini 2014, 125.

The flower (or acorn?) ornament on the end of the peghead is unique in all cetra depictions. It answers the tailpiece ornament on the small bowed instrument (violeta, ribechina) shown directly above the lute in this panel, and also in Stall 32 at Monte Oliveto Maggiore and in Stall 17 at the Duomo in Siena. Capping the cetra peghead, the ornament brings to mind the acorn on the gittern peghead in the collection of the Wartburg (Eisenach), presumed to have been made by Hans Ott in Nürnberg c. 1450.

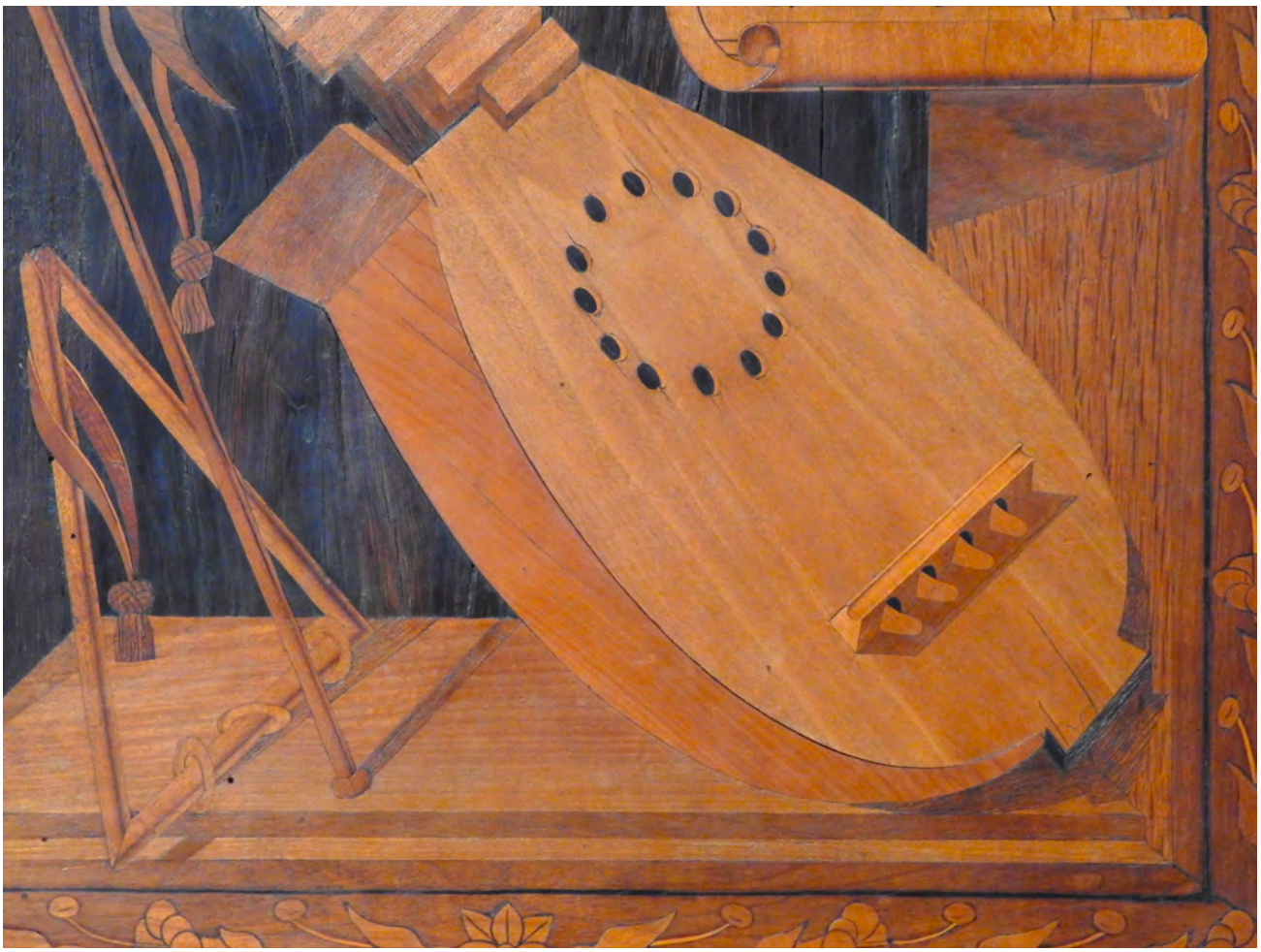
For comment on the cord threaded through the hole in the hook, see **Chapter 4**. The music notation contains a 3v-piece which has eluded identification. Bugini 2011, 66, describes the work as "polifonia a tre voci con ritmo di danza" and sees the main musical function of the cetra as "per l'accompagnamento della danza", as an instrument belonging to the "loud" instruments in the medieval categorization of loud and soft types (Bugini 2014, 157). Accompanying popular singing, and playing for dancing were indeed the two musical functions for the cetra named by Tinctoris (Appendix II, XV-8), but the claim that the cetra was understood as being a "loud" instrument is without any documentation or clear reason.

BibliographyA: Bagatin 2000, 37-72; Benetti 2016.

BibliographyM: Bugini 2014.

CE 36

CE 36



CE 36

CE 37

CE 37

Location: Verona, Santa Maria in Organo, cupola.

Medium: Fresco

Dating: c. 1496-1498 (Bugini 2014).

Artist: Domenico Morone

Provenance: Verona

Iconographical* c*ontext: Musical angel

Number of cetre depicted: 1

Size:

Comments: Restoration was completed in 1984 (Bugini 2014, 166). This instrument is strikingly similar to the cetra in the choir stall *intarsia* in same church (as pointed out by Bugini 2014, 169), and was painted during the same period as the creation of the wood inlay panels. It is even more similar to **CE 39**. A common model may have been shared by Giovanni da Verona and Domenico Morone. The features suggested in the fresco are six or seven frets, a circle-of-holes rosette, aqueduct-style bridge like the intarsiated cetra in the choir stall below, horns on the same instrument below, dorsal hook behind the peg-head, and a modest-sized string-holder/base. The precise number of pegs is difficult to ascertain, perhaps eight or nine. The rectangular face of peg head looks flat (unfaceted) and possibly of glued-on construction.

This source, together with **CE 36** and **39**, represent a unique pair of documents within this catalog: two artists used the same precise model for their cetra depictions.

BibliographyA:

BibliographyM: Bugini 2014.

CE 37

Location of angel with cetra in cupola

Cetra

EAST, facing altar/choir

CE 37

CE 37

CE 38

CE 38

Location: Montalcino, Museo Diocesano.

Medium: Painting

Dating: 1498 (National Gallery of Art).

Artist: Girolamo di Benvenuto

Provenance:

Iconographical c*ontext*: Assumption of the Virgin

Number of cetre: 1

Size: c. 50-60 cm

Comments: This instrument seems to be a cetra with atypical bulges at the neck-body joint instead of horns. The peg-head is unusual, with eight lateral and two frontal pegs and a carved head. There are 6 x 2 strings, yet 10 (?) pegs. The base of the instrument is blocked, therefore no comb is visible.

This is one of the few fret system depictions in the Catalog where the distances at the fourth and fifth frets are correct for chromatic frets. For specifics of how these frets are stopped by the left hand, see Comments to **CE 36**.

The carved lion's (?) head is similar to **CE 26** and **30** but is found here some 40-50 years later than those.

The sides of the body are scalloped, and the body has no taper.

There may be a hook behind peg-head, although this is not unequivocal.

There are 9 frets, clearly chromatic. The fingerboard looks more like separate blocks, although it might be one piece of wood, with cut-out spaces between frets. The block frets have varying spacings in between them, decreasing as they ascend.

BibliographyA:

BibliographyM: Nickel 1972, Pl 105.

CE 38

CE 38

CE 38

CE 39

CE 39

Location: Asciano, Abbazia di Monte Oliveto Maggiore, Choir Stall 18 (Brizzi 1989).

Medium: *Intarsia*

Dating: 1503-1505 (Brizzi, 10-11; Bagatin, 88).

Artist: Fra Giovanni da Verona

Provenance: Similar to **CE 36** (Verona)

Context: Musical instruments, symbolizing heavenly praise and earthly vanity.

Number of cetre: 2, treated here individually due to dating difference.

Size: c. 40 cm

Comments: This instrument has a one piece soundboard which has cracked. It is impossible to say when this happened. It is interesting to speculate whether this crack appeared when the *intarsia* was still relatively new (?), thus influencing the choice of three-piece top for the second instrument of 1511-1512. This detail is a striking difference between two otherwise very similar cetre.

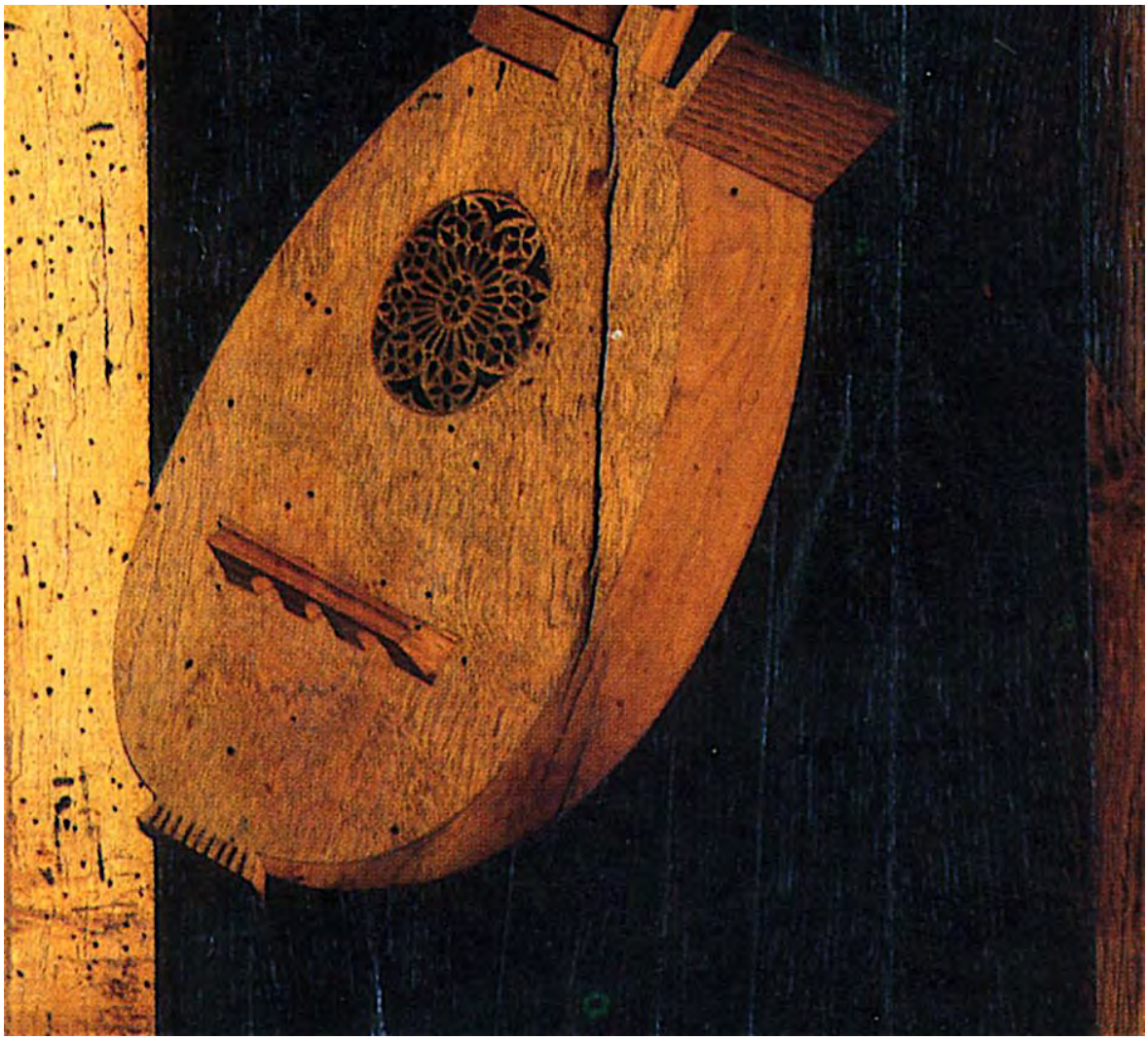
The instrument is depicted without strings, which could invite various symbolic interpretations, including the vanity of earthly pleasures or brevity of earthly existence. A real cetra, without any strings and hanging at this angle, would not have a bridge fixed to the sound-board, for on the real instrument, the bridge position on the sound-board was secured only by downward string pressure. The bridge, as far as we know, was not normally glued to the top (if 16th-c. existing citterns are anything to go by).

For specifics of how these frets are stopped by the left hand, see Comments to **CE 36**.

BibliographyA: Brizzi 1989, Pl. 18; Bagatin 2000.

BibliographyM: Young 1984.

CE 39



CE 39

CE 39

CE 39

CE 39

CE 39

CE 40

CE 40

Location: Roma, Museo di Roma, Palazzo Braschi, Sala della Magliana o delle Muse.

Medium: Fresco

Dating: c. 1505-1510

Artist: Long attributed to Giovanni Lo Spagna, but recently to Gerino da Pistoia (Gerini di Pietro Gerini). Bury 2012, 227, states: "Finally, there was the room of the Muses at the papal hunting lodge of La Magliana, from which the frescoes of *Apollo and the Nine Muses*, now in the Museo di Roma, were removed. These are strongly Peruginesque. They were formerly attributed to Lo Spagna, although that attribution has been rejected; more recently they have been give to Gerino da Pistoia. They may have been commissioned by cardinal Alidosi, who died in 1511, for his name appears on the door into the room." Massafra 2002, Pl 74, shows a photo of the room c. 1961-1962.

Provenance: Papal hunting lodge Villa della Magliana (Casino Papale di Caccia della Magliana), possibly commissioned for Cardinal Alidosi, d. 1511.

Iconographical context: Affreschi di Apollo e le Muse: la Musa Tersicore

Number of cetre: 1

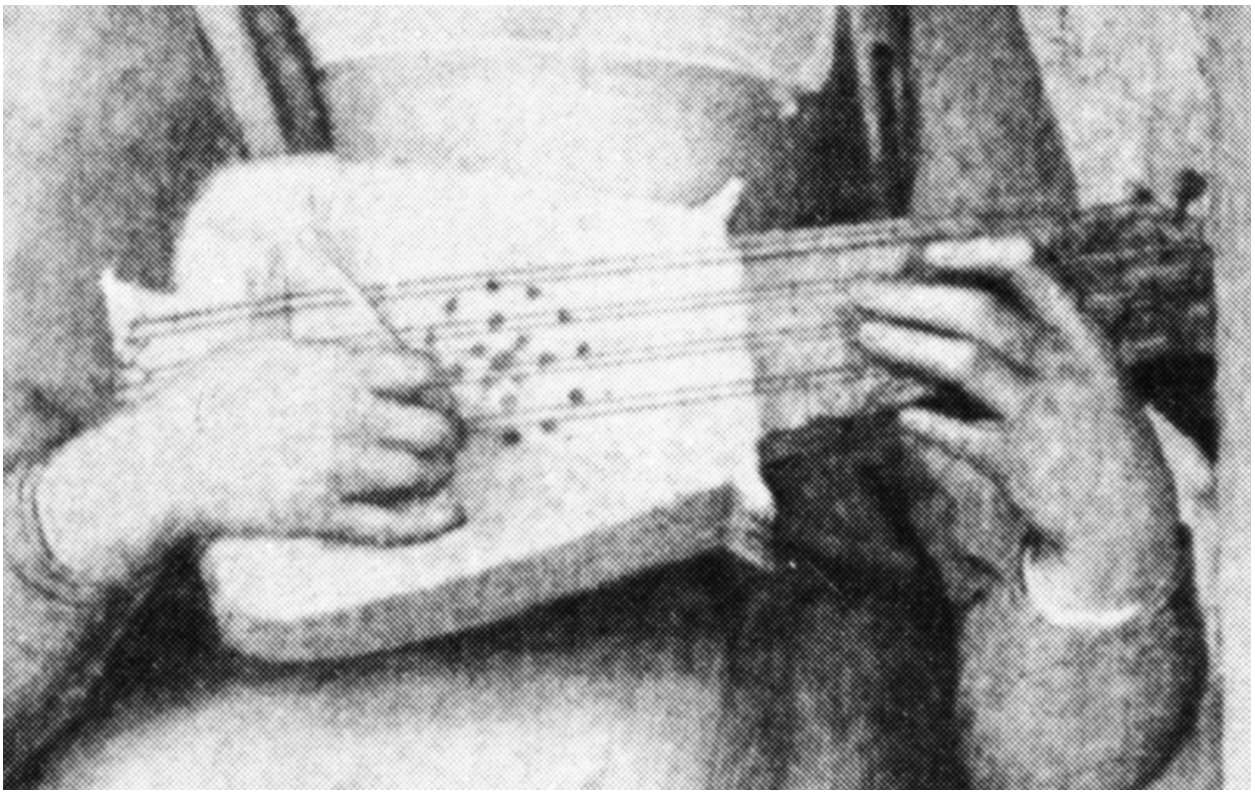
Size:

Comments: A heavy quill (goose feather?) is shown in good detail. There is either a non-tapered body depth, or just a very slight taper. This is perhaps the earliest source for what seems to be close to a later fret system, i.e., thin metal or wooden fillets inlaid into a one-piece fingerboard with (?) a slight scalloping between the frets (or possibly the fret surfaces are inclined, ascending toward the bridge). No spaces are seen in between separate blocks.

BibliographyA: Bury 2012.

BibliographyM: Young 1984.

CE 40



CE 40

CE 41

CE 41

Location: Lurago d'Erba, Villa Sormani.

Medium: Tempera on panel

Dating: 1507-1508

Artist: Bernardo Zenale (c. 1460-1526)

Provenance: Milan, Santa Maria di Brera, organ 'parapet' acc. to Meuci 2002.

Iconographical c*ontext***: Angel musicians

Number of cetre: 1

Size:

Comments: This instrument shows no body taper, and no strings or bridge are shown. We note the pointed ends of frets, coming clearly from the idea of kollopes-frets; on some ancient sculptures, the kollopes show a similarity to 'sticks'.

BibliographyA: Meucci 2002.

BibliographyM:

CE 41

CE 42

CE 42

Location: Milano, Pinacoteca di Brera.

Medium: Fresco

Dating: 1509-1514

Artist: Bernardino Luini

Provenance: Originally in the Villa Pelucca (Sesto San Giovanni / Milan).

Iconographical* c*ontext: Passage of the Red Sea

Number of cetre: 1

Size:

Comments: Though much of the cetra is blocked by the figures of other musicians, the following details are visible: comb-style string-holder, bridge, inlaid rose, plectrum guard, purfling on the soundboard inset from the edge. Eight strings, in no clear courses-grouping.

The plectrum guard is of interest inasmuch as this is the only source in the entire catalog which shows this feature. The existing gittern from the collection at the Wartburg in Eisenach, thought to date from the mid-15th century, also had a plectrum guard affixed to the sound-board between the bridge and the rose; now missing, it has been impossible to say whether the instrument initially had the guard or whether it was added later.[25]

BibliographyA:

BibliographyM: Geiringer 1943, pl. XX.

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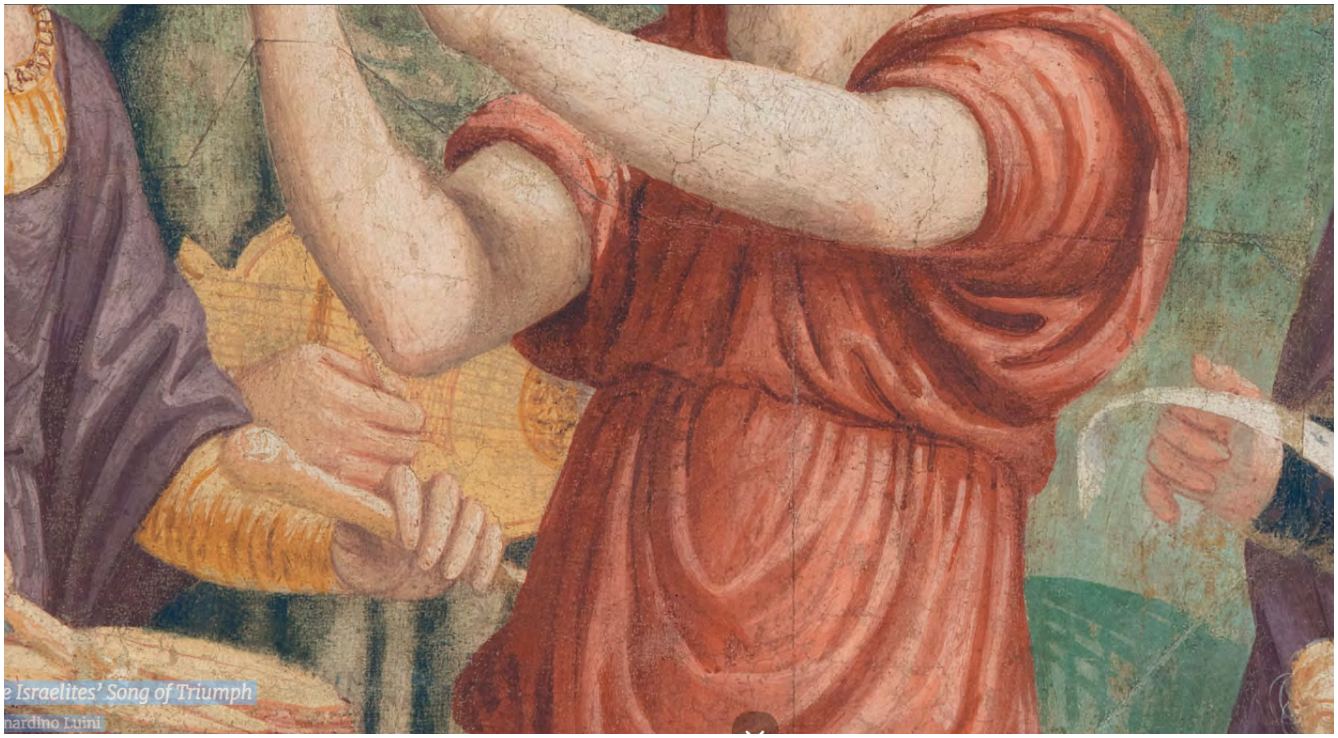
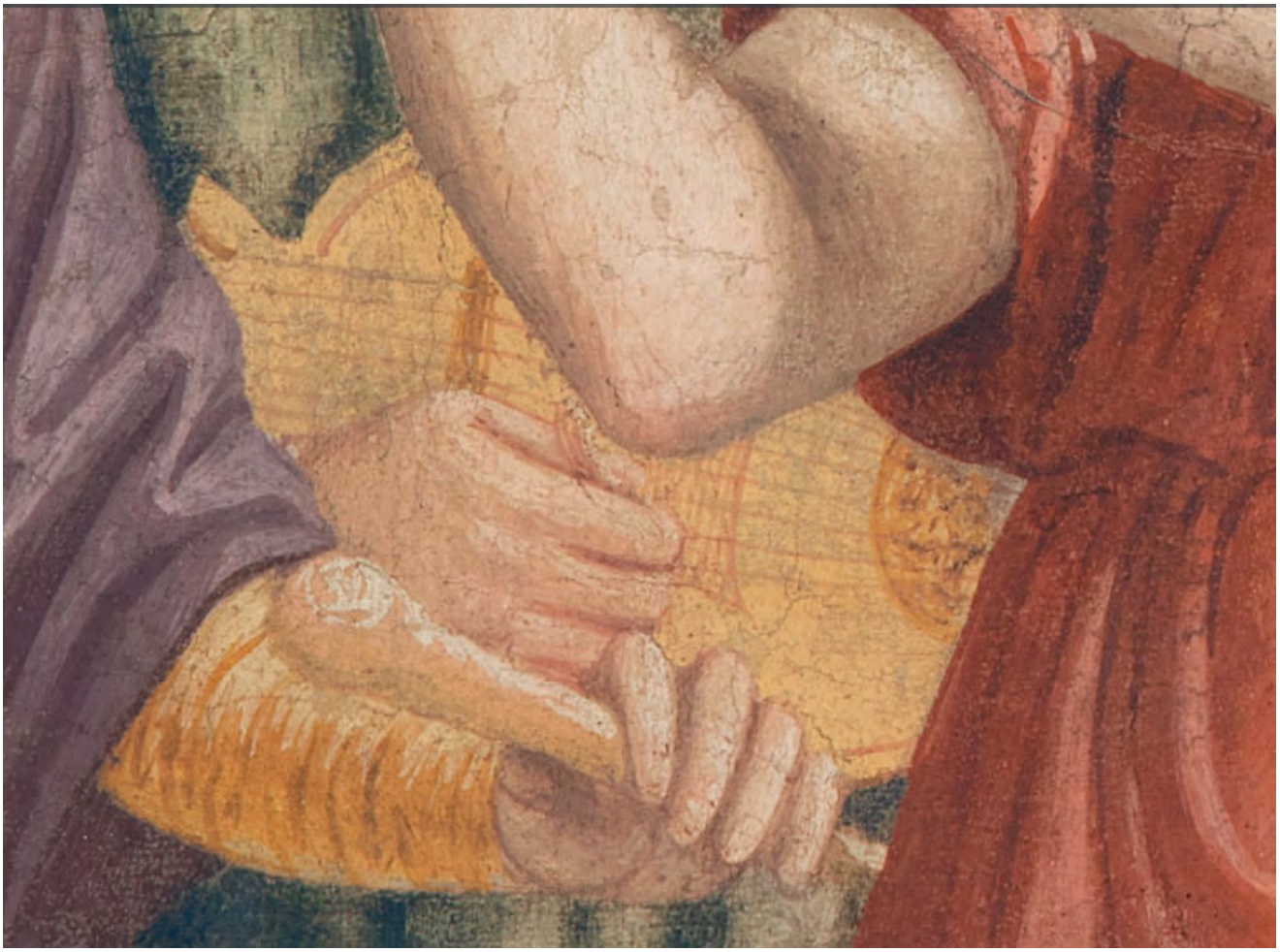
[25] For photos and comment on the Wartburg instrument, see Young 2000, 367-368.

CE 42

CE 42



CE 42



CE 43

CE 43

Location: Asciano, Abbazia di Monte Oliveto Maggiore, Choir Stall 10 (Brizzi 1989).

Medium: *Intarsia*

Dating: 1511-1512 (Brizzi 1989, 10-11; Bagatin, 88)

Artist: Fra Giovanni da Verona

Provenance: Similar to **CE 36** (Verona)

Context: Musical instruments, symbolizing heavenly praise and earthly vanity.

Number of cetre: 2, with individual catalog entries due to dating difference.

Size: c. 40 cm

Comments: This cetra features an inlaid rose and a three-piece soundboard. See comments for **CE 39** concerning the lack of strings and bridge. Realistic perspective rendering of frets is somewhat problematic in this *intarsia*. Unsuccessful rendering of highest frets seems to be a simple mirror-image-reversal of earlier *intarsia*. Depiction of neck structure under frets seems suggestive of full-width design rather than later off-center treble-centered contour (see **Chapter 4** for general discussion of features related to neck structure). The music notation is an anonymous two-part *Verbum caro factum est*, fittingly for a cetra, a *lauda*, or devotional song of praise, as pointed out by music Gustave Reese. He credited his colleague Dragan Plamenac with the identification of the Superius as belonging to a 3v setting in the manuscript Firenze, Panciatichi 27, f. 109v, but only the opening short phrase of the Superius is the same as the 3v setting identified by Plamenac; the rest of the Superius is not the same, and the Tenor is completely different.

BibliographyA: Brizzi 1989; Bagatin 2000.

BibliographyM: Reese 1959, Pl. 11; Winternitz 1961.

CE 43

CE 43

CE 43

CE 44

CE 44

Location: Pitigliano, Museo Diocesano di Arte Sacra.

Medium: Painting

Dating: c. 1500-1510

Artist: Girolamo di Benvenuto

Provenance: Painted for Convento della Santissima Trinità alla Selva (Grosseto)(Selva di Santa Fiora).

Iconographical context: Altarpiece: Assunzione della Vergine con santi Girolamo, Tommaso e Francesco.

Number of cetre: 1

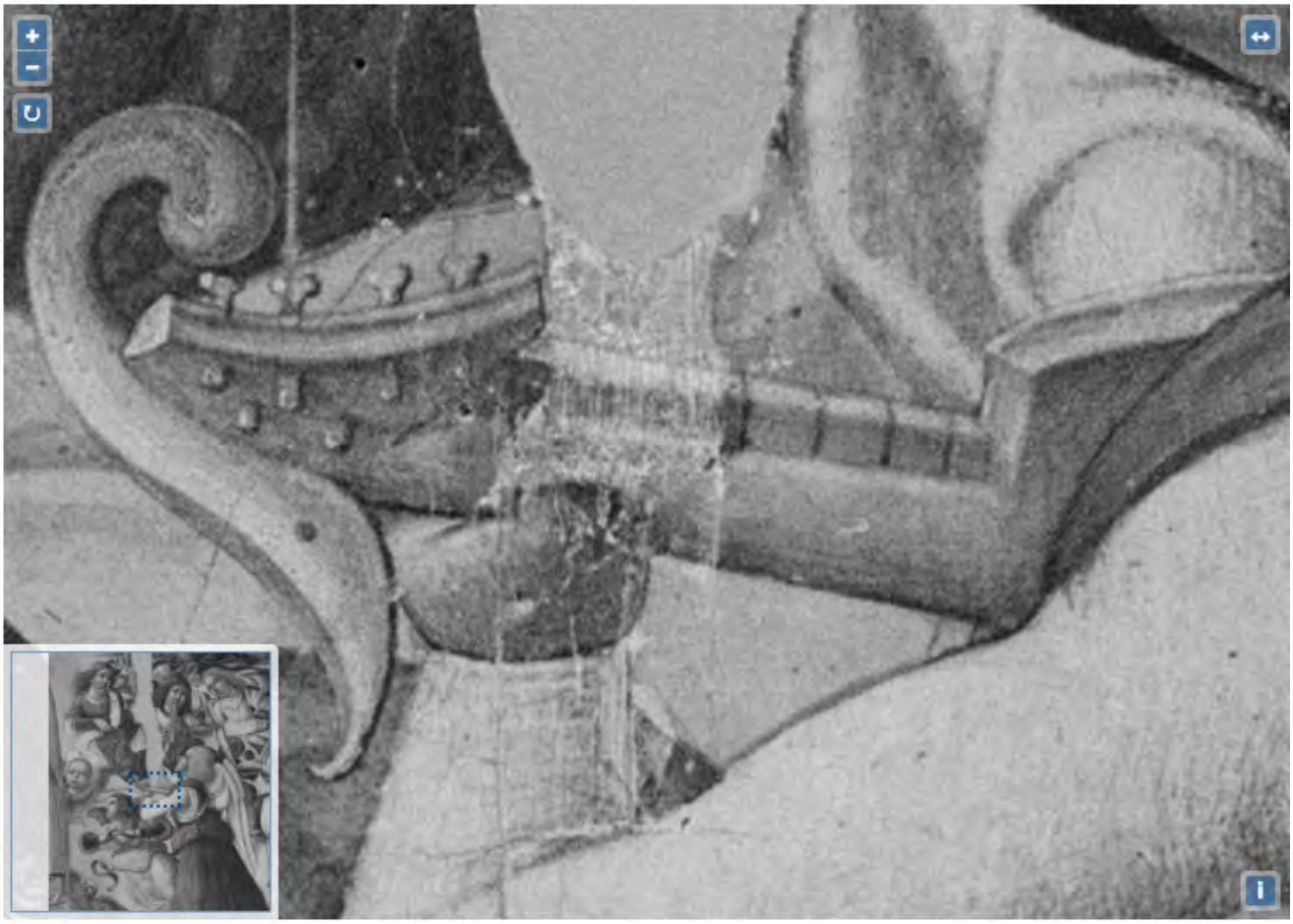
Size:

Comments: An angel plays a cetra, and only the back of the neck and peghead are visible. This is a unique and important source for the back of the neck perspective. The cetra has twelve pegs total (assuming the hook ornament represents the middle line of the peg-head, as six pegs are visible on this side). Also, the neck does not look offset, i.e., frets are still individual blocks and neck is still in the old style. The sides of the body might be somewhat scalloped.

BibliographyA:

BibliographyM:

CE 44



CE 45

7. Here attributed to Giulio Campagnola, «Daphnis», Munich, Alte Pinakothek

CE 45

Location: München, Alte Pinakothek.

Medium: Painting

Dating: c. 1510-1520

Artist: Giulio Campagnola (Brown 2010); formerly Palma Il Vecchio.

Provenance:

Iconographical context: Daphnis depicted as young shepherd (Brown 2010); formerly titled 'Young Faun' with various attributions, most commonly until Brown, Palma Il Vecchio.

Number of cetre: 1

Size:

Comments: This represents a unique source because it is now known that the artist himself actually played the cetra (Brown 2010), thus aspects of realism of the instrument cannot be questioned. The carved animals head is unclear in form, but is perhaps a bird or a dragon (?). The peg-head form is slightly reminiscent of the fresco in **CE 30**, Palazzo Schifanoia. It seems that there are noticeable spaces between the block frets. The hook is not the thin type seen, for example, on **CE 39**. Overall this seems to be a rather small instrument.

BibliographyA: Brown 2010.

BibliographyM: Winternitz 1961, 224.

CE 45

CE 45

CE 45

CE 46

CE 46

Location: L'Aquila, Palazzo Carli Benedetti.

Medium: Fresco

Dating: c. 1510-1520 (Francesco Zimei, private communication 2015).

Artist: Unknown

Provenance: L'Aquila

Iconographical c*ontext***: Swan attracted to the sound of the cithara.

Number of cetre: 1

Size:

Comments: The damaged condition of the fresco (undergoing restoration) seems to show bridge-tailpiece as one unit, although this is not conclusive. The presence of an on-body tailpiece could possibly suggest an interpretation of this cetra as a bowed instrument, however, there is no bow present, and if it were indeed bowed, it is a unique example in the entire body of iconography to have block frets. Therefore, it is assumed to represent a plucked cetra.

There are eight pegs, with strings grouped in a 4 x 2 configuration. The neck width under the frets is centered, not off-centered as on later cittern necks. The body sides show no shallowing taper of depth towards the bottom of the instrument. The sides are scalloped as on a *lira da braccio*, and this instrument has an inlaid rose. This features an interesting combination of disc-shaped peg-head and carved head (animal unknown). The straight-sided body is reminiscent of **CE 33** and **35,** both from the Veneto.

One may note the physical proximity to the horned *lira* or hurdy gurdy.

BibliographyA:

BibliographyM: Zimei 2016.

I wish to express my gratitude to Francesco Zimei, who alerted me to this source.

CE 46

CE 46

CE 47

CE 47

Location: Verona, Santa Maria in Organa, Sacristy / Sagrestia.

Medium: Wood carving (oak).

Dating: 1519-1523

Artist: Giovanni da Verona

Provenance: Verona

Iconographical context: These stunningly carved wooden columns separate ten intarsiated panels on the left-hand wall as one enters the sacristy. These panels are found on the wall immediately above a counter built along the left wall. Each *intarsia* is bordered on both sides by one column, thus two columns are found between any two *intarsie*. The columns are carved near their bases with Classically-inspired decoration, patterns, figures and natural objects; among the objects are household items of all kinds, tools and implements, armor, and musical instruments.

The cetra, in addition to many other musical instruments, is carved on the column to the right of the tenth *intarsia*.

Number of cetre: 1

Size: 8.5 - 9 cm (over gently curved surface following contour of column surface)

Comments: The neck shaft under the frets is centered, not off-set. There are eight frets. Eleven peg-holes are visible in four lateral rows of 3 / 3 / 3 and 2 as the face of the peg-head narrows towards the end. The end is not visible (with possibly a carved head). There are very large, prominent horns. The circle-of-holes rose is comprised of thirteen holes, placed very low on the soundboard, near the bridge. The body features a tapering body depth, and there is a prominent hook on back of the peg-head.

BibliographyA: Bagatin 2000.

BibliographyM:

I am extremely grateful to Annemies Tamboer, who gave me a photograph of this important iconographical source many years ago.

CE 47

CE 47

CE 47

CE 47

CE 48

CE 48

Location: Torrita di Siena, Oratorio della Santa Maria delle Nevi.

Medium: Fresco

Dating: 1525

Artist: Girolamo di Benvenuto

Provenance: Siena

Iconographical* c*ontext: Virgin and St. Thomas

Number of cetre: 1

Size:

Comments: There are four pegs (*sic*), with nine strings, possibly grouped as 2 / 2 / 3 / 2. The body has tapering depth, and the sides may be scalloped.

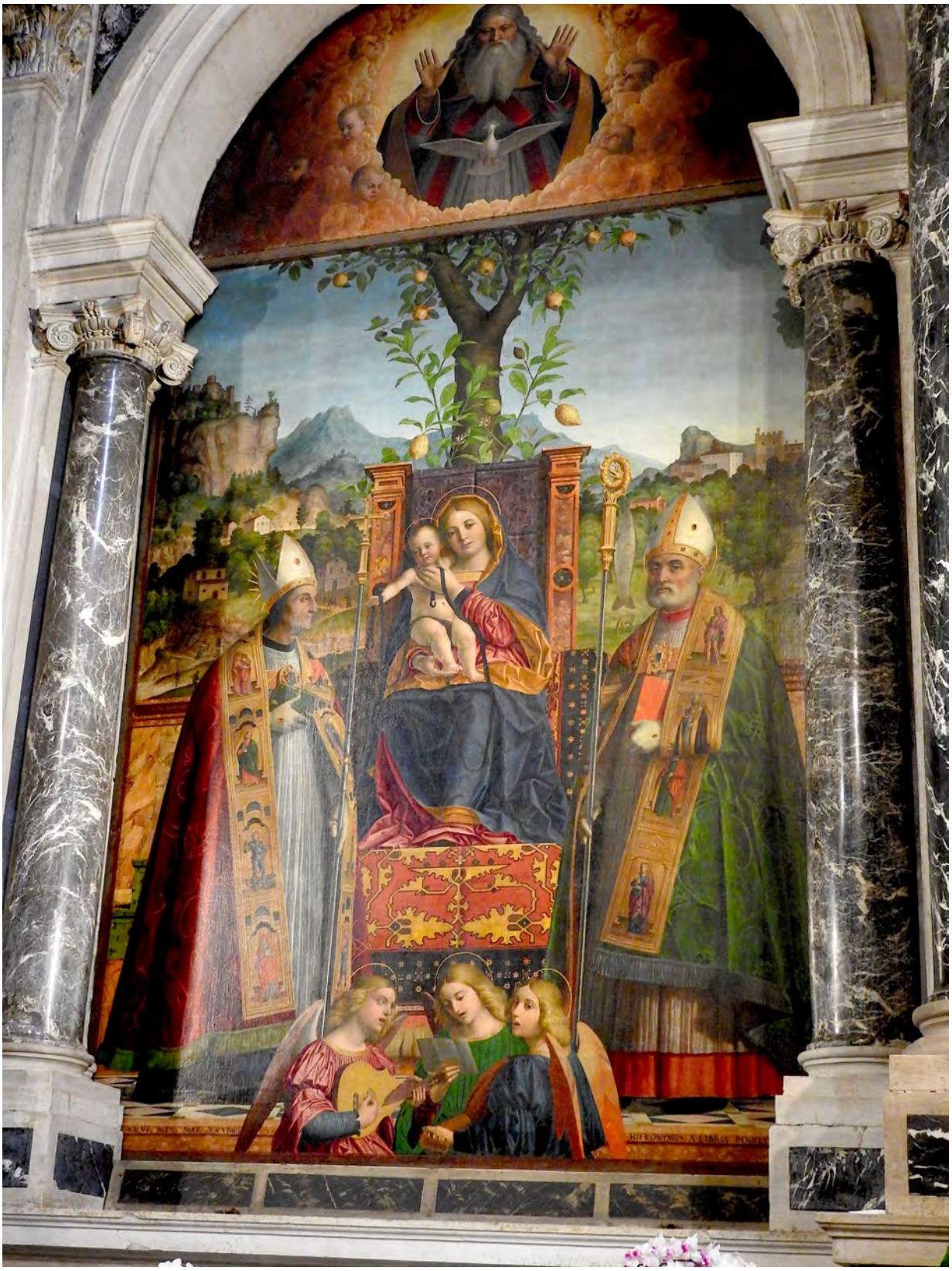
BibliographyA:

BibliographyM: Young 1984.

CE 48

CE 48

CE 49



CE 49

Location: Verona, San Giorgio Maggiore.

Medium: Altar painting

Dating: 1526 (date legible on peg-head of cetra).

Artist: Girolamo dai Libri

Provenance: Verona

Iconographical* c*ontext: Madonna with two saints, angel in foreground plays cetra.

Number of cetre: 1

Size: c. 50-60 cm

Comments: Denis 1944, 119, comments on the new features of this cetra compared with **CE 24** Della Robbia. As pointed out in Grijp 1981, this source is the earliest known showing "half frets", that is, diatonic frets with chromatic half-frets. Nine strings, in no obvious grouping. The instrument is rendered in stunning detail, including the date inscribed on the peg-head (see enlargement below). Although many aspects are ultra-realistic, the string-spacing and the fret configuration seem lacking in this regard. The body depth looks tapered.

See Appendix I, Ex. 1, for a suspiciously similar instrument in shape.

BibliographyA:

BibliographyM: Denis 1944; Grijp 1981.

CE 49

CE 49

CE 49

CE 49

CE 50

CE 50

Location: Lugano, Santa Maria degli Angioli, transept wall.

Medium: Fresco

Dating: 1529

Artist: Bernardino Luini

Provenance: Milano

Iconographical c*ontext***: Crucifixion scene with David in border below.

Number of cetre: 1

Size:

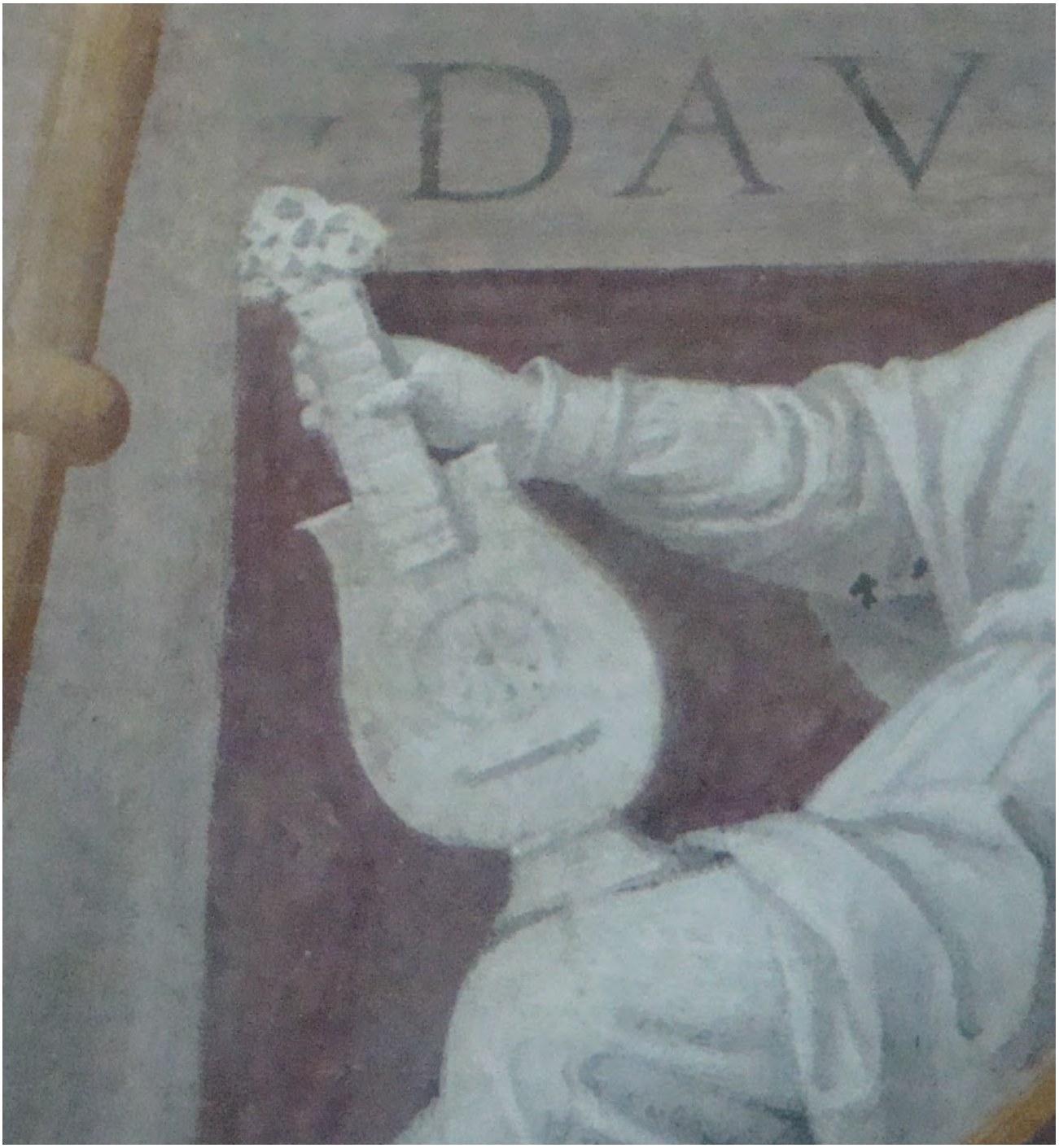
Comments: Scalloped frets, an inlaid rose, a prominent base, eight strings, and a small size are all features of this instrument. The fingerboard looks to be made out of one piece of wood, although this cannot be proven.

BibliographyA:

BibliographyM:

My thanks go to Marc Lewon, who alerted me to this cetra source.

CE 50



CE 51

CE 51

Location: Saronno, Santa Maria dei Miracoli, dome of Santuario.

Medium: Fresco

Dating: 1535-1536

Artist: Gaudenzio Ferrari

Provenance: Milano

Iconographical* c*ontext: Glory of angels, Angel concert.

Number of cetre: 1

Size:

Comments: The instrument seems to have had strings depicted at one time, as the fingerboard shows traces of them, but they may have been covered over or lost in restoration of the body. This cetra interesting but rather strange configuration of frets, four until the neck joins the body, the frets are wide, but suddenly get very narrow with the three smaller body frets, which also look stepped, or of a varying height. The detailed photo below shows a binding inlay (or painted line?) near the edge of the sound-board.

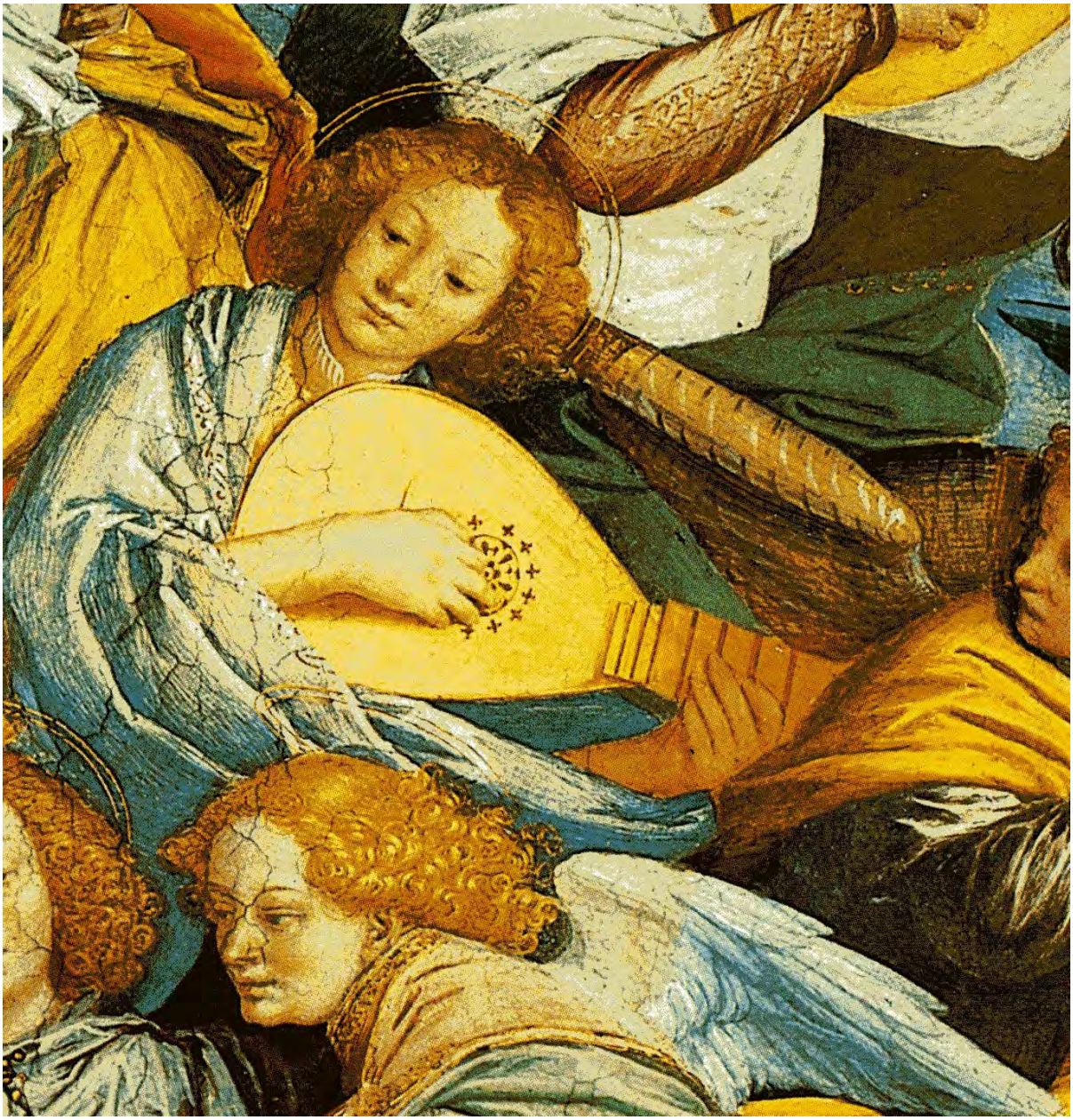
Winternitz 1961 mentions the work but misses this image, calling a smaller leafed instrument a cittern.

BibliographyA:

BibliographyM: Winternitz 1961.

CE 51

CE 51



CE 51

CE 51

CE 51

CE 51

CE 51

CE 52

CE 52

Location: Wien, Kunsthistorisches Museum, Gemaeldegalerie.

Medium: *Cassone* painting (oil on wood).

Dating: 1545-1548

Artist: Tintoretto, Jacopo Robusti

Provenance: Venice

Iconographical* c*ontext: Transport of the Ark of the Covenant

Number of cetre: 1

Size:

Comments: This instrument lacks shoulder horns. The very broad fingerboard width is suggestive of block frets (kollopes) on an instrument depicted in a work from the 1540's, and it is interesting to note that, according to historian Erasmus Weddigen, Tintoretto (Jacopo Robusti, 1518-1594) had a brother who played the cetra ("che suonava la cetra"; Weddigen 1984, 68). Thus the artist would presumably have been familiar with the appearance of the cetra. A second painting of inconclusive date (1576-1586?) by Tintoretto, "Women Playing Music" (Gemäldegalerie Dresden), shows a woman playing a six-course cetra from behind, where only the back of the bottom of the body is visible. The back appears to be ornately carved, although painted decoration is not out of the question as well. The body size looks to be relatively large and longish, judging by the amount of straight sides shown.

BibliographyA:

BibliographyM:

CE 52

CHAPTER 4 - A Field Guide to the Cetra - Part by Part

The title of this chapter has been carefully chosen. A significant portion of the study of nature is concerned with observing different features of animals and plants, for example, to understand how they contribute to the whole organism. A "field guide" is a guide book in this enterprise. In his dialogue on ancient and modern music, Vincenzo Galilei wrote briefly about the different parts of the kithara, in a text which, for us, throws much-needed light on the perception of what 16th-c. musicians thought about their ancient counterparts, including their musical instruments.[1] Giovanni Battista Doni (1595-1647), writing around 1630, dissected the ancient kithara more precisely.[2] He would have been right at home in the 15th century.

Both of these writers provide us with clues to understand the mentality of the Humanists, if not medieval culture in general, concerning the Classical kithara. Especially when they were able to read - first in Latin, later also in Greek - source material by Aristotle, Julius Pollux, Homer and other ancient authors, about specific components of the kithara, their fascination concerning the central instrument of Antiquity only increased. We, in this chapter, want to try and get inside that mentality, looking at the chordophone part by part, component by component.

The observations that follow are not limited, however, to the Humanist period of the cetra's story (described in this study as the last of three phases, beginning in the second half of the 14th c.). The features discussed below are summarized from all three periods. To try and make conclusions about instrument forms and usage from iconographical sources, a certain chronological consideration or real-time factor must be kept in mind: the features displayed in an image are, to a greater or lesser degree, a reflection of something that already existed when the artist executed the work. If this assumption is reasonable, what average time-span should we imagine that the cetra form or feature had been in use?

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[1] Edited in Galilei 2003.

[2] Edited in Palisca 1981.

Artists during these centuries worked from models, within conventions, and they did not freely invent any objects, themes or iconographical programs.[3] A reasonable answer to the tricky question of the chronological difference between the earliest conventional use in daily musical practice and the earliest appearance in the (now surviving) visual arts could be: one or two decades, but in some cases, more.

4.1 La Forma della Cetra

4.1.1 Shape The general frontal shape of the body is comprised of multiple aspects which include length-width proportion, lines of sides (curved or non-curved), line curvature of end, presence of an appendage at the end of the body to which the strings may be fastened ("base"), and shoulder form. Two very general adjectives used to describe cetra body shapes are "spatulate" and "ovoid" (see **Glossary**), although a thorough perusal of **Chapter 3** will show that there are many variations under each of these broad types.

The 'classic' spatulate shape is generated by combining two fundamental geometrical shapes carrying Christian symbolism, the circle (eternity) and the square (four corners = four extremities of the Cross), as follows: using a compass, describe a circle with center point A and draw a horizontal line marking points B and C on the outside of the circle. Then, using the length B - C (the diameter of the circle), draw a perpendicular line rising vertically from B to point D and a perpendicular line rising vertically from C to point E. Connect D to E to complete the square, forming the upper corners of the spade.

In effect, there are three important variables at play in any spatulate body form, the shoulder, the side and the end. General shoulder types are determined by the angle of the end of the resonator where it joins the neck, i. e., line D - E of the drawing above. In its most classic type, D - E intersects the neck at a 90-degree angle.
An early example of this classic spatulate form is the *pandura* in **Pl. 32**, albeit with side cutouts. A Roman *pandura* with a smallish spatulate body is apparently depicted in **Pl. 22**

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[3] Scheller 1995 fascinatingly documents this statement.

(c. 100 AD), although the image is not entirely defined regarding body form. In any case, the spatulate form strongly manifested itself on the Eastern *pandura*, in many different varieties (**Pl. 28 - 33**; **35 - 40**). One of these early varieties has incurved sides which flare out, going towards the bridge at the lower body end, into a more circular shape than most other early examples. **Pl. 29** and **36** outline this form.

The earliest Italian plucked necked-chordophone with a spatulate form is **CE 1**, the shape being a fundamental criterium of the definition of the early cetra. Tellingly, the term *cetra* was also used in 14th-c. Tuscan and Umbrian literature to mean "small shield" of spade or roundish shape.[4] But the double meaning of shield and cetra/cithara was much older than the 14th century: astute readers of the present essay may remember the discussion of the Shield of Harmony in **Chapter 1**, where Musica's main attribute in Martianus Capella's 5th-c. exposition of the Seven Artes Liberales was a magical metal shield, emanating wondrous sound, rather than the expected cithara or lyre. An attribute of Rhetoric, in Gothic iconography of the Seven Liberal Arts, was sometimes a shield and sword, suggesting eloquence as the best defense, and the double-edged etymology of *cetra* is therefore not coincidental.[5]

During the 14th c., a wider variety of body forms than those previously seen manifests itself. With the exception of **CE 11**, with its slightly waisted, hornless, vielle-like body from c. 1270-1300, the tulip form and the straight-sided spade shape had been predominant in the 13th c., and the early-14th-c. Assisi cycle **CE 15** is a veritable celebration of tulip-shaped body forms. After the Assisi frescoes, the sources seem to form themselves into two groups, the first consisting of illumination work from Neapolitan or Neapolitan-Bolognese manuscripts, and the second of frescoes done in Florentine style. The former study group, consisting primarily of miniatures, offers limited data due to the physical limitations of the medium. The miniatures themselves are not large and often the instruments shown within

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[4] See the *Tesoro della lingua Italiana delle Origini* online , http://tlio.ovi.cnr.it/TLIO/ (entry: CÈTRA (2) s.f), accessed 06.01.2018.

[5] See Stahl 1977, 156, for a translation of Martianus Capella's description of Lady Rhetoric with her weapons to defend and attack.

are tiny. Details, therefore, are often sadly lacking among these sources. Regarding body form, the Neapolitan depictions are predominantly oval-shaped, without horns, although **CE 16** provides a lovely example of an elongated Antelami shape, with similar horns to the Parma specimen. But in general, the smallness of these cetra images precludes details and sometimes suggests a kind of default body shape, simplified and vielle-like.

The Florentine works, meanwhile, contain interesting if not provocative, body types. These can be distinctly cornered, that is, pointed, on both the upper and lower bouts of the body (**CE 19, 22**). None of these examples is shown as a fully frontal, uncovered instrument; we only see parts or glimpses of the shape. Such body types might seem more related to forms of the psaltery than to traditional shapes of the cetra.[6] Yet the morphological proximity of the cetra to the vielle seen since the earliest Romanesque sources (Appendix I, Ex. 5) is still applicable in the 14th c. (and will continue well into the 16th c.), and both the rectangular Florentine and oval-shaped Neapolitan examples are in some ways closer to the vielle than to the cetra. There are no wooden frets in evidence, and the neck, if shown at all, is relatively narrow, terminating in a lute-style peg-head (**CE 22**). Similarly, when the upper bouts are visible, there is no sign of any horns, but the bouts are sharply cornered, as mentioned above.[7]

The rectangular or squarish body-shape is clearly manifested on Italian bowed instruments by the 15th c. (Appendix I, Ex. 17, 20, 24, 25), and an earlier example by non-Italian Magister Theodoricus at Karlštejn Castle, shows a decidedly Italian influence in its style

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[6] The ancient Biblical pairing of cithara and psalterium was examined in Chapter 1; for an interesting conflation of these two into one instrument in Trecento art: see Appendix I, Ex. 27, Nardo di Cione.

[7] These isolated examples also happen to bear a shape resemblance to certain English citoles sometimes referred to in modern research as holly-leaf citoles (Wright 1977, 8). Because the earliest English specimens pre-date the earliest Florentine example (CE 20) by many decades, and because the holly-leaf shape re-appears in a 16th-c. painting with a certain proximity to Florence (Appendix I, Ex. 26), one cannot help but wonder whether an element of the English citole manifested itself as a fashion in 14th-c. Florence. This would be a very large assumption to make based on only two (atypical and problematic) iconographical sources. Somewhat more credible might be the possible relation between App. I, Ex. 26, and the 14th-c. English citole; for more on this, see discussion later in this chapter, section 4.4.

(Appendix I, Ex. 16).[8] The instrument is not depicted with a bow; it might have been plucked or bowed. In any case, all of these instruments have been influenced by the squared-off shapes of the 14th-c. Florentine cetra variants.

Two other 14th-c. examples depict what might provocatively be proposed as a Latin cithara (or *guiterne latine*) from a Parisian context. The first item, Appendix I, Ex. 14, is a copy dated 1362 of Johannes de Muris' *De musica speculativa secundum boetium*, containing a drawing on f. 45v of musical instruments mentioned in the treatise. Among these is a necked chordophone of spatulate shape with incurved sides and a fretted fingerboard, labelled *chitara*, a spelling more Italian than French. The second example is a well-known image from the Berkeley treatise of 1375 which might be taken for vielle (Appendix I, Ex. 15). I suggest that it is more likely to represent a Latin cithara than a vielle for at least three reasons: there is no bow depicted and the strings are attached at the bridge, the tuning it illustrates is the Boethian cithara, and it is paired with a gittern, thus illustrating the contemporary Parisian literary pairing of *guiterne latine* and *guiterne moresche*.[9]

By c. 1460, cetra types featuring stub-horned or hornless shoulders and a straight-sided or gently waisted body appear in Florence and the Veneto (**CE 30**), which continue in various forms for the remainder of the later cittern's life as a body type.[10] These variants are easily confused with another instrument type with a gently waisted body, the plucked *viola* or *viola da mano*. Two important features distinguishing the cetra from the *viola* are the prominent kollopes-frets (**CE 30**), and string attachment at the end of the body rather than at the bridge. The peghead of the *viola* became standardized by the late 15th c. as a sickle-form extension of the neck with lateral rather than frontal pegs. Its strings were gut, as opposed to the metal strings of the cetra. An early example of a *viola da mano*, or something very close to it, is Appendix I, Ex. 18, dated 1425 - 1440. If the dating and source

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[8] On the works of Theodoricus, see Buchner 1974.

[9] Young 2015, 94-98. This study arrives at contradictory results regarding the precise meaning of *guiterne latine* and *guiterne moresche* compared with the research published in Wright 1977.

[10] CE 33, 35 and 46 seem to represent a distinct sub-type, possibly identified with the Veneto region.

of Ex. 18 are reliable, the question of the history of the *viola da mano* becomes urgent, for this instrument is usually assumed to have come to Italy from Spain.[11] To my knowledge, a similar instrument in Spain is not documented until the second half of the 15th century. Further pursuit of this question, however, is outside the scope of the present study.

The 15th c. is clearly a rich period in terms of variety of cetra forms, large and small. Driven by the Humanist hunger for Antiquity, this is truly the Golden Age of the cetra, continuing into the first decades of the 16th century. The novelty of instrument types, in general, found in Italian art increases at this time, to the extent that one might feel overwhelmed with the sheer volume of new forms and syntheses of older types. Were such fanciful objects real, or simply the product of a painter's over-active imagination? Emanuel Winternitz addressed this question in an essay in 1956 by introducing the idea of "stage" instruments, i.e., used in theatre, as opposed to real instruments.[12] In this case, "real" means "functional in playing music" and "stage" can mean (although not necessarily) "non-functional, cannot play music".

Such exuberant expressions of Humanism as these "fantasy" instruments, which may include elements of the kithara, lyre or other Classical instruments, must always be understood as being of allegorical substance. This does not preclude the possibility that they were ever built or played: Leonardo's horse-skull *lira da braccio* was a real instrument, as was the *lyra barberina* of Doni.[13] Whether such ingenious instrument images were actually played or not is of secondary interest in comparison to the allegorical meaning and moral identity that they bring to the scene depicted.

The continuity of the body form of the cetra remained intact during these decades. Increasingly, its form was assimilated by other stringed instruments, such as the hurdy gurdy or bowed *viola* or rebec (see Appendix I, Ex. 20, 30).

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[11] Woodfield 1988.

[12] See Winternitz 1979, Chapter 16.

[13] On Leonardo's *lira*, see Winternitz 1982; on Doni's instrument see Palisca 1980 and Palisca 1981.

4.1.2 Base The flat, wide extension off the bottom of the Roman kithara is the base, so called because of its apparent function as a stabilizer for the instrument to stand upright without support. The Byzantine *pandura* had prominent end projections which anchored the strings, while earlier Roman instruments show less pronounced body end projections, although this may be as much a fault of the most common medium in which they were depicted - sarcophagus stone carving - as anything else; we can assume they had some functional part for string attachment, whether a wide-ish, flat extension, or a smaller button-type, as the bridge was not a string anchor.

The kithara base appears on some lyre-family instruments by the 9th c., including the fingerboard cithara shown in **Pl. 14**, and on lutes in **Pl. 43** and **62** (an earlier example - Winternitz's "eureka! missing link" mosaic - from the 6th c. may show a broad base, however the proportional realism may also be questioned, again due to medium and style). It would seem clear that **Pl. 14** and **62** - works from the 9th c. - must share a common model or set of models, in terms of morphology, of earlier, Italian origin.

On the cetra, the base always has the function of string anchor. On the Classical kithara, the base may have facilitated string anchoring, but it also could stabilize the instrument in a standing position. Similar to the cetra, the pandura always depended on a wooden projection off the end of the body in order to fasten the strings. Bridges which were glued to the soundboard, and to which strings were fastened, seem to have appeared first on Arabic lute forms, versions of which turn up in the paintings in the Cappella Palatina in Palermo dating to the mid-12th century.[14] Using these Sicilian sources to project backwards a bit chronologically, we can imagine that glued-bridge construction was being practiced already during the 11th century by Arabic luthiers (unequivocal sources which would place this type of construction before the 11th c. are unknown to me).

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[14] Kapitaikin 2011.

Carolingian *pandura* forms naturally inherited the end projection from their Byzantine cousins. Yet if one of the Utrecht Psalter drawings is reliable (**Pl. 62**), the kithara-style base had been adopted on some lutes to serve as the string-holder. Much more common, however, was the *pandura*-style end projection, in various forms (including the Christian lily or trefoil) as seen on the surviving Byzantine *pandurae* and on the artifact from Corinth (**Pl. 35-40, 49**). The kithara-style base is seen on a number of 13th-c. cetre (**CE 6, 8, 9**), some four centuries after the Utrecht Psalter lute. Logic would suggest that lute forms existed in Italy in the intervening centuries which featured a similar base to anchor the strings, and part of this gap is filled in with the 11th-c. models used for the Hamilton Psalter (**CE 3**), copied in the 12th century.

Looking at the Catalog data, we might be tempted to conclude that some or many 14th-c. cetre had no end projection on the body. This is due to half of all Trecento sources being Neapolitan manuscript miniatures, and three-quarters of these show instruments without bases; the physical size of the cetra images is so small as to preclude the detail of a base. Meanwhile, the other 50% of Trecento cetra sources are frescoes, with incomplete or unclear body views showing no base, with the exception of one of the Assisi cycle (**CE 15k**) which seems to feature a base of modest proportions. Three instruments found in two somewhat larger miniatures (**CE 20**) from the second half of the century all show prominent end projections, suggesting that the Trecento cetre normally had them.

By the 15th c., from **CE 23** on, most of the sources which show the bottom of the body of the cetra have a base. A few exceptions are **CE 29, 33,** and **35**, although some artists may simply have left this feature out as an unimportant detail of the body form. Other sources show a more elongated form, such as **CE 7** and the significantly later **CE 23**. It is interesting that **CE 23** has adopted such a wide, dominant base for the body, for this is one of the new features that can identify it as something new, a cetra that references the Classical kithara in new ways: a Humanist cetra.

4.1.3 Horns Emanuel Winternitz's "missing link", or "cittern with atrophic kithara features....precisely the same atrophic features which puzzled us in the citterns of

Mersenne and 17th-century Dutch genre painting", was shown in **Pl. 29**.[15] The single strongest "kithara feature" for Winternitz were the "wings", or in his own words, "If we turn this instrument (ed.: **CE 32** in **Chapter 3**) over and rest it on its base, we can hardly fail to see behind its shape the spectre of the ancient kithara with its arms extending from the body: these arms have shrunk into the "wings" of the more modern instrument."[16]

These "wings", or "horns" (the term used by Renaissance literary references and which I would prefer to use), may take different forms in general shape (straight, as **CE 10a**; out-curved, as **CE 6**; incurved, as **CE 12**), in length, in width (tapering or non-tapering), and in size proportional to body.[17] Some body shapes have shoulders simply consisting of two straight lines intersecting to form an angle (**CE 1**), while others use curved lines. An intersection is not always present as a morphological feature on images of the instrument - upwards of one quarter of all cetra sources showing that section of the body do not have them, a fact which suggests that the theory of Winternitz (concerning the presence of horns as a primary defining feature of a cetra) was overly simplistic.[18]

In Neapolitan miniature painting from the second third of the 14th c., the lack of horns on depictions of plucked instruments can lead to uncertainty in ascertaining whether or not a particular image is to be understood as a cetra or a viola. The same problem exists to a lesser extent in North Italian miniature painting of the 12th c., where similar spatulate-bodied, necked chordophones may be found both played with a bow and plucked, and

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[15] Winternitz 1961, 228-29.

[16] Winternitz 1961, 225.

[17] See Chapter 5 for selected literary references.

[18] Wilhelm Stauder correctly made this point in 1979 as a refutation of Winternitz (Stauder 1979, 226).

even earlier in a handful of Byzantine miniaturess showing waisted body forms.[19] In later depictions of the 15th and 16th centuries, an occasional absence of shoulder horns is less confusing, for other features to be described below, such as the large wooden frets, string-attachment extension and peg-head type never seen on the lute, all confirm the image as a cetra.

The frescoes of the Elders at Anagni (**CE 4**) show a selection of cetra types which, together with the Hamilton Psalter (**CE 3**) include all basic possibilities of body shapes, with and without horns. The Hamilton miniatures show more detailed and exaggerated body features, which may have to do with the medium type, physically small details of a miniature: the salient characteristics must be recognizable in order to represent the iconographic identity as David's cithara. **CE 3b** is reminiscent of the geometric form seen in **Pl. 41**, the frontispiece of the Carolingian Stuttgart Psalter. Its long neck points to its heritage with the pandura of the pre-Carolingian period that has been discussed in **Chapter 1**. Yet **CE 3b** is apparently the last gasp of this body shape, for no further examples follow it.

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[19] Regarding the 12th c. sources, compare, for example, the bowed instruments shown in two miniatures from Mantova, Biblioteca Civica PS C III 20, f. 1v-2, reproduced in Bachmann 1973, II, 106, with CE 1. For an example of a Byzantine source, see Pl. 73.
The Italian vielle in the period under consideration had, broadly speaking, two types of body form, waisted and oval. It was argued in Chapter 2 that the presence of horns on the bodies of 11th and 12th century necked chordophones helped to differentiate two otherwise very similar instruments into plucked vs. bowed, concerning the identity of the instrument and how it generated sound. The close proximity of vielle and cetra body forms continued into the 16th c., and this has been noticed in modern research, which has sometimes described the cetra as a "plucked vielle", or the vielle as the "forerunner" of the cetra, which does not reflect the historical chronology presented by the sources. See, for example, Geiringer 1943, 92.
In the Quattrocento, too, the vielle and cetra manifest themselves as a pair in terms of shared musical function for the Humanists as the *lira da braccio* and cetra. Both were used primarily to accompany solo singers improvising *strambotti* and other courtly text forms, and were not used musically to make florid counterpoint as described by Johannes Tinctoris for the *viola cum arculo* and lute, inventing ornate proportional melodic diminution. For Tinctoris' first-hand description of a performance with two *viole*, refer to his treatise at http://earlymusictheory.org/Tinctoris/texts/deinventioneetusumusice/#paneo=Edited (accessed 06.12.2017). The absence of a specific mention of the *lira da braccio* in Tinctoris' treatise, written during the 1470's at a leading Humanist court (Naples), is but one of many puzzling questions about what he left out of his commentary; the omission might have to do with a certain disdain on the part of the Belgian theorist for instruments which were not normally used to play Franco-Burgundian style vocal polyphony (see his comments on the cetra in Appendix II).

Cetre from the 12th and 13th c. manifest body shapes which are common in sources of later centuries. **CE 3a**, a 12th-c. work based on earlier models, finds, for example, a striking parallel in **CE 12** from at least 100 years later. Similarly, **CE 6** shows an early "tulip" shape, with larger, outward-curving horns that will take related forms in the Assisi cycle (**CE 15i**, **15l**, **15p**), including some examples with elongated bodies (**CE 15k**, **15o**). Instruments from the 14th c. continue the 13th c. forms, but by the fourth decade of the century, some manuscript miniatures of Neapolitan origin show hornless bodies (**CE 17, 18, 20**) while another work in Florentine style, a fresco from the second half of the century, provides some evidence for experimental body shapes (**CE 19**). **CE 22**, an early 15th c. panel joins this Florentine example with a lute-style peg-box, raising the question of whether it is, in fact, a cetra. Although we cannot see the lower end of the body, the pointed shoulders are clearly suggestive of the cetra form.

The hundred years between c. 1420/30 and c. 1535 sees a flourishing of many different body shapes for the instrument, which can be posited to have been divided in two different constructional types. The first was the traditional form in which the resonator, neck and peg-head were all carved from one block of wood, and the second was a newer type of built-up construction, achieved by glueing the back to the sides and joining the neck to the body, or possibly glueing the back to one piece from which the sides, neck and peg-head had been carved.[20]

The new constructional method which this study proposes would have gone hand in hand with the "parts" mentality, and it began with the horns, or more accurately, with the yoke of the kithara. **CE 34** (c. 1490) shows a clearly articulated "yoke" on a cetra (**Pl. 93**):

[20] Forrester 1988, 61, sees built-up construction as having begun around the mid-16th c.: "The small constructed (Italian) citterns would seem to originate in Paolo and Girolamo Virchi's experiments." It is important to bear in mind that there is no 100% proof of built-up construction before the second half of the 16th century.

Plate 93: Giovanni Pietro da Birago, Engraving: Virgin of the Rocks with Child, c. 1490, detail showing cetra.

The yoke is the slightly curved piece of wood at the end of the body where the neck joins the body. The pointed ends of the peace form the horns, and there is a clear line of separation between this piece and the sound-board of the instrument. If this were the only data from which to make judgment, we might interpret the image as having a one piece carved out body, possibly also including the neck, on top of which a fingerboard has been glued. But other sources points to a different conclusion. The works of Giovanni da Verona include three intarsiated cetre and one relief carving; a fourth intarsia, a bit earlier, was

probably done by Giuliano da Maiano. These intarsie are **CE 32, 36, 39** and **43**. All four instruments appear to be of built-up construction because, to begin with, if these artists had wished to depict carved instruments, it certainly would have been within their level of technical skill. It would be hard to imagine that the horns on these instruments, for example, were carved out of one block of wood. In the case of **CE 32**, we are fortunate in that the perspective of the work allows us a detailed view from the back of the neck joint construction. The neck has been glued to a cross piece, a "yoke" (**Pl. 94**):

Plate 94: New York, Metropolitan Museum of Art, Gubbio studiolo (Giuliano da Maiano?, 1478-1482), detail of cetra.

Judging from the direction of the grain in the wood, the yoke seems to be cut from one piece, including a heel protrusion to seat the neck, and the horns which also show the same wood grain. It should be emphasized that the *intarsiatore* did not have to show the neck joint in this way, for the heel of the neck could easily enough have been formed from one piece of wood in the intarsia. Yet this was not the case, and much trouble has been taken by the artist to show the details, as realistically as possible, on this cetra.

Other images suggest a similar constructional method. **CE 30, 25a-c**, and perhaps **23**, share certain features with the intarsie. If **CE 23** indeed represents a constructed cetra, it would provide evidence that some builders were using it in the 1420s or earlier. There seems little doubt that by the 1440's-1450's, constructed cetre were in fashion. Research on 16th c. cittern construction has concluded that two types were known, carved and built-up, and that built up cittern construction began around the middle of the 16th century; a further conclusion for that period associates built-up construction with smaller sized instruments, whereas larger citterns were carved out of one piece of wood.[21] This observation seems to have been valid already in the 15th-century, where the examples which have been mentioned above all appear to have been smaller sized cetre.

4.2 Il Corpo della Cetra

4.2.1 Body Depth Body depth is uniform in all detailed examples before **CE 32** (c. 1480) or possibly **CE 30**, insofar as the perspective of the depiction allows judgement; tapered depth begins with these, then **CE 36** (1490's), **39, 43, 47** (same artist as **CE 36,** Giovanni da Verona), **CE 45** (1510-1520), **CE 48** (1525) and **CE 49** (1526). The number of examples with this clear taper or shallowing of the body depth towards is 8 out of 52 total. It is therefore inaccurate to claim, as some researchers have, that the cetra always had a tapered body - it

[21] Forrester 1988, 60-61.

did not until the very late stage of the Humanist form.[22] The tapering depth was one of the features devised by Humanist artists in emulation of the sound-chamber of the kithara and/or the tapered contour of the chelys-lyre's tortoise shell. These ancient resonator shapes, observable and available to anyone aesthetically interested in Imperial culture on numerous sarcophagi and other monuments known to the Quattrocento, represented a logically consistent and plausible derivation for what was seen as the re-invented kithara of the Classical Age. That artists such as Gentile da Fabriano, Raphael and Filippino Lippi were studying such monuments in the 15th c. has been discussed in **Chapter 2**. For further comment on the tapering side profile of the cetra resonator, see section **4.4** below.

4.2.2 Back As mentioned previously, two different kinds of body construction are seen in sources beginning in the second third of the 15th century. Similarly, surviving 16th-c. citterns are of two kinds, those carved from one piece and those of built-up construction, the latter typically with backs of glued-together ribs.[23] Built-up construction could also include joining a one-piece back to the sides with glue. 16th-c. instruments have slightly arched backs, according to the research of Peter Forrester. Earlier cetre may also have had subtly arched backs, or they might have had ridged backs like the Classical kithara depicted in countless Greek and Roman sculptures. The latter would seem logical for the Humanist cetra, which was inspired in certain features by the Classical kithara. Conclusive data regarding the profile(s) of the back of the cetra is lacking.

4.2.3 Sides The sides of the body may be flat or incurved. Incurved, carved sides are also seen on the vielle and lira da braccio While many cetra depictions show flat sides, there is one early and one late source clearly showing inward carving or scalloping of the sides, **CE 8** and **CE 44.** On the latter, the cetra is shown in a rare rear view from behind the angel's left shoulder, enabling the viewer to study the shoulders, neck and peg-head from behind.

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[22] Examples of publications describing the tapering body depth as a fixed characteristic include Burzik 1994, Segerman 1999 and Tyler 2001.

[23] See Forrester 1988 for a discussion of the two types of construction.

The rendering looks suggestively like one-piece carved construction, although we cannot be certain this was the artist's intention.

CE 32, CE 30 and possibly **CE 23** show single or double holes in the side of the cetra. For what purpose were the holes drilled? At least two ideas come to mind. The first hypothesis has to do with sound, which would be fine-tuned or adjusted through the placement of holes allowing air to escape from the sides as well as from the soundboard. Gubbio (**CE 32**) has a circle of holes on the soundboard, and two holes approximately halfway down the side, placed next to each other on a parallel plane to the edges of the top and back. Schifanoia (**CE 30**), on the other hand, shows what looks like an inset rose and a single hole on the side. This is a much more difficult source to glean details from, given the state of the fresco and partial covering by the female figure directly in front. What looks to be a hole in the side could in fact prove to be the end of the woman's hair braid, pending a definitive close-up examination. Were this the case, we would still have the contemporary Gubbio source, which is unequivocal in the data it provides.

According to Tucci and Ricci's research on the later *chirarra battente* in Calabria, this instrument type also featured holes on the sides called "ears": "The players very often drill two little holes, called orecchie (ears of the guitar), in each side, at the point of the central bouts. This is done when the sonority of the instrument is not considered 'open' enough; the players say that the ears 'give vent' to the guitar."[24] It is possible that the holes on the cetra had a similar function.

A second possibility seems more plausible, however. This has to do with method of building briefly discussed above under "Horns", so-called built-up construction. Peter Forrester wrote about the presence of side-holes in the context of the *chitarra battente;* rather than open the sound, he noted, the holes may "indicate a particular method of construction. Filled in, they also exist on the Ashmolean Stradivari guitar, and on a six-

[24] Tucci and Ricci 1985, 83-84.

string circa 1790 guitar in my own possession."[25] If the methods of cetra construction in the sixteenth century were to be imagined, say, as having been used from the mid- or earlier 15th c., with smaller instruments more identified with built-up construction and larger ones carved from one piece, then holes in the side or sides would have been used to attach the long thin strip of wood (to be heated and bent into a U-shape to form the sides) to a mould. A separate back was glued onto this side piece, and a separate neck block was attached. The sound-board was glued on next, followed by the frets to finish off the basic construction of the cetra.

4.2.4 Sound-board 16th-c. surviving citterns have arched tops achieved primarily by gluing the top to arched braces underneath to counteract the downward pressure of the bridge under the tension of the metal strings.[26] Metal strings are presumed to have been a 15th-c. innovation for the Humanist cetra (see Strings section below), and logic would suggest that 15th-c. sound-boards were similarly constructed, i.e., arched via brace attachment. This leads to the next question: was the sound-board of the cetra, prior to the 15th c., arched? Downward string pressure was always a factor, also with gut strings. It therefore makes sense that cetra tops were either somewhat arched - probably the most likely scenario - , or supported by a sound-post (an internal post under the bridge) - less likely as a violin-associated modern concept - , or of substantial thickness to counteract pressure from above, detrimental, perhaps, to the response and vibration of the top.

An interesting example specific to the cetra sound-board is the early 16th-c. work of Fra Giovanni da Verona at Monte Oliveto outside of Siena (**CE 39** and **43**). **CE 39** was made during the years 1503-1505, with a one-piece top which cracked, possibly because the wood used for the inlay had not yet completely dried. The second example from 1511 - 1512 apparently sought to address the problem encountered by the first inlay by using a three-piece top, with less chance of cracking. In any case, the different construction of the

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[25] Forrester 1986, 64. The author also points out that "the metal strings and string fixing (ed. of the *chitarra battente*) are copied from the cittern...the bend in the sound-board could also come from cittern construction."

[26] Forrester 1986, 63.

intarsia, as regards the top of the cetra, is dramatically obvious. A majority of sources would suggest that one-piece top construction was the norm, and that a three-piece top construction was a response to avoid the (embarrassing) problem of intarsia wood cracking, at least for this particular setting, Monte Oliveto Maggiore.

4.2.5 Rosette Part and parcel of the top was the rosette, also called the rose. Over the study period here undertaken, there were two kinds, the circle of holes, and the inlaid carved rosette. The Monte Oliveto *intarsie* mentioned above are clear examples of the latter. Carved inlaid rosettes, in medieval plucked necked-chordophones, were typically used on gitterns and on those (fewer) cetre which did not have the more typical circle-of-holes rosette. Examples appear from the mid-15th c. (**CE 30** possible, **CE 31** also possible), but some of the Assisi cetre (**CE 15j**) might be interpreted as having this already in the early 14th century. Lutes, by contrast, normally had rosettes that were carved out of the same wood as the top itself. Why? Possibly because lute tops were by heritage and tradition thinner, more delicate, whereas the smaller gittern and cetra tops were thicker and better able to incorporate a superimposed rosette without acoustic compromise. To speculate further, perhaps gitterns and cetre may have been more home-made (with add-on rosettes by specialized craftsmen), as opposed to lutes having been made by more professional/ specialized lute builders.

4.2.6 Bridge Another critical part of the top was the bridge. The strings run over the bridge to the end projection, with one exception among the Catalog Entries detailed enough to show this part of the instrument; in **CE 29**, the strings are attached at the bridge. In this particular case, the artist may have confused the viola da mano with the cetra, although anomalies are not uncommon in music iconography. While it is not impossible for metal strings (the documented string material during this Humanist period according to Tinctoris) to be fixed to the bridge, virtually all other examples have strings running over the bridge, attached to the end, or attached to a kind of tailpiece-bridge.[27] The Anagni Elders cetre (**CE 4**) feature such a device, itself attached to the end projection,

[27] For the Tinctoris string reference: http://earlymusictheory.org/Tinctoris/texts/deinventioneetusumusice/#paneo=Translation

which presumably had "feet" to raise the attached strings to a playable height above the sound-board. **CE 7** shares this feature. Another early source is **CE 3**, where the artist(s) took the trouble to draw curved bridges on some examples.

Two common bridge shapes emerge on those images detailed enough to see the form of the bridge. 15th-c. depictions often show a single, thinnish bar with feet at either end, which in some cases, for example **CE 32**, hardly looks robust enough to support the downward pressure of the strings. Yet it is simply too common to write off as fantasy. Could it have been a metal bar? It is seen during the Humanist period when the cetra had metal strings. The second, later type is the "aqueduct style", of substantial construction with multiple arches and feet, which is mainly associated with the works of Giovanni da Verona.
An interesting, early Humanist cetra bridge is the bulky one found on **CE 23**, partially covered by the angel's hand holding the plectrum. Although it is difficult to be sure what the artist was trying to depict, it seems extremely wide, apparently made of the same wood as the block frets, the color of which is the same. This fresco, painted in the 1420's, is the first full-blown Humanist cetra, with the exaggerated features described in **Chapter 2** that began with **CE 21**, the Incoronation of Gentile da Fabriano. **CE 23** is bolder and more innovative than **CE 21**, and the bulky bridge may remind us of the massive rectangular kithara bridge seen on the kithara on the left in **Pl. 26**. This cetra bridge, along with the special frets (see **Frets** section below), new neck-into-body joint (indicating built-up construction?), prominent horns and multiple-circle rosette strongly suggest something new and eye-catching: a modern evocation of the Classical kithara, using elements of ancient sculptures and newly translated Greek texts, such as Pollux, mentioning the parts of the kithara.[28]

Sound-boards were in some cases decorated with inlay, paint, gilding and possibly relief carving. The earliest decorated tops are from c. 1310-1315 in **CE 15l** (red-white herringbone edge painting, or perhaps binding inlay?) and **CE 15m** (black-white herringbone edge; red-white-black squared inlay or painted ornament). One-hundred-and-thirty years later, the

[28] Concerning the parts of the kithara, see the discussion on the treatise of Doni below.

next decorated tops appear, **CE 25**, with carved (or painted?) medaillons, roses, vines and portraits in Classical style. Relief carving, inlay and painting would all have been possible, although we may wonder about the acoustic responsiveness of a top thick enough to be relief-carved on a relatively small plucked instrument. Fancy ornamentation? These are the exalted cetre of Apollo, Musica and Mercury, with suitable decoration.

4.3 Al Collo della Cetra

4.3.1 Neck length A general observation from the iconographical material shown in **Chapter 3**, is that the length of the neck of a cetra does not exceed the length of the body, and it will often be shorter, or even considerably shorter, than that dimension. The evolution of the instrument at the end of our period (from 1540's on) is a process, broadly speaking, of the neck becoming longer in proportion to the body. The neck width reduces in dimension as the block kollopes-frets (see **Frets** section below) are increasingly replaced by a one-piece fingerboard with thin metal frets.

4.3.2 Peg-head The earliest cetra peg-heads, like most later ones, have frontal pegs and a three-part shape such as a trefoil - a powerful Christian symbol associated with King David, the Trinity and Purity (**CE 3**).[29] This occurs more often than not on a three-stringed cetra. If the trefoil was not used, a variation upon a three-pointed shape might be employed (**CE 4**). Round or ovoid peg-heads were also used (**CE 5, 10**) from c. 1200, and more rarely, rectangular form as well. These peg-head forms were usually tilted back at a slight angle, although they could be quite flat as well. How artists represented the angle of the peg-head (which was never as much as the angle of the lute peg-box) was a matter of stylistic diversity, occasionally with confusing results for the modern viewer (**CE 6**, where the back-tilting peg-heads are drawn from a side-angle perspective).

In some cases, this "stylistic diversity" has led to perplexing modern interpretations. Let us take the example of **CE 13**, a Bolognese source from the last decade of the 13th-c. (**Pl. 95**):

[29] A solitary exception to frontal pegs is **CE 39**.

Plate 95: San Lorenzo de El Escorial, Biblioteca de El Escorial, MS. a.I.5., f. 235 (1290-1300), detail of cetra.

The modern viewer might be forgiven for asking, what is the form of the neck on this instrument? Some researchers have seen this miniature as evidence for arguing that the citole was indeed known in Italy, following the assumption that the neck of this

instrument has a large hole in it.[30] This hole is then presumed to have the same function as the so-called "thumb-hole" which was part of the one-piece carved construction of the citole. Another source, however, provides an answer to the question of neck form in **CE 13**. It is a miniature from the so-called Hamilton Bible, a Neapolitan work from four or five decades after **CE 13 (Pl. 96)**:

Plate 96: Berlin Kupferstichkabinett MS 78 E 3, f. 463 (14th c.),
detail of Elders with cetre (?).

[30] Burzik 1995, 376-377, misleadingly takes this image as evidence for the citole in Italy, without any knowledge of the wider iconographical context.

These instruments seem to be something in between cetre and gitterns (or lutes). The peg-heads and circle-of-holes rosettes are not found on the latter two instruments. The strings, seen very faintly in this photo, apparently are attached at the end of the body. But the body shape is more evocative of a gittern, and while cetra may be the best name for these, a few more features - such as horns, or prominent frets - would be welcome, in order to feel secure that these do indeed represent cetre. In any case, the nature of this artist's rendering makes it clear that there is no thumb-hole depicted in **CE 13**.

The addition of a carved head at the end of the frontal peg-head probably began during the first half of the 14th century (**CE 17**). This had been in use since the 13th c. on the Italian *chitarra* (gittern), the small lute which had been adopted in western Europe, probably first in Spain, spreading from there to northern Italy, from Arabic cultural contact.[31] The two 14th-c. sources showing carved heads, **CE 17** and **CE 21**, are both Neapolitan, suggesting a possible origin of this feature there. Applying the convention of a head carving to the cetra may have had to do with an increasing Humanist interest in the cetra as a revival of the kithara during the period of Petrarch. In any case, by the second half of the 14th c., the carving of human heads was being used on the some cetre as a nod to figure-sculpture of Antiquity, and by c. 1450 animals, birds and other creatures real and mythological, were turning up on the peg-head (**CE 26, 30**).

The symbolism of the carving may or may not be clear, but Apollo-related symbolism is the most common for the cetra, as Hermes created the chelys-lyre (cetra, in this case) for him. Hence, a head of a human often looks like a young woman or child, which suggests a Muse as one of the nine Muses seen with Apollo on Mt. Parnassus; a woman's head can also be one of the three Graces often depicted with Apollo, or Lady Musica. A lion, dragon or dog's head can stand for the three-headed monster associated with Apollo in the Renaissance, or a wolf can also be linked to him.[32] Carved peg-heads had been seen one to two centuries before, from the late 13th c., on Italian examples of the gittern, a lute type of Arabic

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[31] Note that this exportation from Mozarabic Spain of the gittern in the late 12th/ 13th c. was the opposite of the exportation from Italy to northern Spain of the cetra in the 12th century.

[32] Clark 1974, 26.

heritage, in the spirit of Gothic droleries, but perhaps already referencing Apollonian symbols. The lack of surviving cetra depictions showing a carved head before the later 14th c. does not prove that this feature was unknown before the 14th c. Indeed, it is possible that the gittern inherited this feature from the Romanesque or Franciscan cetra, for carved-head gittern iconography begins only at the end of the 13th century.

4.3.3 Pegs The peg-head held the pegs, and the most common peg type for the cetra is T-shaped, of smaller size than many modern early plucked instrument replicas, with a narrower shaft than that commonly seen on depictions of lutes. The earliest detailed image showing these is the Giotto fresco, **CE 14**. In between **CE 15** and **CE 24**, there is a period of over 100 years from which no source shows peg details. **CE 26** supplies welcome detail about peg shape (T) and how the pegs are placed on the front surface of the peg-head.

The number of pegs seen in detailed 15th- and 16th-c. catalog entries varies from eight or nine to twelve (we shall return to the general question of number of strings later in this chapter). A handful of early sources also display twelve pegs (**CE 8** and **14**, for example). In the case of **CE 8**, the twelve pegs are clearly grouped into three rows of four pegs each. Placing four pegs in a row would not be practical for stable tuning, as the string attached to each of the four, with the exception of the peg nearest the nut, would rub against another peg or pegs in between it and the nut. Thus it would seem that this detail of the sculpture was not completely accurate, and that a real instrument would have staggered pegs to facilitate tuning stability. **CE 26**, on the other hand, shows a much higher level of realism, where the pegs have been staggered irregularly and placed on a faceted front surface of the peg-head, with three different surface planes so that each peg handle (the top of the "T", so to speak) has as much free space as possible around it to facilitate access by the left hand to turn the small peg. And speaking of detailed depictions, some catalog entries provide excellent detail of how the strings pass over the nut and are wound around the pegs. Exemplary in this regard are **CE 15j** and **15k**.

4.3.4 Neck Profile "Neck profile" refers to the cross-sectional profile of the neck. The profile of the neck has been described as follows: "From the 16th-century onwards…the neck is commonly half cut away from behind the fingerboard on the bass side to form a

channel along which the left-hand thumb can slide."[33] Another way of describing the profile would be to image a "P" which has been turned 90 degrees to the right. Such a neck profile, unique among all necked chordophones in our historical period, has little to do with facilitating rapid shifting of the left hand. Rather, it is a formal constructional gesture recognizing the identity of the instrument as a cetra, which continued to feature kollopes-frets (see next section of this chapter) on the cetra as late as c. 1535 (**CE 51, 52**). During the 1520's and 30's - possibly a decade or two earlier, in some cases - these large wooden frets which projected off the fingerboard on the bass side were replaced with a somewhat thinner fingerboard, made from one piece of wood and featuring thin inlaid frets of metal or other hard substance, as on the earliest source showing this from 1526 (**CE 49**). **CE 44** shows a cetra neck from the back during the first decade of the 16th c., which still features the wooden block frets. They are glued on the neck, which is centered on the instrument, as it is on all iconographical sources of sufficient detail to judge (**CE 29, 33, 35, 44?, 45, 46, 47**). These sources portraying the centered neck are important, because it might otherwise be assumed that the 15th-c. cetra already had an offset neck like 16th-c. examples. It did not. The 16th-c. instruments have shaped the back of the neck to echo the time-honored tradition of kollopes-frets, so important as a defining part of the Humanist cetra, as we shall presently discover in the next section **Frets**.

4.3.5 Hook Another feature to be examined is back of the peg-head, which "typically is formed to include a large, hook-shaped protruberance from which the instrument can be hung."[34] In fact, three Catalog entries show a hanging cetra. **CE 7** portrays a musician playing the instrument with a thin white cord or string attached at both ends, without the "protruberance" described above, passing over his shoulder like a modern guitar strap (this feature is quite unique; I have not seen any other lute family instrument shown with such an accessory in the corpus of iconography of this period). **CE 30** depicts Apollo with a cetra hanging from his right wrist from a cord wound around the peg-head, with a hook behind the neck (with a hole in it that the string does not pass through), and **CE 39** presents a

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[33] Tyler 2001. The author adds that this neck profile "enables the player to execute the rapid shifting to high positions required in much of the cittern's solo repertory."

[34] Tyler 2001.

cetra hanging inside a cabinet from a string passing around the upper neck and frets, not from the hook which is visible on the back of the peg-head.

There is no direct evidence that the main purpose of the hook was to hang the instrument up. The hook appears on some examples of the Humanist cetra beginning around 1470 (**CE 31).** Just eight out of fifty-two Catalog entries show a hook. There are two kinds of hooks, thin and thick. Thin hooks appear to be more consistent with built-up construction, as in the *intarsie* of Fra Giovanni da Verona (**CE 36, 39, 43**). These have the approximately the thinness of the horns, and do not seem to be from a carved block.[35] Thicker hooks (**CE 32, 45**) seem closer to one-piece construction for the entire body/neck/peg-head unit.

The hook had a practical function and a theoretical one. The practical purpose is shown clearly in **CE 44**. Because the frets project off the bass side if the neck, the player's left hand cannot grasp the neck with the thumb as on the thinner lute neck, for example. The hook provides a stabilizer against which the hand can rest. Half of the sources show a small hole in the hook, to which a cord could be attached, as in **CE 36**. The same knotted cord is shown on the triangle next to the cetra in **CE 36**, which is used when playing to hang the triangle, suggesting that the same purpose applies to the cetra's cord, which could be placed around the wrist, as in **CE 30**.

For the theoretical function of the hook, we have to begin by stepping outside our proper period of study. The earliest post-Renaissance "musicologist" to undertake a detailed study of forms of the ancient kithara was Doni, whom we might regard as a late Humanist. Doni designed a new type of Antiquity-inspired lyre which he described in the treatise *Lyra Barberina amphichordos*, finished by 1635 but only published in Florence in 1763.[36] Putting his new creation into context, he provided a detailed discussion of the ancient kithara as well as a catalog of drawings collected from his studies of local Roman monuments. In Palisca's study of Doni's work, he writes "Chapter V details the parts of the lyre and

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[35] An exception is CE 33, which is not a work of Giovanni da Verona but probably Giuliano da Maiano. This shows a hook which looks carved from the same piece as the neck and peg-head (?).

[36] Facsimile edition and commentary in Palisca 1981.

kithara… Some of the kitharas display *kerásbola*, which are *kténia* or ornaments added to the *ancones* in the form of tooth-like protruberances" (**Pl. 97**): [37]

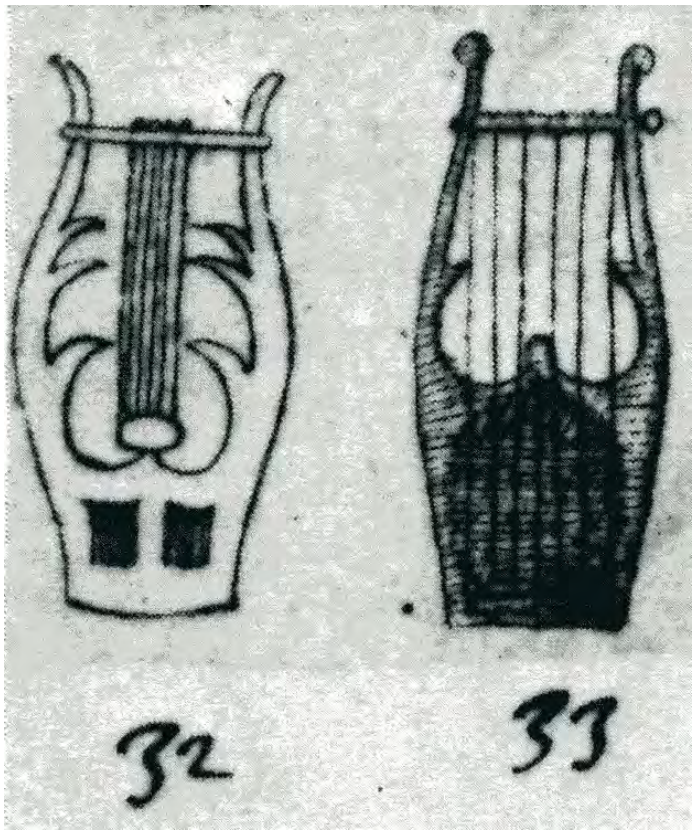

Plate 97: Two examples of "tooth-like" ornaments on kitharas depicted on Greek coins; drawn by Giovanni Battista Doni, c. 1630, for his treatise *Lyra Barberina amphichordos;* reproduced from Palisca 1981.[38]

Before Doni, writers such as Vincenzo Galilei had made reference to Julius Pollux' Roman-era description of the parts of the kithara, which the Renaissance knew in Latin translation. An edition published in Basel in 1541, for example, included the term *cubiti*

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[37] Palisca 1981, 40-41.

[38] Palisca 1981, 52-53, Pl. 9a.

(from *cubitus*, "elbow") in reference to the "tooth-like" ornaments.[39] **Pl. 98** shows a Byzantine kithara with pronounced "tooth-like" ornaments:

Plate 98: Mariamin, Syria, mosaic showing Roman kithara, 4th c.[40]

Maas and Snyder, too, discuss the "points" on the Classical kithara as a consistent ornamentation on the instrument throughout its period of use.[41]

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[39] From IVLII POLLVcis Onomasticon…Rodolpho Gualtero Tigurino Interprete Basel 1541: Julius Pollux, Dictionarium, Libri IV, Caput Nonum.

[40] www.alamy.com, alamy stock photo. See Paraskevi 2010 for a detailed discussion of the mosaic.

[41] Maas and Snyder 1989, 66-67.

The Humanists, then, made a conscious adaptation of this feature on their cetra during the second half of the 15th century. Modern research has consistently viewed the hook on the cetra as having been taken over from its supposed predecessor the citole, which typically had a so-called "thumb-hole", or hole in the deeply extended spine of the neck, where the player placed their thumb to hold the instrument when playing.[42]

The same argument for the citole as the predecessor to the cetra is often summoned regarding the tapering body depth first seen on the cetra around the same time as the hook, to which the response is the same: it appeared on the Humanist cetra as an emulation or reference to the shape of the *echeum* or resonator of the kithara, which had a keeled form and tapering depth when viewed from the side.

This, in other words, is the theoretical function of the hook. In most of its features, including the hook or "tooth", the Humanist cetra copies the Classical kithara in a visible and obvious way, if one views it through period eyes. Palisca's remarks on Doni's treatise may now be recalled:

> "Chapter V details the parts of the lyre and kithara. The *cornua* in the early lyres were curved upright members often made from animal horns and were hollow to amplify the sound. They were later replaced by the *ancones*, in the shape of two S's, one inverted against the other, called *pecheis* in Homer and Hesychius.... The yoke, *synzygós*, a wooden horizontal member supported by and crossing the two *cornua* or *ancones*, held the strings through *clavicula* or *kollopes*, later termed *kolláboi*...to tune the strings. Some of the kitharas display *kerásbola*, which are *kténia* or ornaments added to the *ancones* in the form of tooth-like protruberances...Doni believed the two wooden upright arms in the marble sculpture of the Mattei villa supported a kind of fingerboard. The *magas* is a square, somewhat incurved, table with an opening at the bottom to receive the strings, which passed over the table as a kind of bridge. In the Mattei kithara the *magas* was hollowed underneath and there was an orifice that admitted sound, the *echeum*, and a grating, analogous to

[42] See for example, Wright 1977, 31.

> the roses of modern instruments, protected this cavity from dust…The kithara was held to the player through a *balteus* or strap…Finally Doni described the use of T-shaped tuning keys (*epitonia*) seen in certain polychordal kitharas, as in that reproduced from a marble exemplar owned by Cassiano dal Pozzo."[43]

For further comment on the hook, see section **4.4** below.

4.3.6 Strap The one and only source showing a kind of shoulder strap, thinking of modern guitar, is **CE 7**. Strictly speaking, this is not a "strap", as in "belt", but a cord of some kind. The function however is the same: it goes over the shoulders to hold the instrument as one plays in a standing position. It is shown on a mid 13th-century instrument, which is significant because this is the period before the Humanist hook or "tooth-like protuberance" started appearing after the middle of the 15th century. As stated above, the hook gave leverage against the left wrist to stabilize the instrument while playing, in as much as the left hand thumb was blocked so to speak by the projecting kollopes-frets. During this period, a short cord is sometimes seen threaded through a small hole in the hook, presumably to be looped around the wrist for additional stability when playing (usually done standing up, by the way), or possibly, to free up the left-hand for other use while the cetra hangs from the left forearm (see **CE 30**).

4.3.7 Parts: Summary Parts that have been previously discussed in this chapter may now be seen with a broader theoretical background following Doni's essay and Classical writers such as Pollux: Base = *magas*; Horns = *cornua*; Yoke =, *synzygós;* Rosette = *echeum* grating; Body = *echeum*; Hook = *kerásbola/kténia*; Pegs = *epitonia*. Even the strap or cord (*balteus*) is specifically depicted in one source. The Plectrum (= *pecten* or *plectrum*) will be discussed in the String section below. The Humanist cetra uses Wire strings (= *fila* : Pollux). The prolific use of circular holes to form the rosette on the Sound-board, and on the Sides, may relate to an aspect commented upon by Maas and Snyder: "Many of the

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[43] Palisca 1981, 40-41.

(Classical) kitharas have small circles on the soundbox…usually at about the height of the bridge, or a little above…they can also be present on the back of an instrument."[44]

I have intentionally left one component out of the list so far, which will now be treated, frets. These, like the other components, also received a Humanist adaptation (and were one of the first components to have done so as part of the instrument's evolution in the early 15th c.), but we shall begin with frets from earlier centuries.

4.3.8 Frets: Forms The history of frets on lutes effectively begins with the surviving Byzantine *pandurae* discussed in **Chapter 1**. Solid evidence for fretted instruments prior to these is simply not at hand, although the idea in itself is worth entertaining. A Hittite source (14th c. B.C.; see **Pl. 17**) presented in the opening chapter has been discounted by Richard Campbell as proof of the existence of a fretted lute in the ancient Near East.[45] The Byzantine instruments are dated c. 5th - 8th/9th centuries, and were of two types, fretted and unfretted.[46] Frets were also of two kinds, tied-on gut (or sinew of some kind), or thin pieces of wood glued into slots cut into the fingerboard. Of the seven surviving lutes, three have slots cut out to receive glued-in wooden frets.[47]

Iconographical sources showing fretted chordophones are few and far between before the end of the 12th century. Prior to the Antelami relief in Parma, there are only the two Utrecht Psalter instruments (**Pl. 65b - 66a**), which indeed echo the Byzantine *pandurae*, plus the Ivrea Psalter miniature from c. 1000 (**Pl. 70**), which clearly manifest frets. The line markings on one of the Fenollar instruments (**CE 2**, Elder 5) and Hamilton Psalter (**CE 3b**) are not unequivocal instances showing frets.

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[44] Maas and Snyder 1987, 67.

[45] Campbell 1968, 15-16.

[46] Dating from Vendries 2012, 101. Eichmann 1994, 43, thinks that some examples might be as early as 3rd c.

[47] See Table 23 in Eichmann 1994.

Happily, two depictions from three-dimensional sources more than make up for the lack of information in earlier visual iconography concerning cetra frets, **CE 5** (Antelami, **Pl. 99)** and **CE 8** (Ferrara Duomo, **Pl. 100**):

Plate 99: **CE 5**, detail of frets.

Plate 100: **CE 8**, detail showing frets.

Both show substantial, rectangular fret forms which can only have been made of wood on a real instrument; Tinctoris will explicitly confirm wood as the fret material some two hundred years later.[48] Both sculptures bring up the question of the prominence of the frets: why are they so bulky and massive? One might argue that if the strings were made of metal, the frets would wear less quickly, from constant contact with metal, than with soft material such as gut, which is seen on other instruments (for example, gitterns, a bit later in the early 14th c.). After all, we know from Tinctoris that the cetra had metal strings, at least during the second half of the 15th century.

Yet that in itself does not prove that the instrument necessarily used metal strings two hundred years earlier. In the 12th and 13th c., it shared important features with the vielle (such as string number, three, with bordun strings, plus general body form and size), an instrument which never had metal strings. In addition, as we will see in the section below on **Strings**, there were certain good reasons that the cetra of the Humanists consciously adopted metal strings as a novelty for their re-invented cithara. And if the case of the *pandurae* can offer any clues, it shows that wooden frets could be (and were) used for gut-strung instruments of earlier periods.

The bulkiness of the sculpted frets might be accounted for, in part, by the medium of stone carving in the late 12th and 13th centuries, where there were practical limitations to what amount of detail could be sculpted. In the case of the Antelami cetra, the detail is such that the strings have been sculpted as well. This suggests that the size of the frets is just as the artist thought they were in reality, for he could have made them thinner (like the bridge), had he wanted to. In the instance of Ferrara, no strings are shown, probably because there are twelve pegs, and to carve that number, or anything close to it, was out of the question in terms of material; furthermore the viewer stands at a considerably greater distance on the ground below than is the case in Parma.

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[48] Baines 1950, 23.

As Ricardo Eichmann pointed out in 1994, there is also the question of how exactly wooden frets functioned.[49] At a thickness of two to five millimeters, the pandura wooden frets he discussed were considerably thinner, in relative proportion, to the Parma/Ferrara cetra frets, yet the problems of physics are the same: are the tops of the frets flat, rounded or slanted, i.e., saw-toothed, whether with the higher side towards the bridge or towards the nut? The precise point where the string is stopped when the finger is pressed down, in other words, could be one of three possibilities, depending on the shape/plane of the top surface of the fret: the front edge, the back edge, or somewhere in the middle.

On both sculptures, the top surface of the fret appears to be flat. This will be a consistent feature observed on all wooden cetra frets up to the early 16th c., as far as the particular visual sources showing frets allow a judgement to be made. None show frets rounded on the tops, which would mean that when the finger is pressed on the fret, the highest part of the "hill" is the precise fretting point.[50] This would also be a good way to produce a buzz, as for example the sound produced by a graded bridge on a modern Indian sitar.

Similarly, there are no unequivocal sources showing saw-toothed frets, with each fret surface sloping up, going in the direction of the bridge.[51] An examination of the catalog of sources produces no iconographical examples of this system before c. 1500, although one could conceivably argue that such inclined-surface frets could look flat from a distance. Yet the level of detail in some earlier sources clearly refutes this claim (**CE 32**).

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[49] Eichmann 1994, 118.

[50] CE 26a is a detailed relief carving of a cetra where its placement in the church in Rimini allows a detailed close-up inspection, confirming that the fret tops are flat. See my pencil rubbing of this source reproduced in the catalog section for this entry.

[51] Scalloping is a logical development of the earlier block system, where the intonation of metal strings may be compromised or inconsistent if the spaces in between the blocks are too large, potentially allowing differing placements of the finger and degrees of finger pressure. Scalloping, in effect, angles the surface of the fret block to increase in height as one nears the fret edge, which has now become the bridge-facing edge of the block, rather than the nut-facing edge. In other words, the player now presses the finger directly on the surface of the block rather than pressing the finger on the space behind the block.

So the tops of the frets appear to have been flat in their construction, at least in a majority of images with enough detail to examine. The next question arises, were all frets of uniform height, or were they stepped, each getting lower as they proceeded toward the bridge? With this question come others concerning perspective and intention of the artist. The fret block height appears to have been uniform, again, in a majority of sources where this detail can be examined. **CE 8**, **CE 25a**, **CE 25b** and **CE 32** offer especially productive opportunities to examine the issue, showing an unmistakably uniform fret height, as seen in **Pl. 101 - 102**:

Plate 101: **CE 25a**, Detail showing flat-topped frets.

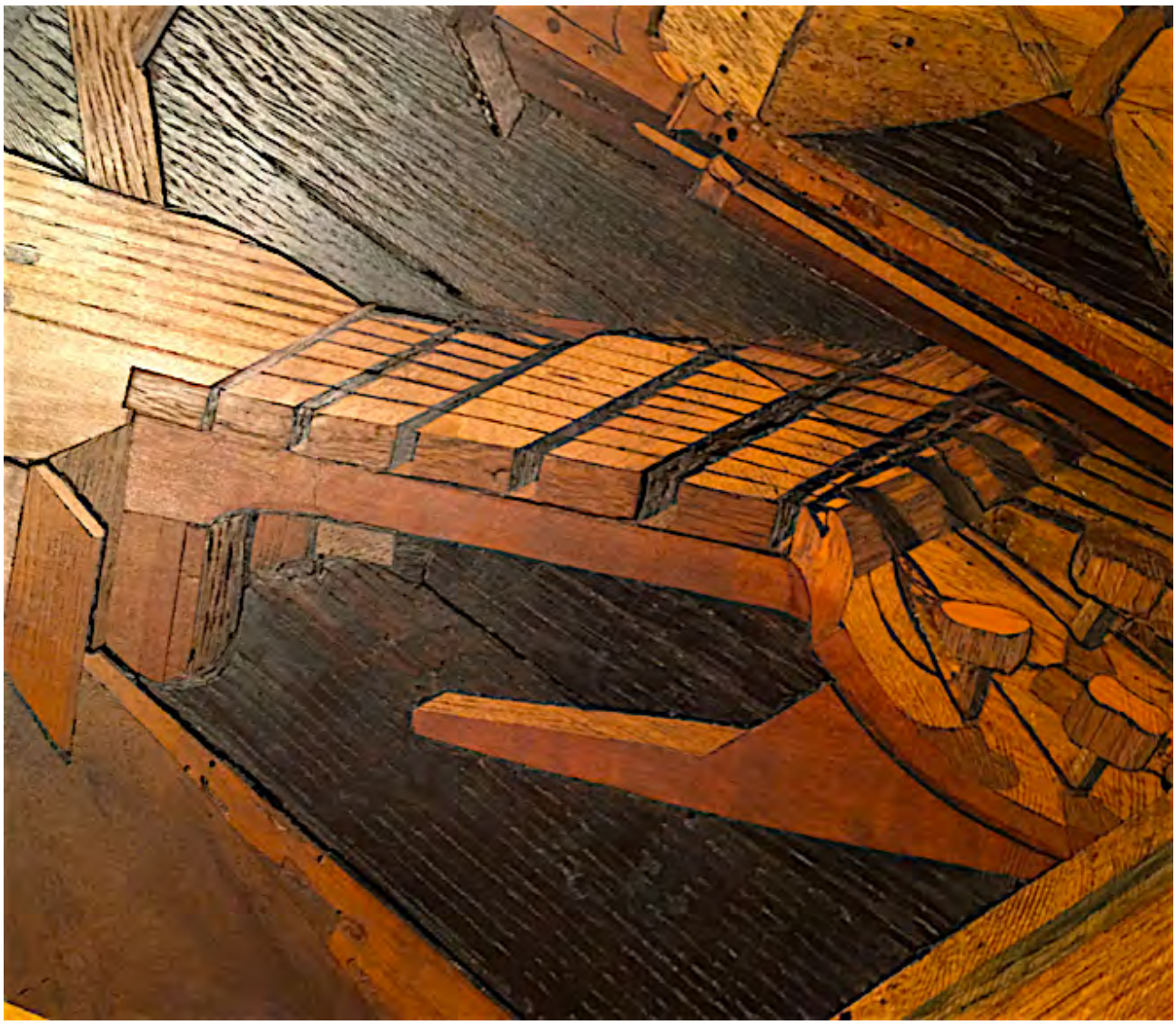

Plate 102: **CE 32**, detail showing flat-topped frets.

The sources **CE 36**, **CE 39** and **CE 43**, all by the *intarsiatore* Giovanni da Verona, seem to suggest a uniform height, although the angled perspective rendering has not been altogether successful in these three works, which are clearly all based on the same studied model. **CE 47**, on the other hand, is also by Giovanni, in the medium of relief wood carving, and this instrument features a uniform fret height (**Pl. 103 - 105**):

Plate 103: **CE 36**, detail showing frets of apparent uniform height.

Plate 104: **CE 43**, detail showing frets of apparent uniform height.

Plate 105: **CE 47**, detail showing frets of apparent uniform height.

Many of the sources just discussed are from the period 1450-1520. The earlier Assisi cetra cycle c. 1315 brings some new information about fret forms, which are also of wood, and of less bulky size. The total number of 16 instruments (**CE 15a - 15p**) may be divided into two groups **15a - 15h** and **15i - 15p**. The first eight (**15a - 15h**) are held by Elders facing to the side, holding cetre that are cut off by the borders of the medallions within which they must fit. This means that only part of the fingerboard, neck and peghead, and very little of the body, is shown on these instruments. None of the cetre in the group (**15a - 15h**) are being played. Three of this group show no frets (**15a, 15f, 15g**) and five (**15b, 15c, 15d, 15e, 15h**) have just one fret (or bridge?) in a high position on the fingerboard (**Pl. 106, 15c**); one (**15g**) has neither frets nor strings (**Pl. 107**):

Plate 106: **CE 15c**, detail showing single fret (or bridge?).

Plate 107: **CE 15g**, detail showing fretless / stringless cetra.

Seven of the eight instruments in the second group (**i - p**) are being played, and the eighth (**l**) is being tuned. All of these are in frontal position and fully visible. All, with the exception of (**l**), have uniform frets of triangular cross-section. The number of these triangular frets varies from six to nine or ten, depending on whether the first fret functions as the nut or not. To stop a note, the finger is placed behind the pointed ridge of each triangular block, over the gap in between the fret in question and the one behind it. The following example, **Pl. 108** (**15j**), clearly shows a seven-fret cetra, with an eighth fret functioning as a nut:

Plate 108: **CE 15j**, detail showing frets of triangular cross-section.

Another example shows the second fret type used in the Assisi cycle. This is the same rectangular block form as Parma and Ferrara, but it occurs only once in the entire Assisi group **CE 15 (Pl. 109)**:

Plate 109: **CE 15l**, detail showing non-triangular frets. The uniform coloring on the fret ends and neck side might suggest one-piece carved construction for the entire instrument including the frets.

These fret-types are the kinds depicted in iconographical sources from the dates described. Other types - for example, flat-planed stepped frets of decreasing height - are physical possiblities, but are not shown in any source. A fundamental premise of this study can be reiterated here: our point of departure in interpreting any image must be to trust the morphological information which the artist is presenting, unless there is reason not to (for example, the work has undergone restoration).

For a discussion of fret systems (diatonic vs. chromatic), see the following section of this chapter. Before leaving the Assisi cycle, we might ask, why would some instruments have just one fret, or in three cases, no frets at all? Elders **a - h** are in the act of offering their cithara to the Throne of God, as they do in many medieval depictions of the Apocalypse, also with crowns and incense bowls. There is no reason for them to offer unfinished or dysfunctional instruments to God, and similarly no reason for an instrument which is not being played to be incomplete for that reason, i.e., because it is not actually being played.

The reason may rather lie elsewhere. There is a feature seen on some vielle depictions which apparently changes the musical function of the instrument.[52] This is a kind of 'bridge' situated about half-way down the string length, attached to the soundboard close to where the neck joins the body. No surviving document specifically names this device, or describes its function, but we might imagine this kind of vielle or cetra (as in Assisi) as a non-melodic, bordun instrument, having the same function as a string drum, perhaps with a 'snare' or 'buzzing' tone color like a bray harp or snare drum. In any case, such an instrument would have had a kind of amplifying, noise-maker function (harmonic of course), appropriate to and required in a formal ritual at the highest court level, perhaps also as a processional ambience. Such instruments are entirely absent from the 21st-c. Early Music practice, and indeed, modern observers of such instruments in medieval / early Renaissance art might scarcely imagine, when seeing an instrument like the vielle, that there could have been such violin ancestors that never played a melody.

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[52] See, for example, the vielle in fresco Madonna in Gloria of Simone Martini and Cenno di Francesco in S. Lorenzo al Ponte, San Gimignano; Martini also painted frescoes in the Lower Basilica in Assisi, where the cetre under discussion are found.

By now, astute readers will have noticed that some cetre were given overly long fret blocks which extend out past the edge of the fingerboard where there are no strings, off the neck, in certain cases markedly so (see detail of **CE 25a** in **Pl. 95** above, for example). These elongated frets are apparently non-functional, for there are no strings above them, which might otherwise suggest that they allowed "bordun" strings to be stopped (and thus no longer be "bordun" strings). Upon closer perusal of the sources, it will be determined that these elongated fret blocks are a feature of 15th c. cetre, beginning with **CE 21**. The elongated frets have at least two streams of influence, one more theoretical, the other more practical, requiring some explanation.

The background, on the theoretical side, for these prominent blocks, has to do with the identity of the cithara according to Classical sources, translated from Greek, which became widely circulated within the educated circles of Humanist schools and courts, starting with the commentaries of Pietro d'Abano on the 13th-c. translation of Aristotle by Bartolomeo da Messina. The *Expositio problamatum Aristotelis* and *Mechanica* are two important examples of texts which contained precious information about the structure of the cetra, to use the vernacular term.[53]

The Classical kithara had no frets, as we saw in **Chapter 1**, because it had no neck. It did have a type of component which regulated the tuning of each string, called in Greek κολλοπες or κολλοβοι and in Latin *clavi chordarum* or *claviculi;*[54] Helen Roberts described these early Greek devices for tuning each string:

> "It seems likely from the literary and pictorial evidence that the early Greeks used a different and less efficient tuning device, consisting of a roll of hide and string which was turned in one piece to alter string tension. We gather from the scholiast Eustathius commenting on Homer, Odyssey 21. 406-9, that tough hide from the necks of oxen or sheep was used for the tuning peg or kollops. This hide is itself

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53 A recent publication has proposed Archytas of Terentum as the author of the *Mechanica*; see Winter 2007.

54 In Pollux *Onomasticon, Libri IV, 62* (Bethe 1966, 219), and Doni *Lyra barberina, Cap. IV, 19 - 23* (Palisca 1981, 99), respectively.

> called kollops and some of the animal fat was left on the skin. For each string a strip of sticky hide was wrapped around the yoke, and after a few turns the string was included, the roll being turned so that the string went diagonally across itself. The same tuning mechanism is still in use today on the kissar, a primitive lyre-type instrument found in East Africa and Abyssinia. These lumps of animal hide would inevitably be rather bulky and cover much of the surface of the crossbar."[55]

The same author wrote in 1980,

> "The fourteenth of the Mechanical Problems attributed to Pseudo-Aristotle deals with the principle of leverage. The question posed is why big kollopes are easier to wind around one and the same crossbar than smaller ones. The entire significance of the passage for our purpose is that the kollopes moved around the crossbar as a centre, and the longer they were, the greater the leverage and the easier they were to tune."[56]

Pseudo-Aristotle's reference to the functional advantage of larger kollopes is noteworthy. During the Roman period, the tuning devices shown on the cross-bars of depicted instruments had a different form than the earlier Greek ones, as Karl von Jan noted in 1882 in *Die griechischen Saiteninstrumente*:

> "Instruments (ed: of the kithara type) from the Roman era commonly had devices attached perpendicularly to the cross-bar which have been compared to a *capotasto* (ed: a large fret attached to the fingerboard for the purpose of stopping the strings) on a guitar....these small wooden blocks project out at a right-angle to the strings; when hastily rendered or reduced to a minimal-size figure, they appear as a small

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[55] Roberts 1980, 60 (footnote 28).

[56] Roberts 1980, 60 (footnote 28). In 1999 John Landels wrote: "Another interpretation of the tuning mechanism has been put forward by Dr Helen Roberts. The word kollops is sometimes confused by ancient writers with the word kollabos, which apparently meant a kind of bread roll. This may be a simple confusion of similar-sounding words, but it may have more significance. The kollopes may have been short wooden rods, shaped roughly like a baguette, about 8-10 cm (3-4 inches) long. They could have been placed against the crossbar, with the top end of each string anchored to the middle of its rod, and wound around above and below the crossbar in a particular way, so that turning the kollops would adjust the tension" (Landels 1999, 53).

wooden board. One finds this apparatus regularly on the wall paintings of the destroyed Campanian cities (ed: i.e., Pompeii and Herculaneum), indeed also on some statuary works."[57]

In a mosaic from the Roman settlement Caesaraugusta (Zaragoza) of the 2nd - 3rd c., we see the set of kollopes projecting out frontally, under the cross-bar of the lyre being played by Orpheus (**Pl. 110**):[58]

Plate 110: Caesaraugusta (Zaragoza, 2nd - 3rd c.), mosaic showing Orpheus.

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[57] Jan 1882, 18. The original text reads, "an den Instrumenten aus römischer Zeit ganz gewöhnlich seitwärts vom Querstab eine Vorrichtung angebracht ist, die man mit dem Capotasto einer Guitarre oder dem Pedal einer Harfe verglichen hat, welche beide die Bestimmung haben, die Saiten um einen Halbton zu erhöhen. Es sind dies längliche Brettchen, auch wohl cylinderförmige Hölzer, welche im rechten Winkel zu der Saite vorne herausstehen ; bei flüchtiger Zeichnung oder bedeutender Verkleinerung der Figur erscheinen sie als ein einziges compactes Brett. Man findet diesen Apparat regelmässig auf den Wandbildern der verschütteten campanischen Städte, doch auch ähnliches an einigen statuarischen Werken." The English translation above is mine.

[58] Photo: https://www.flickr.com/photos/28772513@N07/6802248829 (accessed 18.12.2017).

A 4th-c. Roman mosaic of Apollo and Marsyas at Paphos, Cyprus, shows a similar set of long, rectangular kollopes beneath the cross-bar at the top of the instrument (**Pl. 111**):[59]

Plate 111: Paphos, Roman mosaic of Apollo and Marsyas (4th c.).

[59] Source: https://www.123rf.com/photo_18613515_apollo-from-the-4th-century-roman-mosaic-of-apollo-and-marsyas-at-the-house-of-aion-paphos-archaeolo.html (accessed 10.10.2017).

A 1st-c. fresco near Pompeii features an instrument with the same elongated wooden kollopes as the previous two sources (**Pl. 112**):[60]

Plate 112: Murecine, "Inn of the Sulpicii", fresco (1st c.).

[60] Detail from a fresco at the "Inn of the Sulpicii" at Murecine, near Pompeii. Photo: https://sites.google.com/site/ad79eruption/neighbouring-area/murecine (accessed 10.10.2017)

Karl von Jan's excellent study of the Greco-Roman kithara, as well as other instruments, is the earliest published in-depth account concerning the details of the kollopes, quoted above.[61] Hortense Panum saw Jan as the researcher "who more than any other has singly endeavoured to discover (in "Die griechische Saiteninstrumente," Leipzig, 1882) the ancient methods of tuning"; and regarding Roman kollopes, little has been added to our state of knowledge since Jan's work.[62]

Jan was, of course, not the first historian to delve into the ancient cithara. In 1632 Giovanni Battista Doni completed his essay *Lyra Barberina*, in which he introduced and described his newly-invented lyre as a presentation to Pope Urban VIII.[63] The main part of his work was in fact "a history of the Greek lyre, kithara and similar instruments, indeed, the most ambitious history of these instruments ever written," in the words of Claude Palisca.[64] Doni examined a number of Greco-Roman monuments local to Rome, and he described the components of the ancient instruments depicted on them.

While he knew of kollopes and their function as string tuners, thanks to his familiarity with ancient literary sources, he questioned their representation in art, noting in his commentary: "Where are the *claviculi* or *κολλοβοι* which, the grammarians teach, were provided in kitharas and in lyres and without which the strings cannot be easily tightened?"[65] In another passage, Doni is puzzled by "an oblong table parallel to the yoke of the kithara…with its upper surface grooved." In the three images shown above (**Pl. 110-112**), we see the "oblong table" (or "long board", a better translation than Palisca's for

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[61] Jan 1882.

[62] Panum/Pulver 1940, 44.

[63] Published in Florence in 1763, *Lyra Barberina* was completed in 1632; see Palisca 1981, 1.

[64] Palisca 1981, 1.

[65] Palisca 1981, 37. Palisca translated Doni's *claviculi* as "pegs" rather than the clearer meaning of "wooden elongations" as in "keys" on a keyboard, which better corresponds to the Roman iconography. Doni's text reads: *Ubi enim claviculi, sive κολλοβοι, quos in Citharis, Lyrisque fuisse diserte Grammatici docent, nec sine iis facile fides intendi possunt?*

tabellam oblongam) just below the yoke (cross-bar) of the kithara, with the upper surface "grooved" (or "marked with lines," for *marginata*) to show the spaces in between the parallel wooden blocks.[66] Two more Roman sarcophagus reliefs with Apollo (**Pl. 113**) and Achilles (**Pl. 114**) show a kithara with the kollopes "board" just below the cross-bar at the top, with "grooves" or lines cut in the top (see Doni's remark above); the diagonal X-markings on the front side of the kollopes "board" was an artistic convention representing the overlapping string end tied around each of the individual wooden kollopes, anchoring the string so that it could be tuned by pressing up or down on the block, pivoting on the cross-bar, to increase or lessen the string tension as desired. **Pl. 114** is of special interest, too, for the kollopes "board" found at the end of the fingerboard of the *pandura* on the right:

[66] Palisca 1981, 39. Doni's full Latin passage reads: *Vides autem in posteriori (prior enim mutila est) circa mediam regionem nescio quid eminere tabellam videlicet oblongam iugo citharae parallelam, cui altera inferne circa fundum respondet superiori parte marginata, quam chordotonum esse ubi fides religabantur nequaquam ambigo.*

Plate 113: Berlin, Altes Museum, Sk 844, Roman sarcophagus relief with Apollo (c. 200).

Plate 114: Paris, Louvre Museum: sarcophagus in marble showing Achilles at the court of King Lycomedes, detail of musicians with cithara (l.) and pandura (r.); Museum Inv. No. Ma 2120(Athens, c. 240)[67]

[67] Schlesinger 1910, 322 - 323; Panum (1915) 1971, 213; Behn 1918, 97; photo: http://ancientrome.ru/art/artwork/sculp/gr/headstone/hea037.jpg (accessed 10.10.2017).

Pl. 115 shows a late representation, c. 1000, of a Classical lyre-cithara with kollopes:

Plate 115: Bern, Burgerbibliothek, Cod. 88, fol. 4v: Germanicus, *Aratea* (diagram of the constellation *Lyra,* c. 1000)[68]

[68] Photo: http://www.e-codices.unifr.ch/en/list/one/bbb/0088 (accessed 15.08.2017).

What, finally, do these kollopes found on cithara images in Roman art have to do with the cetra? They were the model for the new over-long fret blocks which are first seen in the sources discussed in **Chapter 2** (**CE 21**, **23**, **24**) which are a defining feature of the Humanist cetra. Emanuel Winternitz provided significant input when he published his article "Musical Archaeology of the Renaissance in Raphael's *Parnassus*" in the early 1950's.[69] In it, he demonstrated that Raphael had used a Roman sarcophagus from the late 3rd c. as a model for the musical instruments that he depicted in his *Parnassus* frescoes (1511) in the Stanza della Segnatura at the Vatican, in particular for the kithara of Erato in Raphael's work.[70] The instrument of Raphael is not a contemporary cetra of the early 16th c., but a fantasized version of an ancient Roman kithara. It has no trace of any kollopes, but is relevant to our discussion insomuch as it presents the case of an illustrious artist who, when painting musical instruments, was heavily influenced by Classical models. Along a similar line of argument, I propose that Gentile da Fabriano, Luca della Robbia and their contemporaries did precisely the same thing, and that this can be shown through his rendering of large wooden block frets on the neck of the cetra. A detail showing the kithara in Raphael's painting is shown in **Pl. 116**, with the model sculpture of the Mattei sarcophagus shown in its present state, next to a drawing of the presumable state when Raphael saw it (**Pl. 117**):

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[69] First published in *Rendiconti della Pontificia Accademia Romana di Archeologia* XXVII, reprinted in Winternitz 1979, 185-201.

[70] The same sarcophagus (now called "Mattei sarcophagus") and cithara had been discussed in Doni's *Lyra barberina* (Vol. 1, tav. V); for a recent look at it, amplifying the commentary of Winternitz, see Rostirolla 2010, 189-194. Deciding which Muse is which, in Renaissance art and in this particular work of Raphael, can be problematic, as Winternitz pointed out (Winternitz 1979, 186, footnote 1). He feels that the figure in question is Erato, whereas Rostirolla sees the same figure as Euterpe (Rostirolla 2010, 191).

Plate 116: Vatican, Stanze di Raffaello: Parnassus, Raphael, c. 1511, detail of kithara of Muse Terpsichore.[71]

[71] Photo: https://upload.wikimedia.org/wikipedia/commons/c/cd/Raffael_077.jpg (accessed 27.09.2017).

Plate 117: Rome, Palazzo Mattei, so-called Mattei sarcophagus: detail of kithara in its present damaged state (l.), on the right is a 15th c. sketch by Francesco di Giorgio (now in Florence, Uffizi, Gabinetto dei Disegni, 326 A.R.) which clearly shows the kollopes.[72]

[72] Photo source: Winternitz 1979, Pl. 88.

As Winternitz explained, the reason why Raphael's kithara based on the Mattei sarcophagus kithara lacks kollopes is that the artist apparently did not understand their function on the instrument.[73] That artists working around 1500 such as Raphael and Filippino Lippi made iconographical quotations/citations from Roman models is well-known; that they did this also when rendering musical instruments in their works, has been convincingly demonstrated by Winternitz and others.[74] If we take a painting of a musical instrument by the artist Francesco d'Arezzo, or perhaps an anonymous painter

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[73] Winternitz stated that the state of the kithara shown in the sketchs "was evidently the condition at Raphael's time (ed.: the kollopes were intact)...we have here simply a lack of technical-functional understanding, and Raphael's way out of the dilemma was to omit what he did not understand" (Winternitz 1979, 196), and it is one reason why it has been argued that the Parnassus kithara is not based solely on the Mattei sarcophagus but is rather an amalgamation of multiple sources (see Rostirolla 2010, 194). Although the Mattei kithara and the head of its Muse were severely damaged after the 17th c., we know that it originally had kollopes thanks to an engraving in *Lyra barberina,* and to a text published by Giovanni Gaetano Bottari in 1737 (*Sculture e pitture sagre estratte dai cimiterj di Roma pubblicate gia dagli autori della Roma sotterranea ed ora nuovamente date in luce colle spiegazioni*) describing it on p. 60-61: "..the strings are attached above to those wooden sticks (joined as on a zampogna; in this case it is perhaps the device that allowed the regulation of the intonation) which cross the yoke, leaving almost half of them behind the same yoke to be able to secure the strings, pushing them down with the force of leverage....these sticks do not pass through the yoke, but only pivot on it." See Rostirolla 2010, 193, for the original text of Bottari.

[74] What has not been adequately emphasized is the parallel situation between composition in music and in the visual arts in epochs before Raphael, that is, the practice of quotation and referral. In music history literature this is commonly called "intertextuality", a concept upon which, in fact, all forms of Western art are based. It can be applied to any period of music history, but it seems to us to have been an especially vibrant tradition in the art music culture of the late 14th century. This is due, in part, to the dominating legacy of the poet-musician Guillaume de Machaut who, already by his death in 1377, had become a pre-eminent figure for artistic emulation. It has become increasingly possible, say in the last 50 years, for music historians to find an extensive network of shared melodies and texts, forming a pool of material that formed ongoing dialectical exchanges between poets, musicians, artists and others.
If we take a musical work such as *Sus une fontayne en remirant*, a 3v *virelai* of Johannes Ciconia from c. 1400, we have a composition formed as a new entity from three different text-music quotations from three *ballades* of Philipoctus da Caserta; out of these citations, or references, if one prefers, a new poetic text has been made, as well as a new polyphonic composition. While this particular work has, and rightly so, taken a position of high respect in modern medieval music history, it becomes more and more apparent that this is the tip of the iceberg; this was, as a process of citation, normal. For further information on *Sus une fontayne en remirant,* see Apel 1970, xxxiv.

working with him c. 1420-30, decorating the Basilica di Santa Caterina di Alessandria in Galatina (**CE 23**), we have an analogous situation of artistic procedure. The presence of an angel playing a cetra is a citation of the cetra-playing angel who visited St. Francis in his vision at Rieti (see **Chapter 2**, 183-186), and without knowing anything further about the context of the work, the viewer understands a Franciscan context, as indeed this church is. The "quotations" or citations from Roman art used on this instrument are in reference to the Roman kithara. They are (1) prominent kollopes, (2) horns connected to the resonator which run on a parallel plane to the strings, following a gentle S-curve and flaring outwards at the end, (3) a broad, cornered flat base to which the strings are attached, (4) angel plays using a plectrum, and (5) concentric circles on the soundboard suggestive of circular ornaments on the cylinder kithara and other forms (see **Pl. 41**). Other kithara references, such as a keeled-back resonator, are possible but not provable here.

The cetra painted in the Polyptych of the Coronation of the Virgin by Gentile da Fabriano (**CE 21**, 1408) shares some of these "quotations", but prominent kollopes are not found in any source before it. Sadly, the peg-head in both **CE 21** and **23** is not shown; as mentioned above regarding peg-heads, the presence of a carved head on the cetra seems to be an early Humanist innovation, as on **CE 20** or **CE 17**, and any models used for **CE 21** and **CE 23** may well have featured a carved head.[75]

One music theorist wrote about the cetra and its frets, Johannes Tinctoris. He used the Latin term *elevationes ligneas quas populariter tastas appellant* to denote the kollopes blocks, a term that has been translated as "wooden elevations on the neck…known as frets" and "wooden raised parts that are popularly called 'frets' " in English.[76] When the popular on-line Google translator renders *elevationes* as "extenuations", which might suggest a dimension orientation of width on the fingerboard rather than height (extended frets on the bass side are the obvious visual characteristic of the kollopes-style frets), one may

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[75] The presence of a lute-style bent back peg-head on CE 23 is something I regard as an anomaly; see Comments of CE 23.

[76] The first is Baines 1950, 23, and the second <http://earlymusictheory.org/Tinctoris/texts/deinventioneetusumusice/#paneo=Translation> (accessed 12.01.2018).

wonder whether "elevations" or "raised parts" are the most accurate interpretations in this context.[77]

Meanwhile, to translate *tastas* simply as "frets" is to risk forgetting the concept that the sense is equally "keys" as in keyboard (for ex., *Tastatur* in German), i.e., rectangular shaped pieces of wood of a certain width/length proportion. This meaning of the word "key" is thus directly linked to the Latin translation of the treatise of Pollux on the parts of the kithara; to the group of terms from the (Renaissance) Latin version of Pollux given at the end of the section **Neck Profile/Hook/ Strap** of this chapter, we will now add *clavi chordarum*, literally "keys of the strings" in the sense of pitch changers. These are the kollopes of the kithara, and the keys on *all* keyboard instruments (*clavichordum* etc.) owe their origin to them, whether their modern practitioners are aware of the background, or not.

In summary, there are four types of fret forms seen on cetra images:

Type 1 - Wooden slats, rectangular form of moderate width, with presumed flat-planed tops of uniform height, spaces in between; 12th c. or earlier - 14th c. (**CE 5, 8, 15l**).

Type 2 - Wooden triangular segments, inverted V-edge tops of uniform height, spaces in between; c. 1300 (**CE 15**).

Type 3 - Wooden blocks, broad rectangular form, elongated (= kollopes), with flat-planed tops of uniform height, spaces in between; c. 1400 - c. 1520's (**CE 21 - 39** et al.).

Type 4 - Wooden blocks without spaces in between (or single wooden fingerboard), saw-toothed tops with higher edge on bridge side of block (edge sometimes reinforced with inlaid wire), with inclined-planed, scalloped tops or fret segments; c. 1500 - continues through 16th c. (**CE 40, 49**?).

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77 <https://www.google.ch/search?q=google+translate&oq=google+ta&aqs=chrome.4.69i57j0j69i60l2j0l2.5975j0j4&sourceid=chrome&ie=UTF-8> (accessed 12.01.2018).

4.3.9 Frets: Diatonic vs. Chromatic The configuration of the frets refers to whether they are chromatically or diatonically arranged on the fingerboard of the cetra. The offspring of the cetra is the 16th-c. cittern (see **Chapter 1**, **Pl. 2**), and about half of the surviving citterns of the 16th c. had diatonic frets, the other half being chromatic. The pros and cons of diatonic fretting have been discussed by Louis Grijp, who correctly pointed out that on a long-necked instrument such as the cittern, diatonic fretting can facilitate orientation.[78] This was also helpful to the majority of players, who were amateurs; it allowed them, to some extent, to be less fussy about their finger placement. One important difference between the 16th-c. cittern and the cetra is that the cittern frets were metal rods hammered into the fingerboard, which could also be broken up into segments. Cetre, on the other hand, only used wooden blocks whose edges generally spanned the full width of the fingerboard, and they had considerably shorter, wider necks. They were, in effect, substantially different instruments from their 16th-c. cousins, and a feature found on the later cittern may or may not be assumed to have been on an earlier one.

Before discussing diatonic vs. chromatic, one must first consider temperament, which, from more or less all documents of music theory concerning our period of study, is so-called Pythagorean tuning.[79] This system looks back to Boethius and was transmitted throughout the Middle Ages and into the Renaissance. It was closely tied to the monochord, which was used to demonstrate the intervals: 2:1 (octave), 3:2 (fifth), 4:3 (fourth) and 9:8 (whole tone). From these four, all the other intervals of the medieval scale (*musica recta*) could be generated. Two whole tones produced a major third (81:64). To generate a semitone, a major third was subtracted from a fourth, leaving 256:243. This semitone 256:243 could then be subtracted from a whole tone 9:8, leaving a larger semitone 2187:2048. There were thus two different-sized semitones in Pythagorean tuning, which is, simply formulated, the most important difference between that system and modern equal temperament with all semitones equal.

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[78] Grijp 1981, 86-89.

[79] A useful summary of Pythagorean tuning, giving interval size also in cents, is Herlinger 1987, 5-9.

Pythagorean tuning was ideal for Gregorian chant, that is, monophonic music, where the melody leads to a goal or cadence; each of the Church Modes was thus defined by its *finalis* or ending note. Within the unfolding of the melody, the smaller semitone often "leaned" toward the final note, creating a tension of expectation regarding where the melody would finally end. By the early 14th c., with polyphony well-established in sacred and secular music, the Pythagorean tuning system was evolving to accomodate the rules of counterpoint, with the rise of chromatic pitches outside of the notes needed for Gregorian chant. Changes were afoot in theory writings, including an increased awareness of the compromise between tuning on the monochord and tuning in actual vocal practice.[80] The scale system described in music theory during most of the cetra's period under discussion here was, then, Pythagorean. Many words have been spent in modern research discussing whether the cetra had chromatic or diatonic frets, as both types were made during the 16th century. The term "chromatic frets" refers to a fret-layout on the fingerboard of consistent semitones, beginning at the nut and progressing up the neck, moving toward the bridge. "Diatonic frets" refers to a fret-layout which does not feature consecutive semitones, but rather mixes whole tones with semitones in various possible ways. There is no theoretical source discussing this aspect of the instrument, so our conclusions must come from music theory, contextual music repertory and iconographical sources.

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[80] Musical sound is subjective and relative, not absolute, because human hearing is subjective and relative. In the early 14th century, the singer Marchetto da Padova stepped outside of Pythagorean mathematics when he acknowledged that pitches measured on the monochord and those that are intentionally sung may not necessarily be the same. Theory and practice diverge, number and sound harmonize in compromise, so to say. Singers strived to follow the monochord as best they could - there was no other authority or reference to follow - yet the reality was the spirit of compromise. They sang counterpoint, and correct counterpoint progression requires the application of *musica ficta* (i.e., chromatic pitches outside the system of Gregorian chant), a system subjected from the outset to a variety of interpretations, including that of Marchetto. When we remember that there was no such thing as absolute pitch, or pitch standard, and that modes (or 'keys') were movable and subject to transposition, we cannot be too surprised that a music theory source like the Berkeley treatise (Paris, 1375) recognizes the reality of compromise in Pythagorean tuning, where *musica ficta* pitches are described in terms of equal temperament (sic).

Music theory considerations will now be outlined. Our study period extends over some four centuries for the cetra. For the question chromatic vs. diatonic frets, music theory knew only diatonic music for the first half of this time span. A musical scale which included chromatic pitches grew out of the practice of polyphony in Western art music during the 14th c., because counterpoint consists of progressions of intervals, and interval progressions require rules. So-called imperfect intervals preceded perfect ones, so, for example, when a sixth was followed by an octave, it had to be a major sixth, not a minor one. If, for example, a tenor melody descended from "e" to "d", then the upper melody against this had to move not from c' to d', but from c#' to d', making a semitone movement in the upper voice. In the original scale system (*musica recta*) of medieval music, the only semitones in the scale were between "e" and "f" and "h" (b natural) and "c". By the end of the 13th c., chromatic notes such as "c#" were just beginning to be recognized in music theory, but it was not until many decades after this that a fully chromatic scale becomes recognized by some theorists.[81] But this shift toward a chromatic scale (so-called *musica ficta*) is very far removed from our cetra, at least before the 14th century. Diatonic frets are appropriate, in any case, for a pre-14th-c. cetra; in terms of everything we know about music theory, there would be nothing practical to do with a chromatic fingerboard. This will change, however, with the advent of the 14th century.

Contextual music repertory shall now be considered. Medieval music might be divided into two types, literate and non-literate, with some overlap. "Literate" means art music, both sacred and secular, of church and court, following practices and rules that were codified in written sources. This included, but was not limited to, polyphonic music of different forms. Musical instruments played a relatively small role in art music, judging from written sources, until groups of like-colored instruments became fashionable courtly and civic entertainment by the mid-14th c., such as the shawm band (the sole exception to this was the organ, which had a role in church and ceremonial music since before the inception of our period).

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[81] For an early discussion in a treatise about musica ficta, see Ellsworth 1984, 53-67; for a general study on the topic in medieval music, see Brothers 1997.

During the 15th c., instruments came into their own, performing vocal-style polyphony in various groups and, like a choir, doing so typically with like-colored instruments in different sizes. Johannes Tinctoris, one of the few 15th-c. theorists to write a treatise on instruments, and the only one to mention the cetra, made it very clear that instruments were of value primarily for their use in playing vocal-style polyphony; the ones which were not (or could not be) used in this way were "imperfect".[82]

The cetra was most assuredly, for Tinctoris, an imperfect instrument. He described it as being used by "rustics" (illiterate musicians with no understanding of music theory and counterpoint) "to accompany light songs and to lead dance music" (ed: Baines); another translation (earlymusictheory.org) has "peasants" instead of "rustics".[83] This is but one of many puzzling statements, concerning different instruments, in Tinctoris' treatise. For, specific to the cetra, we know from literary descriptions that the instrument was used in performances at the highest courts in Humanist Italy (like the *lira da braccio*, the instrument of Leonardo da Vinci).[84] Furthermore, it seems impossible that Tinctoris would not, during his 20-year career at Naples, including visits to other courts, have heard such a performance. His disdain tells us that the cetra was not used for sophisticated polyphony.

If it is true that the cetra was not commonly used for instrumental music in Franco-Flemish style - in contrast to the lute - , it was sometimes also played at court by masters of polyphonic music.[85] We learn this reading Antonio Cornazano's *Sforziade* Canto VIII ("Laudes Petri Boni Cythariste"), lines 25-27, written in 1459. Cornazano describes a banquet performance of the famous Ferrarese musician Pietrobono following the wedding of Francesco Sforza and Bianca Maria Visconti (Pirrotta has argued convincingly that the

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[82] For the first translation in English of Tinctoris' Latin treatise c. 1480, *De inventione et usu musice*, see Baines 1950.

[83] Baines 1950, 25; < http://earlymusictheory.org/Tinctoris/texts/deinventioneetusumusice/#paneo=Translation> (accessed 12.01.2018).

[84] For a study on Leonardo and the lira da braccio, see Winternitz 1982.

[85] For a first-hand account of lute playing heard at Italian courts c. 1470-80, see that of Tinctoris translated in Baines 1950.

performance described took place in Milano in 1456, when documents confirm that Pietrobono was visiting the Sforza court):[86]

> "Cantava in cetra ad ordinata frotta
> l'amor d'alcun moderni chi s'appretia:
> come el Signor d'Arimini hebbe Ysotta."[87]
>
> ("He sang with the cetra to an attentive audience
> contemporary love stories of how Sigismondo Malatesta
> conquered Isotta degli Atti.")[88]

This brings up the subject of repertory and social context, which are also relevant to the question of fret disposition and musical function. The two kinds of music of rustics or peasants were explicitly stated by Tinctoris, dance and song. Dance would mean presumably non-courtly dance, which would exclude the polyphonic *bassadanza* and courtly *ballo*. It would suggest simple social dances such as the round dance or *carole*.[89] We can also presume some overlap between courtly arrangements and performances and street fair or barnyard dance music, with popular dance tunes known by all levels of society.

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[86] Pirrotta 1966, 140.

[87] Pirrotta 1966, 144.

[88] This passage is not unknown in modern music history literature, yet it continues to be understood as referring not to an actual cetra, but to a lute or some other symbolic, poetic instrument. Pirrotta wrote, "Pietro Bono whom we better know as a lutenist, is described by Cornazano as a singer accompanying himself on an unidentified string instrument classically named a 'cetra'...although the reason for this choice is quite evident, for there was no place in Cornazano's revival of the Homeric climate for anything less than a classical rhapsodist, we must admit that also in real life Pietro Bono was a 'cantore a liuto' as well as a lutenist" (Pirrotta 1966, 140-41). Lewis Lockwood comments on the same passage, "Cornazano speaks of a 'cetra' but may not mean so literally" (Lockwood 1984, 100). Why not, actually? We know that Pietrobono played the lute and the gittern...yet we cannot imagine that he played a third type of plucked instrument as well, a documented instrument tailor-made to accompany the genre of song he was singing?

[89] Sources containing Italian dance music before the 15th c. are rare. The most famous collection of works are found in the manuscript London, British Library, MS Additional 29987

Melodies played or sung would probably have been modal, that is, with little chromaticism or use of *musica ficta*. The same would apply to rustic songs, which would be accompanied, at the simplest level of musical skill, by playing the tune, in unison or at the octave with the voice. Beyond these basics, some idea of stylistic possibilities may be gained by studying the 2v songs in the so-called Rossi Codex, a secular song collection from the Veneto which is thought to be a collection representing local styles perhaps from the mid-14th century.[90]

This is not to say that all rustic musicians or street performers were elementary-level amateurs, but a song accompaniment would not have been about Franco-Flemish counterpoint style of Dufay or Ockeghem. In the 15th and 16th c., as with the *lira da braccio*, chords would have been used to support the voice, typically by a *cantarino* or professional singer of formulaic, rhymed verse in a *piazza*, or courtly *improvisatore*, with "correct voice leading" being of low priority (again, like the *lira da braccio*).[91] Just a smattering of written music exists for the *lira*, demonstrating that it, too, played dances and song accompaniment with bad voice leading and chord inversions, sometimes, that might have been frowned upon by a master such as Alexander Agricola.[92] The specific poetic song forms included *sonnetti*, *strambotti* and *capitoli*.[93]

Overall, the primary type of song which called for accompaniment from the cetra during its entire history, naturally, would have been the *lauda*. Monophonic, modal, humble, with devotional text, it was the quintessential Franciscan musical form, practiced at the most humble levels of society everywhere in Italy. It also overlapped with any and all secular melodies, to which new words were applied.[94]

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[90] See Pirrotta 1960 for an edition and discussion of the Rossi Codex.

[91] Glimpses of this repertory, in terms of surviving pieces, are elusive but not impossible to find. One source for a handful of pieces is the manuscript Montecassino, see Pope and Kanazawa 1978.

[92] The extant *lira* pieces have been transcribed and discussed in Jones 1995.

[93] For more on these forms see Cavicchi 2014.

[94] For a definitive study on this tradition, see Wilson 2009.

Iconographical sources, the final consideration topic to decide whether to use diatonic or chromatic frets, are often read in different ways by different readers, leading to conflicting interpretations. Careful study with the visual sources confirms that, while later sources (say, from the last 100 years of our study period) strive for a higher degree of realism and precision then earlier ones, it is exceedingly rare that an image of a fingerboard with frets can be relied upon for a literal and precise rendering of fret placement, which can simply be measured and transferred into practice on an instrument on stage. In short, accurate fret placement was not a high priority for most artists, even those with the highest Renaissance aspirations of correct rendering. Whether we expect realism or not, the sources we are concerned with are not photographs.

Of the Catalog entries in **Chapter 3** showing frets, none show anything but regularly-spaced frets, with the exception of **CE 23** and **36**, which feature a larger distance between the first two frets than between all the rest (see Comments for **CE 36**). There is not one image which depicts the irregular spacing that a diatonic fret layout would feature, with the exception of the partially-diatonic fretting shown in **CE 49**.[95] If depicted accurately, what would a diatonic fretboard look like? When we speak of diatonic fretting, which interval series should we consider?

We now go back to early medieval music theory and back to tetrachords. **Pl. 86** in **Chapter 2** shows a tetrachord chart. The first tetrachord in *Musica enchiriadis* of the 9th c. is the one shown on the left, D - E - F - G, or in interval terms, tonus - semitonus - tonus.[96] Three frets would be needed to play these intervals, the first would be up a whole-tone from the open string, the second a semitone higher, and the third a whole-tone above that. But the early monuments show four or five frets: the only two early sculptures, **CE 5** and **CE 8**, have

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[95] In the words of musicologist Louis Grijp, "In spite of the exactness of the depictions, especially that of the intarsie, we cannot discern any difference between major and minor seconds, an important argument against fully diatonic fretting" (Grijp 1981, 91).

[96] This is the first tetrachord given in the treatise because these intervals - in this order - provide the finals for the Church Modes, Dorian, Phrygian, Lydian and Mixolydian.

four and five frets, respectively. We can easily add a fourth fret to give a whole-tone above the third fret, and we could also add a fifth fret above that. In fact, having five diatonic frets would allow the hexachord pattern, ut-re-mi-fa-sol-la, to be played moving up the frets on each string respectively; each string would thus be a kind of monochord unto itself, conforming with the solmization system associated with Guido d'Arezzo c. 1000 (**Chart 1**):

Chart 1 (Solmization syllables and corresponding fret numbers in diatonic fretting):

Solmization syllable						Fret number
Ut	.	.	.	.		(open string)
Re	.	.	.	.	.	1
Mi	.	.	.	.	.	2
Fa	.	.	.	.	.	3
Sol	.	.	.	.	.	4
La	.	.	.	.	.	5

There are other tetrachords that might be imagined for our diatonic fret system: semitonus - tonus - tonus, or tonus - tonus - semitonus. Tonus - tonus - tonus is not a tetrachord at all, and for a four- or five-fret layout, it goes into chromatic pitch territory, and thus seems a highly unlikely candidate for a 12th-c. cetra. It will soon be necessary to test these layouts in practice. Before doing so, we will need to decide on what the tuning should be.

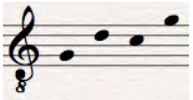
Because **CE 8** has no strings (it does have twelve pegs but their string-grouping configuration will be considered later), we will use **CE 5**, the cetra with four strings. The starting point for the four-string cetra tuning must be the treatise of Boethius. The tuning is described:

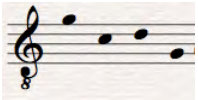
> "In the beginning Nicomachus reports music was truly simple, since it was composed of four strings. It continued in this state until the time of Orpheus. In this period the disposition of strings was such that the first and fourth strings

> sounded the consonance of the diapason, while the middle strings each in turn sounded the diapente and diatesseron with the strings nearest them and those most distant."[97]

This means that however one visualizes this tuning (= whether one starts on the bass or treble side of the fingerboard, in modern violin terms), it has a so-called re-entrant pitch series: if we take G as the pitch of the first string, the result would be either

G d c g or g c d G.[98]





Note that Boethius specifies no pitch, only the relative intervals. We have chosen to put the lowest string at G because this could be a realistic lowest string on a cetra, given the general string length. "Re-entrant" indicates that string pitches do not consistently ascend (or descend) as one crosses the four strings moving from one side to the other.

That the language used for the tuning description by Boethius is potentially confusing, might be confirmed by a late 14th-c. Parisian treatise, which endeavors to present the material from Boethius with a modern update using contemporary string instrument images.[99] The Berkeley Treatise begins by presenting the four-stringed Boethian tuning as the "Tetrachord of Mercury", rather than the "Quadrichord of Mercury" specified by the

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97 The specific word order in Boethius comes from the lowest primary number proportions 2:1, 3:2, 4:3. For the passage in translation with commentary, see Bower 1989, 30.

98 To explain my use of letters to indicate specific pitches: I follow the medieval system of writing pitch names. Capital letters are used to indicate all notes on the bass-clef (f clef) staff except the low G (bottom line) which is indicated by the Greek letter Γ, and the highest line (a) which is a small-case letter. The range of notes covered by examples given for cithara / cetra tunings in the text is limited to the octave starting at G (a fourth below middle C): G a b h c d e f g.

99 The treatise is the so-called Berkeley treatise, after the library at the University of California Berkeley where it is held. For the original Latin and an English translation, see Ellsworth 1984.

ancient author (a tetrachord by music-theoretical definition would have to have four strings within a fourth, whereas the literal Boethian tuning spans an octave: G d c g). It seems at first sight that the Berkeley author has confused what Boethius actually wrote, but there may be some method to the madness. "Tetrachord", after all, does mean "four strings", so perhaps Berkeley has consciously changed both name and tuning order of the strings; but there is also a certain similarity with material found in an earlier Parisian treatise of Jerome of Moravia, whose third vielle tuning (GG d c'c') might possibly be related to Berkeley's Tetrachord of Mercury tuning.[100]

The Tetrachord tuning in Berkeley was illustrated with a drawing of four parallel horizontal lines, using alphabetical letters to mark points of division on the lines ("strings") to show proportional lengths; 2:1, 3:2, 4:3 and 9:8 are the only intervals contained within the fours strings, so to speak (**Pl. 118**).

[100] Page 1979.

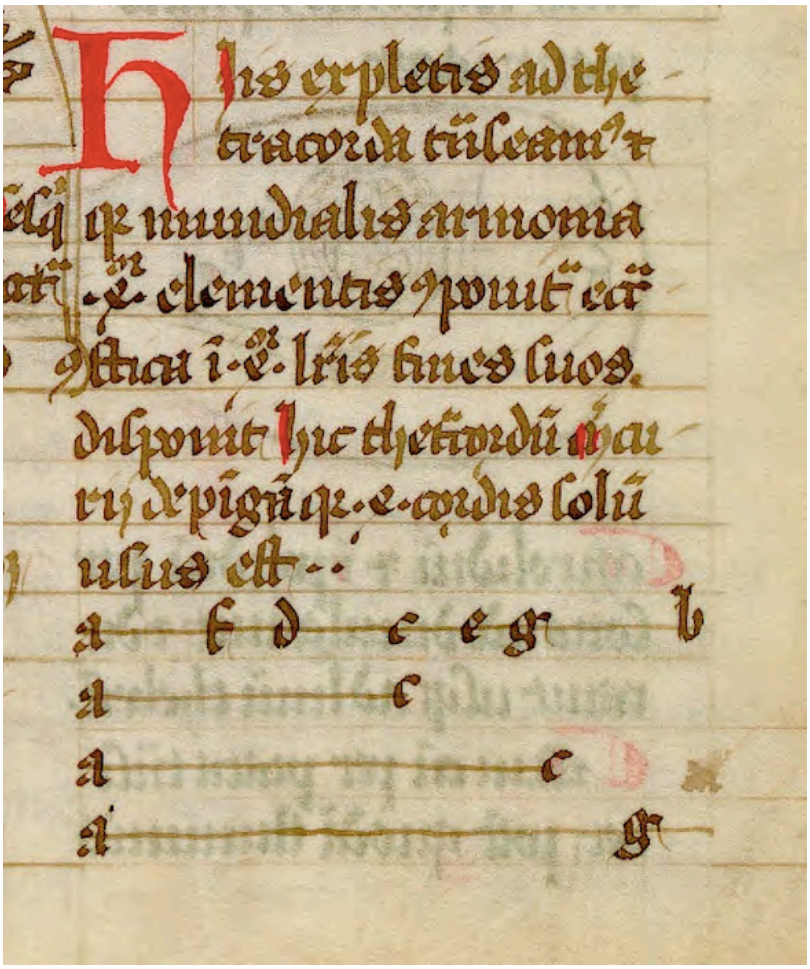


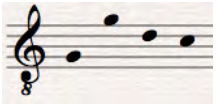
Plate 118: Berkeley Manuscript, p. 51: detail showing "Tetrachord of Mercury" illustration; the uppermost line or "string" marks division points with alphabetical letters to produce the intervals of octave 2:1 (second line down), fifth 3:2 (third line down) and fourth 4:3 (third line down).[101]

Next, Berkeley shows a different four-string tuning on a necked chordophone (**Pl. 119**). We have transposed it to put the lowest string at G to better facilitate comparison to the tunings shown above; it is G A d g. Here the same four intervals are present, but with a changed configuration. Like Boethius, this tuning has the octave between the outer strings. But here, the 9:8 *tonus* is in a different position, from "G" to "A" one tone higher. The next

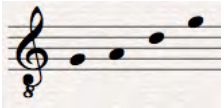
[101] I wish to express my gratitude to the Music Library at the University of California at Berkeley, where in April 2015 I was allowed to examine the Berkeley Manuscript.

string after "A" is a fourth higher, and the last string is a fourth higher again. In short, this is a variation upon the Boethius tuning, as was Berkeley's first Tetrachord tuning; related to Boethius, with the same intervals, but not exactly the same interval-order of the strings.

Berkeley, Boethius tuning
"Tetrachord of Mercury."



Berkeley, altered Boethius tuning
"Cithara of Albinus" (see **Pl. 119**).



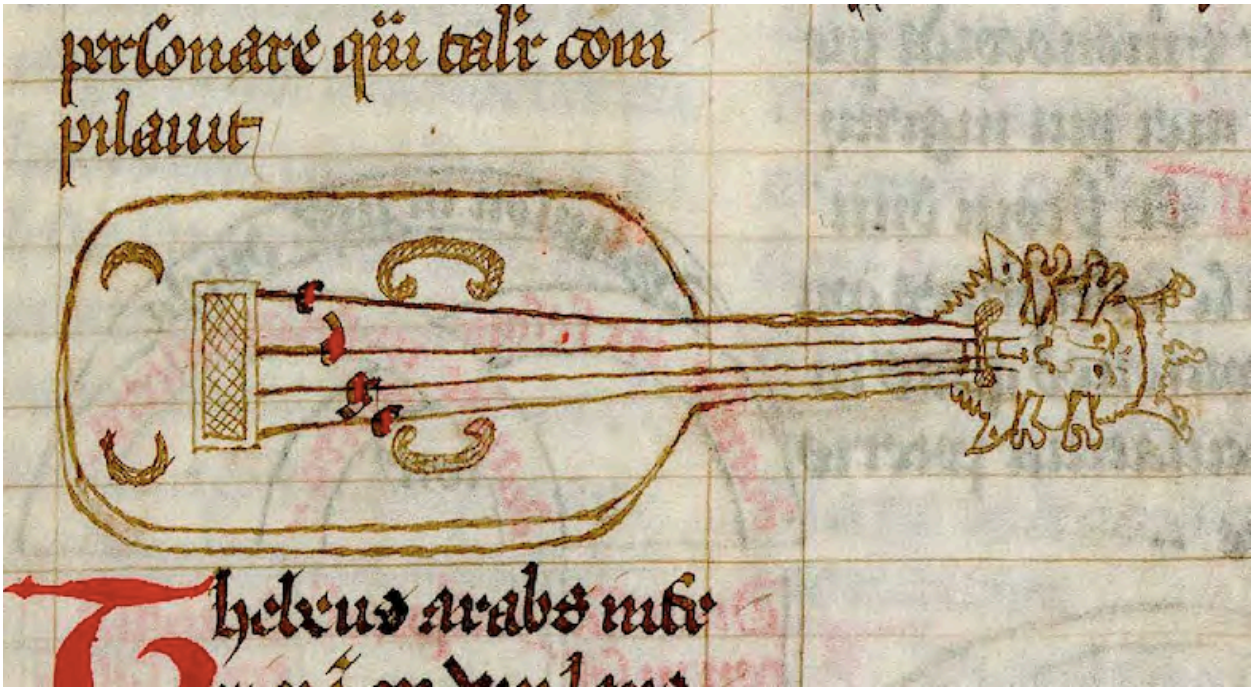
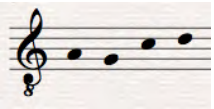


Plate 119: Berkeley Manuscript, p. 52: detail showing four-stringed chordophone to illustrate the evolving "Tetrachord of Mercury" tuning. The letters read from low to high strings, c d g c, and the description makes it clear that the last string is an octave higher than the first.

Berkeley was dated by its scribe to January 1375.[102] About 100 years later, we find the only explicit tuning information for the four-string cetra in the treatise of Tinctoris. I wish to argue that the usual understanding of Tinctoris' Latin has been misread in modern literature. His Latin passage reads, "Ab ipsa etiam lyra instrumentum aliud processit, ab Italis, qui hoc compererunt, cetula nominatum, super quam quattuor enee vel calibee chorde, ad tonum et tonum, diatesseron, ac rursus tonum, communiter disposite tenduntur" (Baines: "Yet another derivative of the lira is the instrument called cetula by the Italians, who invented it. It has four brass or steel strings usually tune: a tone, a tone, a fourth, and back again a tone"; earlymusictheory.org (edited): "From the *lyra* likewise proceeded another instrument, named by the Italians, who devised it, a cittern, upon which four brass or steel strings, commonly disposed by a tone, a fourth, and back a tone, are stretched"). Both translations assume that Tinctoris begins with the highest string and that the following intervals he gives are descending.[103] The second translation reads "et tonum" as a mistake, as it seemingly describes a five-string instrument in Baines' literal translation, in contradiction to the previous statement of Tinctoris that it has four strings. "Ac rursus tonum" is understood in both translations as going back in the opposite direction, i.e., no longer ascending but now descending. The resultant tuning for both translations, with G as the lowest string for comparative purposes, is A G c d:



It may be possible, however, to understand "ac rursus tonum" as "going back to the original interval," but one octave higher. There is a second problematic tuning passage in the treatise, describing the Turkish tambura, which could shed light on the sense of this one: "tres chordas habet ad diapason diapentem ac diatesseron" (both translators give "it has three strings tuned to octave, fifth and fourth" as the translation). This would be a four-string tuning, rather than the correct number of three strings. Tinctoris means, rather, that

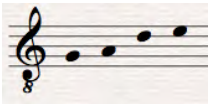
[102] Ellsworth 1984, 182-183.

[103] Like Boethius, Tinctoris names no specific pitch, instead giving intervals between open strings.

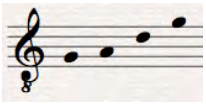
there is an octave between strings 1 and 3, a fifth between 1 and 2, and a fourth between 2 and 3. Literal modern translation, in this case, brings questionable results.
The four-string instrument drawn in Berkeley uses precisely the tuning described by Tinctoris in his cetra passage, if we allow the meaning suggested above. The traditional interpretation of the Tinctoris cetra tuning - shown above - is musically problematic in a period where the instrument surely played chords of some kind when accompanying improvised singing of *ottave rime* and other forms. Its musical function would have shared aspects with its sister instrument, the *lira da braccio*, which was primarily chordal. If there is one thing to be learned from Berkeley regarding tunings, it is that they (practical instrument tunings) were inspired and adapted from Boethius. This was already the case for the vielle tunings of Moravia c. 1300, and it is without doubt the case for the cetra of Tinctoris, for we have seen how the Humanists reinvented their instrument, adapting features from the kithara of Antiquity in fresh ways for a necked chordophone. The cetra tuning given by Lanfranco in 1533 (see Appendix II) is also music-theory related (hexachord), as well as referencing Boethius.

We have now suggested a different reading of "ac rursus tonum" than the commonly-cited Baines/earlymusictheory.org translation, keeping Boethius in the background. A similar interpretation of Tinctoris' cetra tuning was proposed by musicologist Louis Grijp independently in 1981, taking a different meaning for "ac rursus tonum":

(Grijp)



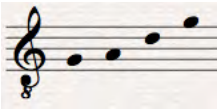
(Young)



Let us see in **Chart 2** what these tunings, as well as a few other related ones, do if applied to a diatonic cetra, by illustrating which notes would be available according to various diatonic fretboard configurations:

Chart 2: Eight "test configurations" with different tunings and diatonic fret patterns ("open" = open string, "M2" = major second, "m3" = minor 3rd).

Test 1 - Adapted Boethius tuning #1



open	M2	m3	4th	5th
g	a	b	c'	d'
d	e	f	g	a
A	H	c	d	e
G	A	B	c	d

Result: provides full *musica recta* note system.[104]

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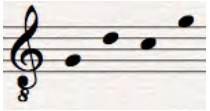
Test 2 - Literal Boethius tuning



open	M2	m3	4th	5th
g	a	b	c'	d'
c	d	eb	f	g
d	e	f	g	a
G	a	b	c	d

Result: less good than previous one because (1) no H at all and (2) more repetition and awkward (illogical) positions of notes.

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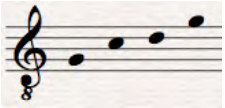
Test 3 - Adapted Boethius tuning #2



open	M2	m3	4th	5th
g	a	bb	c'	d'
d	e	f	g	a
c	d	eb	f	g
G	A	Bb	c	d

Result: no H = not possible to play in G durum hexachord.

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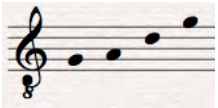
[104] *Musica recta* refers to the traditional medieval scale without chromatic notes, i.e., the white notes on a piano keyboard, so to speak.

Test 4 - Adapted Boethius tuning #1



open	m2	m3	4th	5th
g	g#	b	c’	d’
d	d#	f	g	a
A	Bb	c	d	e
G	G#	Bb	c	d

Result: not convincing....provides un-needed pitches.

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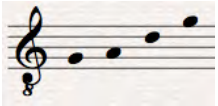
Test 5 - Adapted Boethius tuning #1



open	M2	M3	4th	5th
g	a	h	c’	d’
d	e	f#	g	a
A	H	c#	d	e
G	A	H	c	d

Result: has no B or b, often needed!

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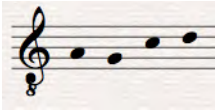
Test 6 - Literal Tinctoris tuning



open	M2	m3	4th	5th
d	e	f	g	a
c	d	eb	f	g
G	A	B	c	d
A	H	c	d	e

Result: impractically limited compass with pointless fret positions for melodic play.[1]

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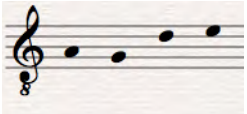
Test 7 - Adapted Tinctoris tuning #1



open	M2	m3	4th	5th
e	f#	g	a	h
d	e	f	g	a
G	A	B	c	d
A	H	c	d	e

[1] In his much later *Misurgia universalis* (Roma, 1650), Athanasius Kircher gives this tuning for the four-course “ultramontane” cittern; see Crane 1956, 48, 56 for the relevant passages in English.

Result: very limited: could be chordal around G major-only with limited melodic play on top two strings. This is slightly more useable than the literal Tinctoris tuning, but not really convincing and/or practical.
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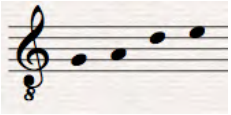
Test 8 - Adapted Tinctoris tuning #2



open	M2	m3	4th	5th
e	f#	g	a	h
d	e	f	g	a
A	H	c	d	e
G	A	B	c	d

Result: provides full musica recta note system, also the leading tone to g, f#.
****

For the four-string diatonic cetra, Tests 1 and 8 are clearly the most logical choices for fret configuration by providing a full range of notes. There are not many sources in the Catalog which are strong candidates for diatonic fretting after the 14th century. For a later diatonic instrument, **CE 32** presents quite a realistically placed fret layout, if the bridge is moved further back (it seems much too high up in the middle of the sound-board). This can be easily tested by measuring the open string length, assuming everything is visible, and then finding the positions on the string where the fourth and the fifth should be fretted. These two intervals - especially the fourth - should be reliable common intervals to any diatonic or chromatic fingerboard. They are correctly placed in **CE 38**, a clear example of chromatic frets. Following our earlier conclusions concerning fret blocks, it will be the back edge of the block (the edge facing the direction of the nut) which is the actual fretting edge, and to stop the string, the player presses the fingertip on the space behind the fret block. This is an important consideration when measuring fret positions in iconographical sources.

The Moravia tunings should also be considered as options for the early-14th-c. cetra, especially for types shown in the cycle **CE 15**. These include cetre which have a bordun string or string-pair off the fingerboard, like the vielle, and there is no question that some cetre by this time had chromatic frets (**CE 15i**). The first Moravia tuning is for a five-string

vielle with the strings grouped into two pairs and a single bordun, d Gg d'd'. Moravia's second vielle tuning, also for five strings, is grouped into one pair and three singles, d Gg d' g''. The third tuning GG d c'c' was already mentioned above in connection with the Berkeley first Tetrachord tuning.

The second vielle tuning is described by Moravia as being able to play all forms of music, which implies playing polyphony and using chromaticism, at least as a possibility.[105] I see no reason why a chromatically fretted cetra, with a similar string configuration as described in Moravia, would not have been capable of doing the same thing, especially at a time in Italy when French fashion was a noticeable cultural influence.

To summarize: for a 14th-c. cetra with chromatic frets, also with bordun strings, Moravia is a viable model, in particular the second tuning.

Ultimately, to decide whether an image shows diatonic or chromatic frets, the following points may be observed:

(Chromatic)

- There is a relatively high number of narrow frets (**CE 15i, CE 30, CE 35**), such as eight or more.
- The source is 14th c. or later.

(Diatonic)

- There is a fewer number of frets, up to seven but often less.
- The iconographical source is dated before the 14th century.
- Blocks are of relatively wide form, or have pronounced distances between frets.

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[105] In Page's translation, "Another tuning is necessary for secular songs and for all others - especially irregular ones - which frequently wish to run through the whole hand... that which is most difficult serious and excellent in this art is to know how to accord with the *borduni* in the first harmonies any note from which any melody is woven. This is certainly easily known from the suitable second hand, which is only used by advanced players"; (Page 1979, 91-93).

Now that we know something about the permutations and possibilities of cetra fret configuration, we need to understand the factors concerning the number of strings represented on a given instrument.

4.3.10 Strings: Number, Grouping The data concerning the number of strings of the cetra is consistent, at least if we confine ourselves to sources of music theory. Boethius described the cithara of Mercury as a "quadrichord" or instrument with four strings; the development of different melody types, i.e., modes, in ancient Greece, was presented by the same author using the figurative comparison of "adding strings" to the cithara. A list of musicians, each the inventor of a new mode, progressively increased the number of strings of the cithara, culminating in the addition of an eleventh string by Timotheus of Milesia.[106]

The reception of Boethius during the Carolingian period continued the implicit idea of a four-stringed cithara in the use of graphic drawings of four-line staves indicating the pitches of the tetrachord (see **Pl. 85 - 86** in **Chapter 2**). The ubiquitous authority of Boethius' treatise throughout the Middle Ages ensured that the concept of the four-string cithara was part of the study of music as part of the Quadrivium. Another impetus for the authenticity of the four-string cithara came from D'Abano (c. 1250-1315), as the earliest widely-known commentator on Greek texts, including works of Aristotle. His commentary to the Third Problem in the *Exposition problematum Aristotelis* (1310, Padova) concerning musical intervals, acoustics and related matters, specifically mentions the *cythera* as having four strings.[107] D'Abano's stature as a figure of authority was well established by the mid-14th c., and it would only continue to increase throughout the 15th c. at the Humanist courts and universities, so fixated upon ancient culture.

One such Humanist court was that of Ferrante in Napoli, where Johannes Tinctoris wrote, among other works, the treatise *De inventione et usu musice* during the 1470's. It remains the unique organological work which contains specific information about the cetra,

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[106] Bower 1989, 29-36.

[107] Page 1986, 149. See also discussion above in Chapter 2, 192-193.

confirming the number of strings to be four. Some fifty years after Tinctoris, Giovanni Maria Lanfranco (1533) described the number of strings on the cetra as six.

Not everyone understood the cetra as an instrument with four strings. A different view was propagated by Christian writers, one which was supported, in the main, by sources of visual art from the Romanesque through the 14th century. As we read in **Chapter 2**, Gioacchino da Fiore, the 12th-c. Calabrian mystic, spoke of the three strings of the cithara, with their symbolism of the Theological Virtues.[108] In fact, three-string lute forms go right back to early Byzantine culture (pandura, see **Chapter 1**) and iconography, and already by the Carolingian era, three is the standard number of strings; the obvious Christian symbolism does not need further elaboration here. A glance at the entries before c. 1400 in **Chapter 3** will show that three is the default number of strings for the proto-cetra (Romanesque) and Gothic cetra.

There are, however, notable exceptions to this statement, starting with Benedetto Antelami's sculpted cetra of four strings (despite its Psalm context). Then there is the important and extensive cycle of depictions in the Lower Basilica at Assisi, which contain sixteen cetre, of which one example (**CE 15g**) has no strings. Twelve of the remaining fourteen have bordun strings (= off the fingerboard, not "stoppable" with the left hand on the fingerboard), either as a single string or a pair. At least three cetre (**CE 15j, 15n, 15p**) show pairs of strings, that is, grouped together into three courses. These are, effectively, three-stringed cetre, in conformity with Gioacchino da Fiore's description.
Regarding the number of strings represented on any cetra image, it will be well to remember two key points. First, there are two indicators showing the number of strings on a given cetra, the number of pegs in the peghead, together with the number of strings drawn on the body and/or fingerboard. Second, there is the possibility that a larger number of strings may be grouped into various configurations of courses, where each course functions in effect as one string.

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[108] See 184-185 above.

The number of pegs and the number of strings found on a cetra, many times, do not agree, especially with limitations of medium or size. Matching the numbers exactly was sometimes a low priority for the artist, who was charged with depicting a recognizable cithara as an attribute within a specific context, focusing more on general form and playing position, for example. Pegs will often be present even when strings are not; the opposite is rarely true.

When strings are present, they may be laid out singly on the fingerboard, or grouped in pairs (or even three together as a triple course). A precedent for an early necked chordophone with strings configured as a pair, tuned in unison, is the Byzantine pandura.[109] This instrument consistently had three strings, with the two on the right side of the fingerboard (seen vertically and frontally), placed close together, and the third set at a wider distance from these two.[110] In terms of playable strings, this was a two-string instrument, with two independent sets of frets, one for each string. The fret set belonging to the string pair typically had a greater number of frets than the set under the single string, sometimes substantially more; active melodic playing may therefore have been reserved for the pair of strings, and they may have been strung as a pair so that if one broke, the player could continue playing.

The earliest treatise which implicitly confirms the disposition of courses on a necked chordophone in Western Europe is that of Jerome of Moravia (Paris, c. 1280). Like the cetre in the Lower Basilica at Assisi some thirty years later, Jerome's vielle had its five strings grouped into two courses plus a single bordun string off the fingerboard, although other strings configurations were used as well. This configuration for the vielle was already well

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[109] Eichmann 1994, 65.

[110] Eichmann 1994, 65, mentions that two examples later had a fourth peg added, but that the original number was three.

established in Italy, as a miniature from a Bolognese Bible c. 1250 - 1262 clearly shows (**Pl. 120**):[111]

Plate 120: Los Angeles, Getty Museum, Ms 107, f. 209v (David plays five-string vielle with two courses and single bordun)

A handful of early cetra examples depict instruments with twelve pegs, beginning with **CE 8**, the Ferrara Duomo. As stated previously in the comment section of this item's catalog entry, the number of strings is heavily symbolic, with the 24 Elders representing 12 Apostles and 12 chieftains of the tribes of Israel.[112] Further symbolism can be seen in 12 x 12 = 144, suggesting the 144000 blessed souls saved after the Last Judgement. There is also

[111] Getty Museum, Ms 107, f. 209v: Initial B showing Christ, with David playing vielle. <http://www.getty.edu/art/collection/objects/257766/unknown-maker-initial-e-monk-reading-initial-b-christ-with-david-playing-the-harp-italian-about-1250-1262/?dz=0.6565,0.6730,1.62> (accessed 10.10.2017)

[112] Marchi 2011, 214.

non-Biblical symbolism at work here. The prime numbers through 12 include the fundamental proportions of the Pythagorean monochord: 12:6 = 2:1 (octave), 9:6 = 3:2 (fifth), 12:9 = 4:3 (fourth) and 9:8 (whole tone).

Could this cetra have had three courses of four (unison) strings each, as perhaps suggested by the three clear "rows" of four pegs in the peghead? It is not impossible, although a four-string course would be unprecedented on any necked chordophone in the Middle Ages or Renaissance, and is supported by no known iconographical examples. Four unison strings grouped together into courses would seem to invite practical tuning problems on a fretted instrument such as this. Then there is the question of the bordun, for this same monument provides the earliest unequivocal evidence for the bordun string on a cetra, and this feature is shared with the Assisi instruments mentioned above. Bordun strings, when shown on instruments like those in **CE 15**, are either single strings or two strings in a course. A three- or four-stringed bordun course is unknown at this time.

A second instrument of the same period shares twelve as the number of depicted pegs: Giotto's fresco at the Scrovegni Chapel in Padova (**CE 14**). The fresco is somewhat deteriorated and the strings are not all clearly discernible, but the upper four strings may be grouped into two double courses (?) and the instrument might have had a bordun string or course (?). The visible part of the instrument (the lower half is blocked by another figure) is strikingly similar to the Ferrara cetra, and these two also bear some resemblance to the Cimabue cetre in the Upper Basilica at Assisi c. 1280 (**CE 10**). Though severely deteriorated, both of these examples had many strings; sadly the number of pegs is impossible to discern. **CE 10b** probably had twelve strings (eleven are visible as I count). It seems entirely plausible that the three sources **CE 8, 10** and **14** are related. See Comments section of **CE 8** for further discussion of the relationship between the three.

In sum, the Cimabue-Ferrara-Giotto cetra is a definite model type from the last quarter of the 13th c., which has twelve strings, bordun strings (one or two) and possibly two upper courses of two strings each. A first proposal for the stringing configuration would be a four course instrument plus the bordun: <u>2 (B) / 3 / 3 / 2 / 2</u>. An argument in favor of this would

be that the top two courses in **CE 14** are each double courses. A second proposal would be three courses plus a bordun: 3 (B) / 3 / 3 / 3. The tuning possibilities for both of these string configuration proposals will be discussed below. What about a six-course disposition of 2 / 2 / 2 / 2 / 2 / 2 ? Unfortunately, the deteriorated state of Giotto's fresco precludes a definite conclusion. There is, however, no confirmed description of any kind of plucked necked chordophone in Italy with six courses until that of Tinctoris in the 1470's - some two hundred years later - and that is a description of an early Renaissance lute.

Later iconographical sources for the cetra, beginning around the time of Tinctoris with the fresco at the Palazzo Schifanoia in Ferrara (**CE 30**, c. 1470), sometimes show an instrument with twelve pegs. **CE 36** and **39** (c. 1494-c. 1520) are further examples with twelve pegs, both by Giovanni da Verona; another work of his, **CE 47**, actually shows 11 peg holes with a presumable 12th present at the upper end of the peghead. None of these 12-string cetre clearly feature a bordun nut-bridge arrangement as the earlier ones did. The treatise of Lanfranco (1533) describes the cetra as a six-course instrument of eight strings total: 1 / 1 / 1 / 2 / 2 / 1.[113] A first proposal for string layout for a five-course instrument with twelve strings would be: 3 / 2 / 3 / 2 / 2 (c. 1485-c. 1515?) and six course from c. 1500 on: 2 / 2 / 2 / 2 / 2 / 2 , following the example of the six-course instrument in **CE 38** (1498).

Within a period of one hundred years or less, from Antelami to the Ferrara Duomo, we have gone from a cetra with ostensibly four single strings to one with twelve strings, with little iconographical evidence as to their configuration in courses. The Assisi cycle **CE 15** (c. 1315), on the other hand, provides a number of clear images of three-course configuration (three single strings in one case, **CE 15l**) and one example, **CE 15k**, with four single strings, perhaps grouped as 1 / 1 / 2 ? After **CE 15**, we enter an unfruitful period for surviving cetra iconography, which lasts almost a century, until **CE 21**, Gentile da Fabriano (1408). From here through to the end of our study period, cetre will have four, five or six courses. **CE 21** has four double courses. By the 1420's, five double courses appear (**CE 23, CE 24, CE 26**), as well as examples with four, five and six single strings, grouping unclear (**CE 25a, b, c**).

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[113] For the original text and English translation of Lanfranco, see Appendix II.

During this period until c. 1460, five courses appear to be the most common configuration. In the 1460's we again see four double courses (**CE 30**) and a return to twelve pegs (?) in **CE 31** (c. 1470). Nine single strings in **CE 32** (c. 1478-1482) strongly suggests a four course configuration, 2 / 3 / 2 / 2, and is contemporary with Tinctoris' treatise confirming that the cetra has four strings. Meanwhile, **CE 35** (1485-1495) has ten pegs and presumably five double courses. Four, five and six-course cetre are all in evidence from 1500 on through the end of our period, c. 1530. Again, Lanfranco stipulates in 1533 that the cetra has six courses.

4.3.11 Strings: Material As organological forerunners to the cetra, the Byzantine *pandurae* introduced in **Chapter 1** were instruments with strings of gut (or sinew of some kind).[114] Sheep-gut strings, for musical instruments, are documented since late Antiquity and presumably are of more ancient heritage.[115] They remained *the* string type for all stringed instruments throughout the Middle Ages and into the Renaissance, with just a few exceptions.[116] Which are the exceptions?

For the pandura, Eichmann has argued that metal strings are out of the question because there would be different profiles of wear on the nuts of these instruments (I would also question the status - feasibility, availability - of metal string technology during these centuries); silk strings, he argues, had not yet found their way West from China during this period.[117] A unique late 12th-c. chronicle of Gerald of Wales tells of the use of bronze strings by Irish musicians, presumably in reference to the cithara, although whether this term meant "pillar harp" is unclear.[118]

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[114] See Page 1986, 223, for a reference to a 5th-c. Psalm commentary which mentions that the cithara "has strings from the intestines of a sheep."

[115] Page 1986, 223.

[116] Silk strings were used in place of gut, rarely, as a luxury commodity, to those with means, from the 13th c.; see Page 1986, 216. See more recently Koster 2015, 86, on gut string use in the 13th and 14th c. outside of Italy: "To judge from written sources, strings were rarely made of silk or horsehair in the vicinity and period of the citole when gut was the predominant string material of organic origin."

[117] Eichmann 1994, 65; for more on metal string manufacture, see below.

[118] Page 1986, 231.

The next reference is by the 13th-c. English Franciscan Bartolomaeus Anglicus in *De Proprietatibus Rerum* (c. 1250), where the strings of the *psalterium* "are best made from 'latten' and also from 'silver.' "[119] This is repeated by another Franciscan, Aegidius of Zamora, in his *Ars Musica* c. 1300. From about the same time comes the anonymous *Summa musice*, which mentions *cordas metallinas, intestinales vel sericinas* (strings of metal, gut or silk) as possible string types.[120]

Contemporary with the cetra cycle in the Lower Basilica in Assisi was the writing of the head Franciscan in all of France, the Parisian scholar and churchman Nicholas de Lyra, whose very name echoes the ancient instrument (he came from a town in France called 'Lyre'). In his treatise *Postilla* (c. 1320) - which would have been familiar to the Franciscan community in Assisi - he included a commentary upon Psalm 150:4: *Laudate eum in cordis.....ere seu intestinis* (Praise Him upon strings, that is, on instruments having strings of bronze or gut).[121]

Three of the five sources which have been mentioned in this section are written by Franciscans, and they mention metal and gut strings. The 13th-c. Franciscans Bartolomaeus and Aegidius associate latten (brass) and silver strings with the psaltery, perhaps with an implication that the cithara, as the instrument of earthly humility, uses, by contrast, gut strings. For this reason, and because of the string configuration similarities to Jerome of Moravia's vielle pointed out above (which was clearly a gut-strung instrument), it is reasonable to assume that the Franciscan cetra, like its Romanesque predecessor, normally used gut strings.

Metal strings should, however, not be categorically discarded as a possibility for the stringing of the instrument during these periods, remembering the textual sources named above, but also the bulkiness of the wooden frets shown on **CE 5** and **CE 8**. These are not

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[119] Page 1986, 236.

[120] Page 1986, 238.

[121] Page 1986, 239.

kollopes frets, for Antelami's cetra is dated some 200 years before the earliest appearance of kollopes, and an artistic mentality supporting the adornment of the cetra with features of the Antique kithara is hardly discernible during his period. The robustness of the fret dimensions might suggest the use of metal strings; in any case, wood is a much more durable and less expensive material than gut, especially for an instrument used by common people and clerics

By the 1470's, following Tinctoris, the cetra used metal strings. When and why did the change from gut to metal occur?

As described in **Chapter 2**, during the later 14th and especially the 15th c., the cetra underwent a conscious morphological transformation. That is to say, it took on new features which, for the Humanists, made it more resemble the Classical cithara/cetra they could see in Roman sculpture, for example, and read about in ancient authors. One of the novelties was a new kind of string material, possibly under the influence of Franciscan authors such as those mentioned above (for whom metal was a viable string material and the one they mentioned first), but the new fashion for metal strings was also, in part, thanks to the influence of translations of Aristotle (by d'Abano; see **Chapter 2**) and Pollux (*fila*, "wires"; see above). The Aristotelian passage in question reads: "We see that a thin and stretched string that is struck repercusses the air with numerous impulses before it ceases, so that the jingle persists for a long time after the blow, for which reason the medium is filled with the jingle. With a thick and loose string, however, this does not happen."[122]

The context of this passage, for a 15th c. Italian reader of Classical Latin texts on music, is worth noting. Due to recent technological advances in metal string manufacture (on this, see below), metal strings came into their own during the first half of the 15th c., and

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[122] Palisca 1985, 55. This is a translation by Palisca of d'Abano's commentary to Aristotle's *Problemata* 11.19. The original passage reads: *Videmus enim quod tacta corda subtili et tensa repercutit aerem pluribus ictibus antequam cesset unde tinitus diu remanet post tactum quare medium tinitu repletur. In grossa vero corda distensa non evenit illud.*

brought a fashionable, new sound color to instruments both old and new.[123] The sound was invariably described as "sweet", *mire suavitatis* (of wonderful sweetness), *melodia multum dulci* (with / having very sweet melody), while the term *grossa corda* or *cordas nervales grossas* meant a thick gut string, problematic in terms of achieving resonance on a plucked lute.[124] The thin string is twice described above in the Aristotlian commentary with the Latin word *tinitus* ("jingle", a metallic sound), just as Paulus uses *tintinnabulum* as his term for "bell".

John Koster has recently investigated the progress that was made in the later 14th c. as regards metal string manufacture:

> "The technology of wire drawing seems to have undergone significant development by the second half of the 14th century, when clavichords and harpsichords were first developed. These instruments require thin iron or brass strings, drawn down to a fifth of a millimeter or less....after about 1400, the great centre of wire drawing in Europe was Nuremberg, where the drawing of iron and brass wire was divided into several separate trades using different tools to draw wire successively to different stages of fineness. Water power was used to draw rods into thick wire, then heavy duty capstans, followed by lighter capstans. At the end of this last stage, the wire was about half a millimeter or so in diameter...By about 1370, a new specialized wire-drawing trade, that of the Scheibenzieher (the fine wire-drawer), appeared in Nuremberg....As there was great continuity in the *Scheibenzieher*'s trade, which had been conducted over centuries by members of the same families, one can infer from surviving wire made by the *Scheibenzieher* in the 18th century that they took as

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[123] See the multiple new keyboard and multiple older forms of psaltery described by Paulus Paulirinus of Prague, c. 1460, in Howell 1980.
In 2015, John Koster summarized the current state of information from the Middle Ages pertaining to metal string manufacture in the Middle Ages. He mentioned artifacts (drawn wire of brass and silver found at Viking sites in Scandinavia) as well as written documents (the 12th-c. *De diversis artibus* of Theophilus; a 12th-c. Irish work, *Colloquy of the Ancients,* describing a cruit-lyre? - with three strings, one each of iron, bronze and silver). Segerman 1999, 77 - 78, asserted that iron was "unusable" as a string material on musical instruments before the late 14th century.

[124] The Latin terms here are cited from the treatise on instruments by Paulus Paulirinus; see Howell 1980, 19-20.

> their raw material the end product of the old wire-drawing trades, that is wire about 0.55mm thick, which was eventually called gauge zero. The *Scheibenzieher* drew it one pass finer and called that gauge one; a second pass produced gauge two, and so on eventually to gauge 12, about 0.15mm in diameter.....each gauge was about nine-tenths the diameter of the preceding one."[125]

The new technology, producing thinner metal strings, also benefitted the cetra, with its relatively short string length. Regarding earlier types of metal strings used, for example, on 13th-c. instruments, Koster wrote that there was some evidence that they "were quite thick, perhaps half a millimeter or more in diameter," judging from the "robustly constructed medieval Irish, or better, Gaelic harps".[126] Iconographical sources from the period of Tinctoris which show details of string sizes (**CE 32**, the Gubbio *instarsia* c. 1478-1482) show a narrow range of string diameters, in contrast to depictions of gut-strung lutes from the same era. The discussion of possible tunings outlined above confirms that between all of the open strings, there was a relatively narrow tessitura on the cetra; Tinctoris' four-course instrument had an open string range of - depending on the interpretation of his Latin text - a fourth to an octave only (a six-course gut-strung lute, by way of comparison, had a two-octave open string range). The limited tensile strength of brass and iron strings, in comparison to gut, surely was a primary factor for the compressed range of the cetra tuning(s).

By when had the shift to metal strings on the cetra happened? It is impossible to say with precision. It is clear that one source, earlier than Tinctoris, **CE 26** (c. 1440-1450) represents metal strings on the cetra. In this painting, a cetra is rendered alongside a five-course lute; while the (gut) lute strings are a brownish, darker color, the cetra strings are bright gold in color and thinner in diameter than the thicker lute strings on the lower courses (**Pl. 121**):

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[125] Koster 2015, 88.

[126] Koster 2015, 88.

Plate 121: Ortona, Museo Diocesano, Volto Santo di Lucca, Joculatore Domini, detail.

The dating of **CE 26** is not precise, but it would seem to fall within the period 1440-1450 as a best guess. If this is correct, we can assume that the practice of using metal strings had been happening for a decade or two before this, perhaps more. This could support the proposition, consonant with the literary references within a Humanist performance context (see Appendix II), with the available (German-made) strings described above, and the manifestation of other new features, that metal strings were being used by the 1420's / 1430's as the standard stringing on the cetra. It is possible that this was already established practice by c. 1400. And to conclude this section on strings and stringing, although the arguments outlined above strongly favor the use of gut as the normal string material prior to the 15th c., it is not impossible that earlier cetre, also 13th-c. examples, were strung with metal strings.

4.3.12 Plectrum The cetra was normally played with a plectrum. Already in the late 11th c., **CE 1** shows a tethered plectrum being used to play. This feature goes all the way back to the Classical kithara, where plectrums were connected to the kithara: "All of the instruments of the lyre family are played by means of plectra and all customarily have the plectron attached to the instrument by means of a cord. The kithara normally has it fastened to the bottom of the sound box..."[127] While it is not possible to trace an unbroken series of iconographical sources leading from the proto cetra all the way back to the late Roman kithara, it seems reasonable to assume that this was a feature of early lute family instruments which had likely continued to be practiced on Byzantine and Italo-Byzantine chordophones. While the precise form of the plectrum is indistinct in this miniature, it was held between the thumb and first finger, very much in modern guitar style.

Early sources are not always detailed in this feature, but some do show it. **CE 5** shows a massive, oblong plectrum apparently made of a hard substance such as wood, bone or horn. The end which is in contact with the strings seems somewhat narrower than the opposite end. **CE 7** shows a cord tied to both ends of the cetra, not attached to a plectrum

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[127] Maas and Snyder 1989, 68.

but extending, as a support strap, over the shoulders of the player. **CE 12** shows a long, thin white plectrum which possibly could be a feather shaft. The Assisi Elders in **CE 15** use thin, flexible plectra that might be thinly worked feather shafts, or sections of old instrument strings perhaps. In some cases they look not very different from lute or gittern quills from the same period.

The 15th c. brings some new information about plectrums. **CE 23** shows what looks like a thickish string that has been folded in half, and the "fold" is used as the pick. Perhaps it was a thin piece of some other material - a strip of leather hardened through some process? A strip of tree bark? Quills or feather shafts are also in evidence. **CE 34** shows something very close to a writing quill, as does **CE 40**.

In sum, there is little substantial difference between the plectrums used on lutes, gitterns and cetre in the 15th c., even though the cetra had metal strings. This could also suggest that players switched between these three chordophones, using the same kind of plectrum which they were used to. The most illustrious exponent of this practice seems to have been the gittern / lute player Pietrobono of Ferrara, who on at least one documented occasion at the Sforza court in Milano, performed on the cetra.[128]

4.4 Il Nome della Cetra

We may now briefly consider the question of the word "cetra" and related terms found in Italian literary sources. Appendix II contains a selective list of sources which can be divided into six categories: Biblical, Classical, Performative, Legal, Figurative and Definitive. "Biblical" refers to passages echoing the Bible, for example, the book of Psalms or Genesis 4.21 (Jubal etc.). "Classical" has to do with Greek-Roman mythology references, usually related to Apollo, Mercury, Orpheus etc., or a particular story, while "Performative" outlines an historical or historically-inspired event. "Figurative" means a general allegorical-poetical reference, "Legal" indicates a legal record or document, and

[128] See Appendix II, XV-6.

"Definitive" defines or describes the physical and/or functional characteristics of the object, within the context of a dedicated pedagogical treatise.

There is a plethora of different spellings and phonetic variants of nouns, adjectives and verbs related to the instrument that has been the subject of our study. The online TLIO (*Tesoro della Lingua Italiana*) lists the following word forms of the noun: *cedera, cedra, cera, cetara, çétara, cetare, cetera, cetere, ceteri, cetr', cetra, cetre, cietera, citara, citare, cìtare, citera, cytara, cytare, cythari*.[129] Missing here are the terms *cetura* and *cetula*; see Appendix II.

To return to our cornerstone monument **CE 5** of Benedetto Antelami, as seen in the list of sources provided in Appendix II, the term *cetera* is known from literary documents datable to the end of his life, that is, the first decades of the 13th century. The only vernacular text from the late 12th c., the anonymous *Ritmo di Sant'Alessio*, uses the spelling *cythari* (in singular form: *cythara*). Phonetically this term is already very close to *cetera*, which is the most encountered 13th-c. spelling for the instrument. A cetra player is typically designated *ceteratore* and the verb *ceterare* is similarly generated by the noun. How do we know for certain that *cetera* was the name used for the spatulate lute seen since c. 1100 in Italian visual art? Dante (see Appendix II, Item XIV-4) refers to it as a stringed-instrument with a neck, and the word cetra was also used in 14th-c. Tuscan and Umbrian literature to mean "small shield" of spade or roundish shape, suggestive of the body form of the instrument.[130]

We must also remember that the variant cetra terms given above in the *Tesoro della Lingua Italiana* list were sometimes used to designate an ancient kithara or other instrument.[131]

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[129] < http://tlio.ovi.cnr.it/TLIO/> (accessed 12.01.2018).

[130] See the *Tesoro della lingua Italiana delle Origini* online , http://tlio.ovi.cnr.it/TLIO/ (entry: CÈTRA (2) s.f), accessed 06.01.2018.

[131] A case in point is entry XV-5 in Appendix II, which describes a scene cut in relief on a gemstone owned by Lorenzo de' Medici, where Apollo is holding a *citera*. The stone, which is housed today at the Museo Archeologico Nazionale in Naples, shows an antique kithara in Apollo's hand, although other contemporary works inspired by this one show other instruments such as the lute; see Poeschke 2000, 159-161.

Both the Introduction and **Chapter 1** above addressed the fact that the Latin term *cithara*, with a multiplicity of phonetic spelling variants and versions in various vernacular languages, carried a generic meaning of "stringed instrument". While there may be many literary examples of the use of "cetra" where we cannot be certain which specific instrument (if any) the writer had in mind, there are enough cases of reasonable certainty to first consider the possibility that the term is referring to the chordophone that has been the subject of this study. See Appendix II for selected examples: each literary source has to be examined individually and considered within its context to know (or to guess) which instrument is involved. In some sources it may be a lyre, or even a bowed instrument such as those described by Tinctoris under the term *viola*.[132]

Tinctoris, who worked at the Neapolitan court during the 1470's and 1480's, described the cetra of that period, leaving us the only surviving music-theoretical text about the instrument. He used the name *cetula* rather than cetra. I have been unable to find any reference, anywhere, to another occurrence of this specific term.[133] The Spanish cultural context of the Aragonese court would account for what must be a Spanish influence upon the name, or a Spanish audience for his treatise. *Cítola* had been used since the 13th c. in Spain to denote the citole, which had faded from fashion there and elsewhere in Europe

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[132] "But there is another viola, devised (as they say) by the Greeks, differing from the lute not only in shape (like that) but also in the disposition and striking of the strings. Indeed, for it either three single strings, as in most, in a pair of fifths, or five (as in some) tuned thus and by unisons, are stretched unequally, that is swellingly, so that the bow (when its string, made of horsehair, is straight) touching one, according to the player's pleasure, leaves the others unstruck." <http://earlymusictheory.org/Tinctoris/texts/deinventioneetusumusice/#paneo=Translation> Tinctoris speaks here about a larger, waisted bowed instrument, and a smaller unwaisted one, the rebec. The invention by Greeks can refer to the Byzantine tradition of bowing from the 10th c. or earlier, which spread to the West, or perhaps to the rise of the *lira da braccio*, during Tinctoris' period, as an emulation of a Classical instrument, a new kind of lira. It is thus unclear from his comment whether Tinctoris is thinking of the *lira da braccio* or the vielle. The main argument for the latter is his description of a performance in Bruges, in which he heard two *viole* playing polyphonic music, of which he very much approved. Were they two *lire da braccio* or two vielles? The vielles could play single lines such as tenor and superius, whereas the *lire da braccio* could not (they are to a large extent chordal instruments).

[133] This is not the only *unicum* instrument name usage in Tinctoris' treatise; there are two others, *demi-luth* for the French version of the *viola da mano*, and *marionetta* for rebec (Baines 1950, 22-23).

north of the Alps during the late 14th c.; we know of at least one very late reference to the *cítola* in Navarre in 1412.[134] The name continued in use in 16th- and 17th-c. Spain, both for "mill clapper" (a wooden part of the mill-grinding equipment which made a rhythmic noise when in use) and for the late cittern.[135] That Tinctoris uses a Spanish-derived word obviously related to citole, yet at the same time clearly states that the instrument originated in Italy, supports the view outlined at the end of **Chapter 1**: the cetra was exported via pilgrim and trade routes to northern Spain and Provençal areas.[136]

The etymological similarity between *cetula* and *cítola* brings up the question of the relationship between the cetra and the citole. Were they one and the same instrument? Was the citole the direct ancestor of the cetra, as so often claimed in modern organological research?

Chapter 1 presented iconographical evidence of Italian provenance for the existence of chordophones with salient cetra features at least 100 years before the earliest citole depictions; it was argued that the later manifestation of the citole in Spain, France, England and Germany was a response to, and/or adaptation of, the Italian chordophone. From its beginning, the citole deviated from the cetra in significant ways: it featured thumbhole-construction (see Glossary) and a different resonator shape, both frontally and laterally (tapering in depth toward the end of the resonator).

As the citole faded from fashion at the end of the 14th c., the cetra got a second wind, so to say, as it was re-invented into what this study has called the Humanist cetra. The first unambiguous new characteristic of the Humanist cetra was the kollopes fret-system, inspired by Roman sarcophagus sculpture and other sources of Greek-Roman art; the

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[134] Wright 1977, 26-27.

[135] Molina 2015, 108.

[136] The earliest occurrence of the term citola has sometimes been cited as late 12th c. (Wright 1977, 25) from the Provençal poem *Daurel et Beton*, which, however, is a single and by no means reliable source regarding dating. According to Paul Meyer, the date could be sometime during the first half of the 13th c. (Meyer 1880).

kollopes "tuners" (= for the cetra: frets) were also present in translations of Classical texts describing features of the kithara.

Some of **Chapter 3**'s cetra images show two new features beginning around 1470: a tapering body depth and a "hook" or projecting point behind the peg-head. Both of these features have been discussed earlier in this chapter in conjunction with the Classical kithara, and can be found on some examples of that instrument in Greek-Roman art.

They shall now be considered from a secondary perspective of background which runs parallel to the Classical kithara narrative. The contemporaneous appearance of these two features on selected cetra images - features that might be understood as displaying a superficial similarity with the citole - with the use of the term *cetula* could suggest that these constructional traits were consciously applied in imitation of the citole. Furthermore, when one of these two features appears, the second one is also present; eight iconographical sources from the period 1470's - c. 1520 have both, whereas only one has a hook, presumably without a tapering body, and just two show a tapering body with no hook.[137] Despite the link described earlier in this chapter between the two morphological traits and the ancient kithara, they seem to have appeared on the cetra considerably later than the kollopes-frets.

Such an argument for referencing the citole would run as follows: although Humanists were obsessed with Classical Antiquity, they were also avid readers of heroic chivalric tales of knights and battles (examples: Boiardo's *Orlando innamorato*; Ariosto's *Orlando furioso*) from Carolingian and Arthurian cycles.[138] The fashion of these "ancient" stories, especially in a city like Ferrara (where the earliest "citolised" cetra - **CE 30** - was depicted, if one

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[137] The catalog sources showing both hook and body taper are CE 31, 33, 38, 39, 41, 45, 47 and 49. CE 46 shows a cetra with a hook and shallow upper body (no view of lower part), while CE 50 and 51 have tapering bodies without a visible hook (in the case of 51, a hook would not be visible even if there were one).

[138] Both works have a Ferrarese provenance; Matteo Maria Boiardo (1440-1494) wrote *Orlando innamorato* for Duke Ercole d'Este, while Ludovico Ariosto (1474-1533) continued Boiardo's work with his own under the patronage of Isabella d'Este.

subscribes to the argument), meant that the epic Carolingian and Arthurian characters and anecdotes were also present in musical performances that might have included such a *cetula*. Also fashionable in Ferrara in the last decades of the 15th and opening years of the 16th c. were Spanish-style musical instruments, for example the *liuto ala spagnola* (*viola da mano*), a personal favorite of Isabella d'Este.[139]

This hypothetical scenario offers the only plausible explanation for Vincenzo Galilei's bizarre comment 100 years after Tinctoris, that "the English, before other nations, first used the cetra" (see Appendix II, XVI-5). Galilei is thinking of Ariosto's *Orlando furioso* (which he quotes in another passage concerning the cetra) and he associates the "ancient" citole of the English/French, gone since almost two centuries by the time of Galilei, with that Golden Age.

A few conclusions concerning cetra terminology follow below:

Vernacular texts using *cetra* and *cetera* should be given the benefit of the doubt as referring to the contemporary necked chordophone, unless there is descriptive or contextual evidence to suggest a broader meaning. These are, overall, the most commonly used names beginning in the first half of the 13th century.

A Latin text with Humanist orientation (15th c., most typically) containing any related word-form should be looked at in terms of the categories listed in Appendix II (Biblical, Classical, among others). There are plentiful examples which are clearly referring to the ancient kithara (see XV-5), with Figurative and Biblical being categories containing perhaps a higher percentage of generic usage for the terms. Caution is needed when assigning a generic reading to a Performative text.

Courtly love poems in the vernacular are common throughout the 14th c. (as well as before and after). They coincide to some extent with secular-based works in the visual arts, for

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[139] See Prizer 1982, Prizer 1999 and Lorenzetti 1996.

example **CE 20**, and any cetra-related terms used in vernacular love poetry can suggest the contemporary instrument.

It is useful to consider name-meanings in light of an overview of iconographical sources for any given period. The sheer volume and consistency of visual images in the 15th c. may also suggest that these depictions are the popularly perceived associations in the minds of anyone reading the text in question. Around 1500 there seems to have been an increase in the volume of fanciful, stage-prop forms of the kithara and the lyre, which could perhaps reflect a loosening of terminology regarding the instrument type.[140] Within the general body of chordophones at this time, however, the cetra remains in the contemporary form presented in **Chapter 3**.

[140] See Winternitz 1979 for many visual examples of these types around 1500 and later.

CHAPTER 5 - Conclusions *DE INVENTIONE*

If they had to choose the most iconic, standard-bearing musical instrument for mainstream Classical music in the 21st c., most people would, without hesitation, point to the violin. The leader of the modern orchestra, it has dominated concert halls since the 19th c. and earlier. Yet many would be equally hard-pressed to give an account of that instrument's origins in the 16th century. This part of the modern violin's story has been notoriously difficult to pinpoint for organologists and music historians, and many words have been written in attempts to clarify the historical picture.[1]

To undertake a coherent summary of research regarding the violin in the 16th c. would be a daunting task by all accounts. I mention violin research as a comparative example, so that the reader may understand that such an unraveling of violin matters in the 16th c. would prove far less challenging than an in-depth summary of general medieval chordophone research, which typically has covered a much larger body of material, a much wider time span and a much wider geographical field than Italy. Rather than attempt to summarize all published research on the cetra until now, research publications of relevance to this study will be referenced as footnotes below.

As a final summary, the previous four chapters on the origins, identity, morphology and part-by-part dissection of the cetra will now be formulated in the following 20 conclusions, achieved primarily through the analysis of the iconographical data presented in **Chapter 3** (Catalog of Sources in the Visual Arts) against a background of contemporary sources of music theory and general world view:

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[1] See for example the voluminous bibliography offered on the history of the violin at MGG: https://www.mgg-online.com/article?id=mgg16216&v=1.1&q=violin&rs=id-959b7be9-4bc4-dfc8-6ddb-c9ea96540359 (accessed 18.03.18.).

1. By sometime in the 11th c., possibly earlier, a necked chordophone was being cultivated on the Italian peninsula which carried a Christian association. It was sanctioned by the Church, who fostered the use of its image in the visual arts and in Scriptural commentary.

2. The rise of this short-necked, gut-strung chordophone had partly, if not mainly, to do with the importation of Byzantine fashion, including musical instruments, into Italy from the 9th - 10th c. and perhaps earlier. This fashion included the use of the bow on short-necked chordophones of oval or waisted shape, which had previously been exclusively plucked instruments.[2]

3. Possible influences for the body shape of the proto-cetra were two: the late Byzantine pandura and the late Byzantine-Carolingian lyre, both instruments of Christian culture. The elongated, spatulate-bodied pandura, with disc-shaped peg-head, shown in the 9th-c. Stuttgart Psalter, occupied miniatures that were copied from "a model that was the work of the seventh or eighth century from the Milanese region", as has found general acceptance among Carolingian art historians.[3]

4. The horns were first seen as shoulder ornaments on a handful of Eastern Roman(Byzantine) *pandurae* from the 6th-8th centuries. It is not clear whether they first appeared on the pandura as references to the chelys-lyre-horns or kithara arms, or whether that referential meaning became

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[2] Some researchers have asserted that the early vielle led to the development of the medieval cittern, as for example Curt Sachs: "Die mittelalterliche Sister ist nichts anderes als eine gezupfte und zum Zupfen umgebildete Fiedel vom Typus des 10. bis 12. Jahrhunderts", Sachs 1974 (1919), 206. Winternitz opposed the view of Sachs (Winternitz 1961, 228), while others embraced it (Segerman 1999, 77).

[3] Schapiro 1980, 111.

fashionable much later. The horns had become standardized on the cetra by the 12th c., possibly referencing a heritage of earlier Roman/Christian instruments, but also labeling this chordophone as a Latin "plectrum cetra", rather than one that was played in Byzantine style, on the shoulder, with a bow.[4]

5. The iconography of the cetra antedates the earliest citole iconography, as confirmed by a close examination of 11th- and 12th-c. manuscript illustration of Italian provenance.[5] Pilgrim traffic, particularly to Santiago de Compostella, facilitated the dispersal of Latin fashion and culture to the west and north, including the cetra of the 11th-early 13th centuries. The confrontation of the Latin instrument with cultures outside of the Italian peninsula, for example in northern Spain and southern France, produced a local response, the citole, which quickly became fashionable in northwestern Europe.

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[4] The importance of the research of Winternitz, in particular in his publication of 1961, is that he gave an account of the presence of horns on necked chordophones over many centuries of European culture. He clearly went too far in seeing the instruments of the Utrecht Psalter as "evidence of the transformation of the ancient kithara into an instrument with stopped strings" (Winternitz 1961, 35). No instrument was "transformed"; the Utrecht Psalter instruments are Christianized pandurae featuring shoulder ornaments which have to do with multiple aesthetic elements, including a possible reference to kithara-lyre horns.

[5] Many publications have asserted that the citole preceded the cetra, illustrating an important weakness of research patterns in 20th-c. historical organology and music iconography: namely, the propensity of early and not-so-early researchers (Schlesinger 1910, Galpin 1910, Panum 1915, Sachs 1913, Behn 1918 et. al.) to make pronouncements concerning the origin and evolution of instrument types without the necessity of providing any credible reference other than their own claims. This fact has not prevented their work being taken as authoritative by later generations, who, too often, uncritically recycle commonplaces such as "the citole preceded the cetra", without undertaking the tedious exercise of checking the sources to see whether the commonplace is, in fact, true (for one of many examples using this general method, see Burzik 1994).
Publications taking the citole-first view include: Panum 1915 (1971), 459; Dart 1948, 50; Winternitz 1961, 226 (calling the citoles in the 14th-c. Queen Mary Psalter "citterns"); Wright 1977, 31; Stauder 1979 sees the citole becoming the 15th-c. cittern, with the earlier cittern of Antelami being influenced by the *tanbur* (which he does not clearly define) and the vielle; Burzik 1994, 438; Ivanoff 1995; Segerman 1999; Tyler, 2001.

6. The cetra went through three distinct phases of cultivation in Italy which may be termed Romanesque (c.11th c. - c. 1230), Franciscan (c. 1230's - late 14th c.) and Humanist (later 14th - c. 1530's). For the purpose of this study, the Humanist cetra period ends with the disappearance of kollopes-frets (block frets) c. 1530.

7. The Romanesque phase was defined by a synthesis of Byzantine fashion and exotic novelty, nuts-and-bolts music theory and a humble, popular, guitar-like instrument, all deeply embedded in Christian culture. It was cultivated by monks and tradesmen alike, and the Church realized it could appeal to all levels of society as a Christian ambassador.

8. By around 1200, probably earlier, the Italian chordophone was known by the vernacular term "cetra" or a related variant such as "cetera", "citara", or other possibilities.

9. The Franciscan period gave the cetra a more sharply focused Christian identity, thanks to an association with the most successful Saint of the Middle Ages, St. Francis.[6] As an attribute, the cetra was to the Saint what the Rickenbacker guitar was to John Lennon. The first question to ask about the context of any cetra depiction, in any part of Italy after c. 1220 is: is the artist working in a Franciscan context?

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[6] This is the reason why the Lower Church of San Francesco in Assisi has a cycle of 16 meticulously detailed cetra images, in addition to two by Cimabue directly above these, one floor higher, in the Upper Church. It is very likely the reason that the Brescian music theorist Lanfranco remembered in 1533 that the cetra was the instrument "of the Perugians" (Assisi), and, indeed, a high density of monuments containing images of the cetra are found within a 50-km radius of Lago Trasimeno in Umbria.

10. A possible (albeit inconclusive) "export manifestation" of the cetra outside of Italy and during the Franciscan period is the *guiterne latine* mentioned in 14th-c. Parisian literature and treatises.[7]

11. The features of the Humanist cetra were referencing (1) Classical authors such as Aristotle, Pollux and many others who commented on and described specific parts of the kithara, and (2) ancient Roman monuments showing the kithara, including the parts mentioned in literary works, from the last decades of the 14th and first decades of the 15th century.

12. The Franciscan cetra had existed concurrently with the citole, thus the citole was not the predecessor of the cetra.[8] Later, on selected examples from c. 1470/1480-c. 1520, a manifestation of two ornamental features, the neck "hook" and a tapering resonator depth, recalled the Antique kithara and/or the citole of the Chivalric past.[9] The latter association might be seen in the name form given uniquely by Tinctoris c. 1480, *cetula (*mixing "cetra" with the Spanish "cítola") and later, Galilei's remark in 1581 that "the English were the first to use the cetra".[10] These are hints that seem consistent with the Italian fascination with epic tales from Carolingian/Arthurian literature during the second half of the 15th / early 16th century. No examples of a necked

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[7] An untenable view on the meaning of *guiterne mouresque* and *guiterne latine* is presented in Wright 1977, 22-23, and Burzik 1994, 389, 410-412, who unfortunately adopts Wright's view. Two Parisian drawings from the 1360's and 1370's must be considered as candidates for the *guiterne latine* (see Appendix I, 24, 25).

[8] See also Conclusion 5 above.

[9] For arguments connecting the morphology of the cetra with the citole, see Wright 1977, 31. Wright's assertion has thus far received general acceptance (Ivanoff 1995).

[10] Equally, many publications use "citole" and "cetra" interchangeably and as synonyms, another commonplace in musicology and internet culture of 2018. Ivanoff 1995 and Tyler 2001 (online encyclopedias *MGG* and *Grove Online* respectively) are but two examples of "authoritative" sources of music history disseminating, in this instance, non-factual information regarding these terms.

chordophone with a thumb-hole, as found on the citole, have thus far been unearthed in Italian iconography.

13. The Romanesque cetra had three or four strings (or string pairs), pointing to a choice between Biblical symbolism and Boethius. This remained the situation during the Franciscan period, with the exception of three important and related monuments, **CE 8, 10** and **14**, with twelve strings (3 x 4). The Humanist cetra could have four, five or six string-pairs, although the classic model is represented by **CE 32** and the contemporary text of Tinctoris: in both cases, a four-course instrument. Any sources c. 1500 or later showing twelve pegs do not usually show a corresponding string grouping. By Lanfranco (1533), the cetra has six string-pairs.

14. The introduction of metal strings was a new feature on the Humanist cetra, driven in part by textual references to commentaries upon Classical authors, and on the practical side, by substantial technical progress in the manufacture of drawn iron strings in Germany. The Romanesque and Franciscan cetra very likely had gut strings, because a stringing in metal is thought to have been technologically hardly viable, and because the cetra from c. 1250-1330/40 often had a bordun string, which otherwise is only known from the gut-strung vielle of the same period.[11]

15. There are four different fret types, defined by shape, size and period of use. All were of wood, allowing for exceptional possibilities such as bone or some other dense material. Slat-frets are seen during the Romanesque and Franciscan periods, while triangular-profile wooden segments constitute the

[11] According to Segerman 1999, 84, before the late 14th c., "the iron wire available was too difficult to draw, and so was wrought (hammered into shape). This made it too uneven in thickness to be usable for musical purposes".

second fret type, limited to selected Franciscan sources. After c. 1400 come kollopes-frets (large block-frets) which project beyond the upper edge of the fingerboard; the fret ends are thus non-functional but are formal attributes which identify the instrument's tie with the Classical kithara. The fourth type features saw-tooth or inclined, scalloped contour of the fret surface sloping up to the actual fretting edge. Its period of use begins at the end of the 15th century.

16. Across the spectrum of iconographical sources for our period of study until c. 1500, depicted fret block tops appear to be flat, of uniform height, with the exception of the fourth type mentioned above.[12] A fret block was used to play a note by pressing the finger down over the space directly behind it, in other words, the space on the nut-facing side of the block.[13] A second possibility is to use the nail of the left-hand finger to press down on the flat surface of the block, close to its bridge-facing edge, to stop a note (see **Chapter 6**, section 6.3.3).

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[12] Allworth 1978, 26, proposed a saw-tooth profile for the tops of cetra frets, but there are no depictions in the Catalog until scalloped frets c. 1500 which show such a profile for the frets. Segerman 1978, 56, criticized Allworth: "We conclude that Mr. Allworth has misinterpreted the data…", but later proposed a more shaky interpretation (Segerman 1999, 85), arguing that the tops of the fret blocks were "gently curved" to allow precise finger placement to control intonation. Additionally, he contends that the humped tops produced a buzzing sound like a bray harp. Segerman gives no explanation for the spaces in between the blocks, and seems unaware that the relief-carved, detailed *cetre* in Rimini (CE 25) have flat-topped fret blocks, including one that can be examined from floor level (CE 25a). His proposal would create a uniquely regulated stopped-string instrument in European music, without precedent before or since.

[13] For an opposing view with a fundamental lack of evidence of any kind, see Segerman 1999, 85.

17. The frets were fixed to the fingerboard; they were not "moveable".[14]

18. The preliminary conclusion regarding the disposition of frets on the cetra has been that they were diatonic until c. 1300 and that cetra players needed only the scale of *musica recta* which diatonic frets could provide. The earliest unequivocal chromatically-fretted cetra depiction is found c. 1315 (**CE 15**), allowing chromatic pitches which had previously been hardly required in the musical practice associated with the cetra (primarily devotional laude, popular songs and dances).[15] Images from the 15th and first quarter of the 16th c. are generally suggestive of chromatic frets, with candidates for diatonic fretting fewer but persistently present.
Following a period of playing the constructed cetre described in Chapter 6, I now feel that this conclusion should be revised: diatonic and chromatic fret systems should not be thought of as either-or and mutually exclusive. It is in

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[14] Some authors have asserted that the frets were inserted into slots in the neck for the purpose of allowing different fret systems to be interchanged (Tyler 1980, 16; Segerman 1999, 85; Burzik 1994, 424; Tyler 2001). Tyler 1980, 16 (Caption to a reproduction of what is here published as CE 30b): "Notice the fret system, shown as alterable wooden 'block' frets which can be re-arranged for different tones and semitones in contemporary *intarsia* pictures". Tyler provides a rather novel response to the problem that some cetra fingerboards seem diatonic and others chromatic, with slotted, interchangeable frets, the player can easily switch between both…but unfortunately, this idea is generated from studying later 16th-c. metal-fret fingerboards of citterns which mix diatonic and chromatic fretting, a possibility posing no technical difficulty for a fingerboard with fixed metal frets of different segment lengths, as these had.
Objective evidence for such a claim is therefore fully lacking. Authors such as Burzik 1994, 424, seem quite content to recycle such "authoritative" information as fact, without making any real contribution to the historical picture.

[15] The same phenomenon is contemporaneously documented by Jerome of Moravia concerning vielle playing in Paris c. 1300, an instrument which shared features with the 14th-c. cetra: string configuration (including bordun strings), string material (gut), possible open string tunings, and chromatic notes on the fingerboard. For more on Moravia, see Page 1979.
Musicologist Louis Grijp wrote that the "medieval cetula" had a "fully diatonic fretting" but did not say when chromatic fretting began; he notes that in the *intarsie* from the period of Tinctoris, "we cannot discern any difference between major and minor seconds, an important argument against fully diatonic fretting" (Grijp 1981, 91).

fact possible to play chromatic pitches on a diatonic set of flat-topped frets, as pointed out in Conclusion 16 above.

19. The tuning of the four-string Humanist cetra could not avoid being connected with the four-string cithara in the treatise of Boethius. The Berkeley treatise provides evidence for this claim, and Tinctoris' account of the tuning of the cetra, as it has invariably been understood today, is highly problematic and must therefore be carefully reconsidered within the Boethian background and context of Latin-language music theory. Additionally, the string material of the Humanist cetra (brass and iron), through physical limitations of tensile strength, restricted the tuning range of the open strings; the foundations for 16th-c. cittern tunings were thus established.

20. The tunings of the 16th- and 17th-c. cittern forms are all related to the Humanist cetra and, by association, the Boethian *cithara*.

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CHAPTER 6 - Building and Playing: Principles and Practice

6.1 Introduction Regarding the mechanics of the sounding cetra, there can be no substitute for practical testing and doing. I have therefore elected to have four instruments built which together reflect the questions and conclusions of the theoretical part of the study. Although it is in common use everywhere today in the field of early music, I would not choose to use the term "reconstruction" to describe each instrument that has been built. For me, this would imply that there was a pre-existing physical artifact from which sections or parts were missing, for example, which could be rebuilt. Sadly, there are no known existing examples of the instrument which is been the focus of this study, although it is possible that an existing one built in the year 1462 (?) may have survived, at least until the early 20th century (see **CE 28**).

6.1.1 Authenticity What is an "authentic" cetra? During the 1970's and 1980's, it was fashionable to discuss authenticity in so-called early music performance. Like all words, "authenticity" requires a context to define its meaning. In those decades, the term was often employed to describe the instruments used in a concert performance, or the musical style of the performers. For the late Renaissance and Baroque periods, surviving instruments in museums were copied (or original old instruments were purchased), and the greater the resemblance to the original, the more authentic it was considered. The further back in time one searched, the fewer the instruments became that still existed. Original, un-altered instruments from the 16th century are extremely rare, but before this they are effectively unheard of. Any performer who wish to tackle music before the 16th century had to procure a modern-built instrument. The more precisely such an instrument resembled the same type as found in music iconography sources, the more "authentic" it was considered to be.

But because music is far more about ideas, communication, and social ritual than it is about the external form of a chordophone, its number of strings, or even its precise sound color, this "authentic approach" to early instruments has become less and less viable, as did

the use of the word "authentic" itself. An early music performance of 2018 may not be said to be a "reconstruction" of a performance which happened in 1448. It is a modern art form which has been inspired by the interpretation of historical documents relating to the performance which happened in 1448. Nothing is being re-created or created again; a new form is simply being presented within a totally different cultural and aesthetic context.

The absurdity of the concept of authenticity in modern performance can perhaps be illustrated with an example from our own lifetime. If we wish to re-create, say, the music of the Beatles, it is possible to buy the same guitars and amplifiers which they used in their performances. We can go to a vintage clothing store, buy the same jeans and sport the same hairstyle. We can find singers with the same voice ranges, colors and accents (maybe if we are really lucky we can convince the two surviving Beatles, Paul and Ringo, to perform with us themselves). All the tools for an authentic performance have been procured.

Yet the social rituals within which the Beatles performed their music are long gone and will never happen in that way again. The topics upon which the songs commented are no longer relevant in the same sense, and the melodies do not fall upon the same ears. The performer and the recipient of the performance, the audience, have both changed irretrievably. Even when the original performer, Paul McCartney, sings *Yesterday* in 2018, it is not a reconstruction of a performance in 1966. It is music of 2018.

So a cetra constructed in 2018 is not an "authentic reconstruction", but rather a new interpretation of historical data. The instruments which I ordered to be built have been made, in a sense, in the same spirit as the Humanist cetre of the Quattrocento in just this sense: they are new creations inspired by a careful study of iconographical resources and critical thought concerning the possibilities of the interpretation of these sources.

To what extent do the iconographical resources provide reliable information about the structure and use of musical instruments of the past? The question was addressed in a

publication of 1974 by Emanuel Winternitz.[1] This author was well qualified to give an answer, for he was both the curator of a large collection of historical musical instruments, at the Metropolitan Museum in New York, and an art historian with access to thousands of visual sources within his place of employment; he did not have to walk far to compare the two fields of data. His article concluded with a plea for increased cooperation "between historians of the figurative arts and of music" in order to better understand the histories of both, but especially of musical instruments.[2] At no time in his writings does Winternitz hint at any interest in modern practical performance of so-called Early Music, and there is no acknowledgement of any kind of a contemporary trend to actually try and play these instruments in serious concerts for classical music audiences, as a necessary part of a deeper understanding of how music may have sounded and functioned in the Renaissance. In this regard, the present dissertation challenges Winternitz's position, for its most central premise is that, just as a tool is defined only by practical use, a musical instrument must be used to be understood. It must be played and used for human expression and communication. In the case of the cetra, in order to be used today, it must first be constructed.[3]

6.1.2 Choice of models The models for the four cetre were chosen for a variety of different reasons, in total eight. The first reason was the relative degree of realism presented by the source, within a variety of source types. I purposely chose four different mediums of depiction: stone carving, fresco wall or ceiling painting, intarsia wood inlay

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[1] Winternitz 1974.

[2] Winternitz 1979, 233.

[3] With many images, such as a depiction of a Renaissance lute, we may be confident that an actual instrument, known and cultivated by a particular society, is being represented. It may be rendered with greater or lesser technical skill and with greater or lesser attention to specific details of construction, but because multiple examples exist as visual images in medieval and Renaissance art, and multiple real instruments have survived as a museum pieces, we accept as a fact that Renaissance musicians did in fact play lutes. With other instruments, such as the cetra, a body of consistent visual representations survives, whereas corresponding three-dimensional wooden instruments do not, at least before the mid 16th century. As with the lute, we may be confident that the cetra existed as a real instrument during the periods when artists were drawing it.

and illuminated miniature, to try and explore how the limitations of each medium could be managed and interpreted. The second point was to try and cover a wide span of time, which could mean anywhere between 1100 and 1530. A third criterium was to explore both known constructional types, i.e., carved and built-up construction. A fourth theme to be explored in these chordophones was that of fret configuration, diatonic versus chromatic. A fifth topic was the question of tuning, and a sixth criterium looked at general size, large(r) versus small(er). The seventh set of questions revolved around string material, gut versus metal, while the eighth topic was concerned with accessibility to historical data about repertoire. All of these aspects were taken together into consideration before finalizing my orders.I decided that it would be necessary to have four instruments built, to cover a representative cross-section of the sources listed in **Chapter 3**. The earliest would come from c. 1260-1300, while the latest would be associated with years around 1500. This period covers two of the three distinct cetra styles, the Franciscan and Humanist.

6.1.3 Repertoire / Musical function I was admittedly less interested in the Romanesque type of cetra because there is hardly a known repertory to speak of for it. The repertory for the pre-13th c. instrument probably consisted of the accompaniment of monophonic Latin song (for there is no pre-13th c. source for vernacular song in Italy) and playing dance tunes, of which nothing survives. The situation improves in the 13th c., which sees the advent of the *lauda* or devotional monophonic song in Latin and Italian. Sources of 13th-c. Italian dance music do not survive, although melodies could perhaps be adapted, or imagined, as simple dance music from this period.

Things improve markedly in the 14th c. in terms of new possibilities regarding repertoire for the cetra, thanks to the rise of a notational system for mensural music. Song forms of all kinds open up as possibilities for accompaniment with the cetra, including both monophonic and polyphonic types. A smattering of dance music from the 14th c. has also survived, featuring simpler dances such as *saltarello* and *trotto*, practiced by all levels of society, and the *bassadanza*, the primary social dance form at the Italian courts. The simpler monophonic dances could certainly have been performed on the cetra, although some of them require chromatic notes on the fingerboard such as c# and f#. The 15th c.

meanwhile sees yet more repertoire chances for the cetra, with much of its 14th-c. musical functions still intact, plus new chances in the repertory of improvised epic singing. *Ottave rime* and *strambotti* would both have been candidates for cetra accompaniment, and in the last quarter of the century and first decades of the next, the *frottola* would often have been heard sung to the tones of the cetra.

Finally, it was clear that the four cetre should not be built by the same maker but by different ones, to obtain somewhat more diversity of interpretation for the group. It goes without saying that each instrument represents the beginning of a process, a process which by definition requires building multiple versions of the same instrument, in order to "iron out the bugs", as they say. Within the time span and financial budget of the present project, this has not been possible. Rather, each of the four instruments which has been built provides a necessary and viable *Ausgangspunkt*, point of departure. Because the designer and the builder, for two of the instruments, have been two different people, elements of compromise in the final results are unavoidable; this would also have been the case had I been able to do the building work myself. To a great extent, however, these four instruments reflect the conclusions reached in this study.

The task of constructing an instrument based purely on a visual image from half a millennium ago may seem like a daunting one. To undertake it, we must have a certain amount of confidence that we can understand the interpretation of the artist who created the visual work. The case of the cetra is greatly aided by the case of the lute. The latter happens to be one of the most commonly depicted musical instruments of the Middle Ages and Renaissance, and it also happens to have survived in physical form, at least in examples datable to the mid 16th century. From these existing specimens, we have learned to read lute iconography in order to understand important aspects of structure, playing technique and musical context. In addition, there are unique surviving examples of the citole and the gittern, two medieval instrument types which share common features with the lute. For example, all of these instruments were constructed with the soundboard made of spruce or other conifer (the same type of wood was used for the soundboards of

surviving Byzantine *pandurae*). We can therefore be confident that the sound board of the cetra in the 13th c. was made from the same type of wood.

This is but one dimension of historical data, however. Our construction of wood must also acknowledge aesthetics. Renaissance culture was completely absorbed with and dependent upon mathematical proportion as the source of ultimate beauty and truth. The design of any object or artifact within that culture was conceived in terms of proportion. Woodworking was done by hand and the objects produced by it had an organic aspect only perceivable to the eyes of a post-Industrial-Age observer. How the wood was finished, decorated and colored must also come into play as an expression of aesthetic. Decoration and color is heavily linked with symbolism, and in the case of the Humanist cetra, for example, the symbols used are often connected with Apollo. A carved head might be a young woman representing a Muse of Apollo, or it could be a lion, wolf, or dog, as the types found on the three-headed monster typically placed under Apollo's feet in Renaissance images of the god.

Each new cetra will be used to interpret musical sources of a specific time and place, and with each cultural setting comes historical information about the repertories practiced in that setting. The instrument must serve its documented musical purpose, and any apparently contradictory data gleaned from music iconography will have to be resolved or accounted for in light of the known musical function. Accurate fret placement in a visual image was not a high priority for any artist depicting a cetra before the later 15th c., and a modern observer who expects otherwise will quickly come to a state of perplexity. Similarly, if we know that 14th-c. *lauda* melodies were popularly sung among the laity, and that they rarely require chromatic pitches (*musica ficta*), then this information may influence our choice of fret system for a corresponding cetra.

We may go further with our *lauda* example. **CE 43** is one of a total of two Catalog Entries showing music notation in close proximity with a cetra. **Pl. 122** shows a page with music notation for an anonymous 2v-setting c. 1500 of *Verbum caro factum est*, a popular *lauda* of

the period, while **Pl. 123** gives a transcription of the piece:

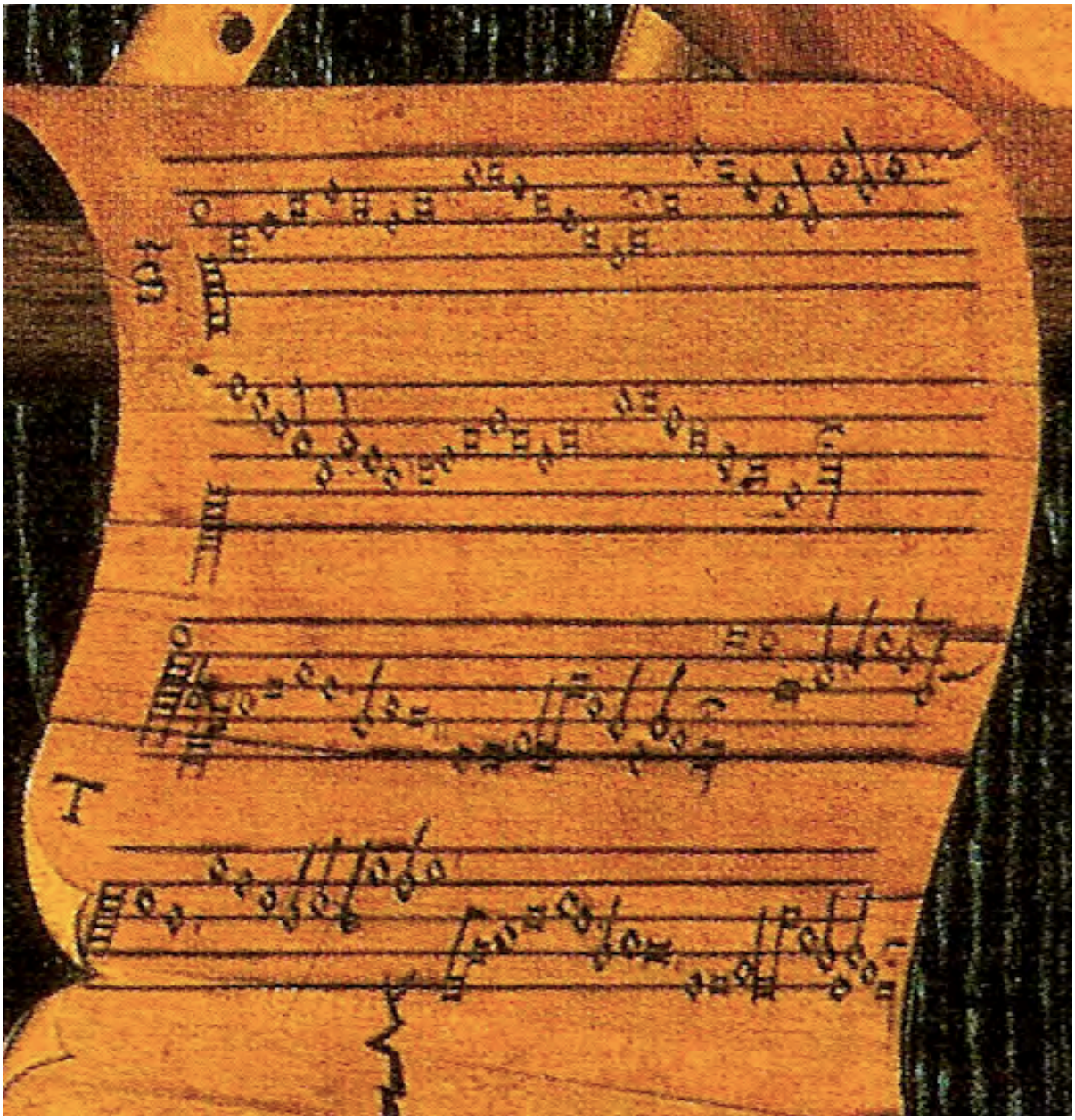

Plate 122: Siena, Abbazia di Monte Oliveto Maggiore, Choir Stall 10 (Fra Giovanni da Verona), page with music notation of 2v-composition.

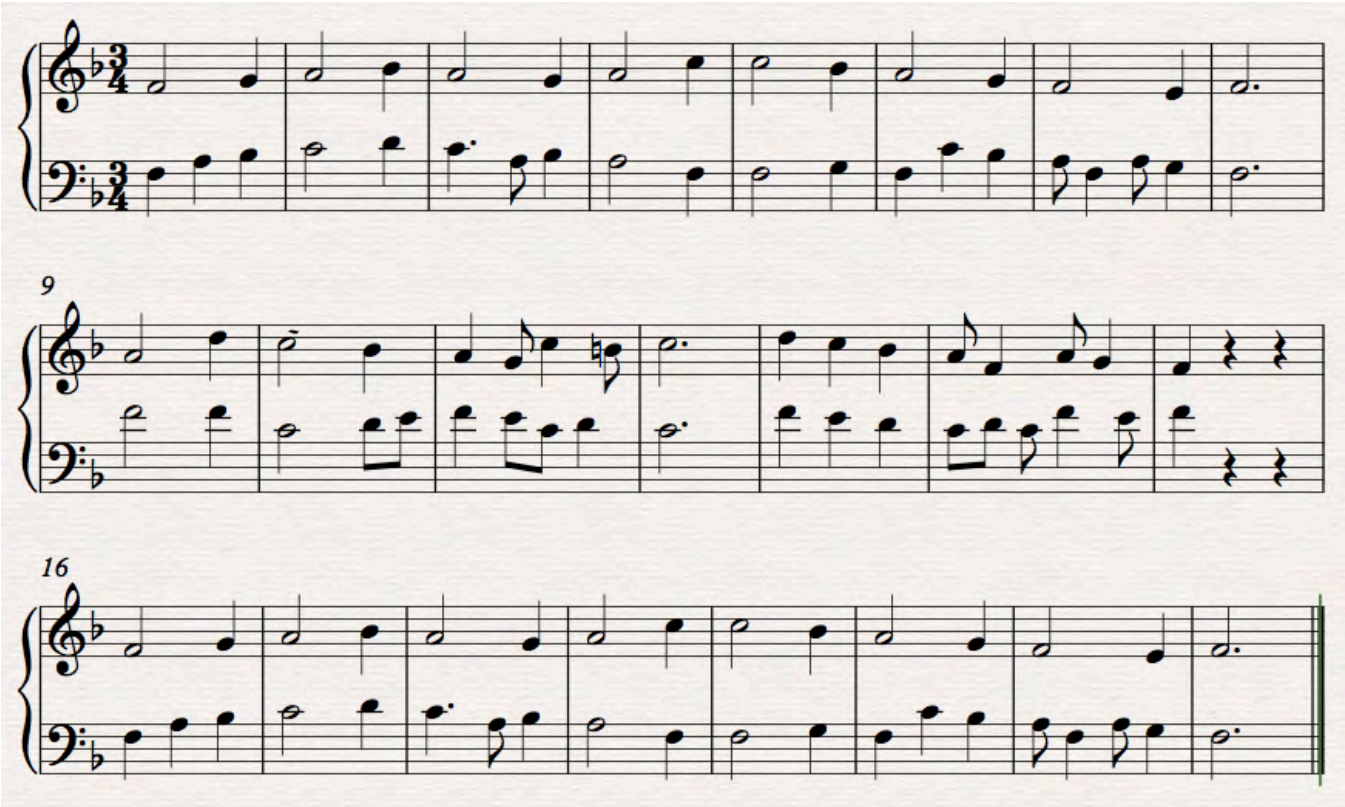

Plate 123: Transcription of Plate 122, (Siena, Abbazia di Monte Oliveto Maggiore, *Verbum caro factum est*, composer unknown).

Plate 124 reproduces a detail from the *intarsia* at Santa Maria in Organo (**CE 36**), a page with music notation of an unknown 3v-piece.

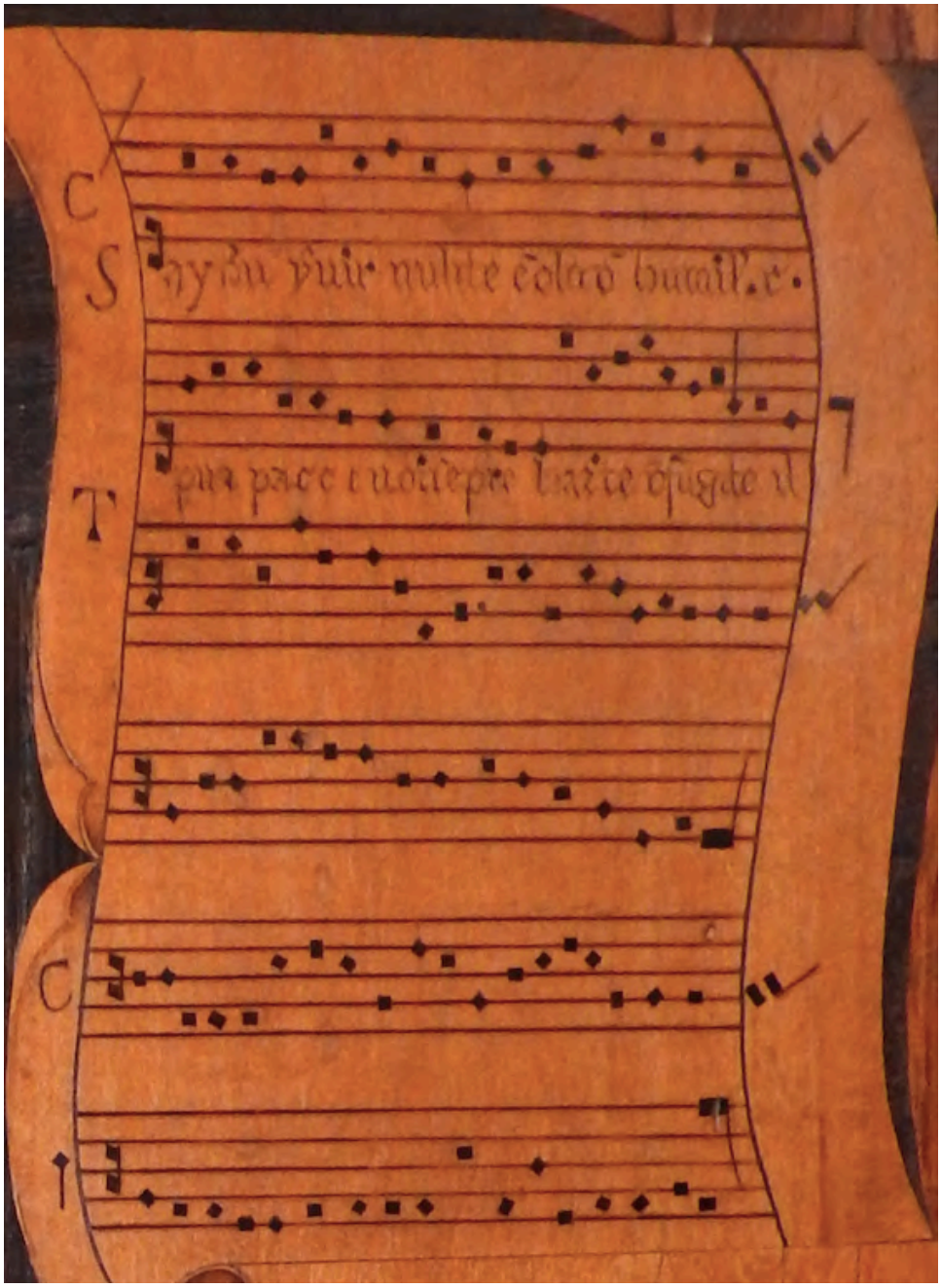

Plate 124: Verona, Santa Maria in Organo, Choir Stall (Fra Giovanni da Verona) with *intarsia* containing cetra and page with music notation of 3v-composition.

According to Elena Bugini, the page with music notation in the Verona *intarsia* was heavily restored by Francesco Ferrario between 1943 and 1946.[4] The result is musically incoherent and un-transcribable, although the restorer(s) - if indeed Ferrario - seems to have been looking at a three-part piece in triple rhythm and in the key of F. The contratenor voice shows stylistic characteristics of an earlier period than the date ascribed to the *intarsia* (1494-1499), with a so-called Burgundian octave leap movement at the final cadence, usually associated with polyphonic music from the first half of the 15th century. The text given in the uppermost staves on the page remains a puzzle, offering no clues as to which text, poem or piece it might be.[5]

The first reason for the presence of these works in the choir stall *intarsie* is the symbolism of the cetra as an instrument of the Psalms, as the instrument of David and songs of praise. It would be logical to assume that the cetra was commonly used c. 1500 to accompany *laude* or devotional songs which were sung by all levels of society. Was the two-part *Verbum caro* of the Monte Oliveto panel played on the cetra around 1500?

The answer depends upon what one understands as the cetra used in the practical performance. It is highly unlikely that the songs were played on the diatonic cetra as a polyphonic intabulation typical of solo lute arrangements during this period, for the physical structure of the instrument, including the open string tuning and fret configuration, did not allow this possibility for 2v-counterpoint in correct Franco-Flemish style. The cetra, in contrast to the lute, was an unlikely tool for demonstrating technical prowess or musical virtuosity. It symbolized the humility of St. Francis and the joy of being able to praise God through melodic utterance.

Playing one of the two voice parts of the intarsia's *Verbum caro* was well within the practical scope of the diatonic instrument. While usually enhancing or supporting a sung melody, the cetra could also deliver an autonomous instrumental rendering of a well-

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4 Bugini 2011, 84.

5 Bugini 2011, 84.

known tune, both monophonically and monophonically enhanced; the latter might be a way to call the limited polyphonic techniques available on the instrument, if the player had the required skill. But we might say that its function in performance was as much through its associative identity - more, in some cases - with piety, humility and musical simplicity than with its acoustic support for the voice and presence in sound.

If, on the other hand, the cetra had chromatic frets and used a tuning such as the adapted Boethius tuning #1 given in **Chapter 4**, something closer to diminution playing could be achieved. By "diminution playing" I mean the playing of a superius or cantus part in a filled-out fashion with fast-moving note values, as played on a Renaissance lute, for example.

In other words, what becomes musically possible on one of the instruments I have had built, say, for example, the cetra built after **CE 33**, may or may not demonstrate anything about how that type of instrument was used in late 15th-c. culture. A number of features come together in the **CE 33** image:

- The **frets** look to me more like a chromatic system than a diatonic, and I have presented my arguments for this interpretation in **Chapter 4**, but ultimately, I cannot be 100% sure that the artist was painting chromatic frets, or whether he himself knew enough about them to even distinguish between chromatic and diatonic.
- The **number of strings** would have been either four, five or six pairs, with a small chance of one or two pairs being in octaves. I chose six pairs because there are some sources from this period with 12 tuning pegs, but in fact I have no way to be sure at all.
- The **tuning of the strings** is based on the premise that the unique authoritative contemporary source for the tuning of the cetra in this period has been unreliable, either because we do not understand his Latin usage, or he was unwittingly conveying incorrect information. My assumptions might be erroneous; in any case I have no conclusive proof that the instrument was ever tuned in the way that I am using it.
- The normal **plectrum type** may have been far stiffer and more inflexible than what I know from playing the lute (using a thin ostrich feather which is quite flexible), in which case it may not have been possible to play very fast notes.

If, despite my best efforts, I have not made the most objective choices for each of the features named above, then I may end up with a kind of Frankenstein cetra upon which I can play music which would have been inconceivable and strange to a practitioner of Humanist culture. This obviously has not been my intention. The performance results should fall in line with the data examined and not be at odds with it. The music-making done upon these cetre must follow everything I know about musical aesthetics in the Middle Ages and Renaissance. But, to be clear, the act of deciding what it is, having it constructed and how to play it and use it musically are all acts of a kind of informed faith regarding the cetra.

An existing instrument from Bologna well captures the musical spirit of the cetra: the so-called *violeta* of S. Caterina de' Vigri (Appendix I, Ex. 20).[6] It served the devotional music of the saint, accompanying pious songs of praise which she and her congregation would have sung. The instrument's excessively small size and bowed playing technique gave it a shrill, penetrating sound which carried well in the open air and in crowd situations, such as processions on Feast days. We cannot know the technical level of the playing of the saint, but it seems highly unlikely that she displayed the kind of virtuosity associated with a courtly musician like the lutenist Pietrobono of Ferrara.[7]

The musical function of the cetra was not limited to accompanying *lauda* singing. According to Tinctoris, it was used to provide music for popular (or "rustic") dancing. It is less easy to imagine a corpus of dance pieces than it is to visualize a repertory of *laude*, for the latter exists in Italian manuscript collections from the late Middle Ages. Monophonic lauda melodies were written down with their texts, although the musical notation is in many cases not mensural (i.e., the rhythmic structure is unclear). Polyphonic laude also exist which are rhythmically quite clear, for example, by known composers such as Jacopo da Bologna. But examples of dance music are rare, and the few we have seem to come out

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[6] Tiella 1975.

[7] For an account of Pietrobono's career in Ferrara, see Lockwood 1984.

of a courtly context. The most famous example is doubtless the so-called London Manuscript (London, British Library, Ms. Additional 29987), a collection very likely copied in Tuscany around 1400.[8]

The London manuscript is first and foremost a collection of polyphonic art songs, with works by the most famous Italian composers of the day. Many of these works are found in other manuscripts, but there are other types of compositions in this collection which are not secular songs and which are not found anywhere else. These include at least three different types of textless music, that is, music intended for instrumental performance, which in itself is an almost unheard-of genre to find in a source of music notation of the late Middle Ages.

The three categories of textless music found in the London manuscript are (1) four pieces to accompany the courtly dance form *bassadanza*, (2) seven melodies to accompany the type of dance known as the *ballo,* danced in courtly and popular contexts, and (3) eight examples of non-dance music for listening entertainment while attending a feast or other social engagement, called *istanpite*.[9] At first sight, any of these three categories would seem to be fair game to play on the cetra. The first and third categories however are primarily courtly music, and the *bassadanza* for example was typically accompanied by a standardized shawm ensemble which had no place for a cetra. The few records of *istanpita* performance report solo keyboard renditions. There is no mention in any historical record of a cetra performance for either type of courtly instrumental music.

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[8] See general information on this manuscript at https://www.diamm.ac.uk/sources/694/#/ (accessed 17.03.2018).

[9] Pieces in the first group are titled *Chançonete tedesche* ("German melodies for *bassadanza*"); in the second group, four pieces are titled *Saltarello*, one is *Trotto*, and there are two pairs which are usually treated as one composition each, *Lamento di Tristano-La rotta* and *La Manfredina-La rotta della Manfredina*; in the istanpite group, the titles are *Ghaetta*, *Chominciamento di gioia*, *Isabella*, *Tre fontane*, *Belicha*, *Parlamento*, *In pro*, *Principio di virtu*. For an edition with commentary, see Schima 1995. For a second edition making the unfounded - and by now widespread - claim that the *istanpite* are dance pieces, see McGee 1989.

Balli, on the other hand, included simpler, less refined dance types such as the round dance. These were enjoyed at all levels of society, and it is not difficult to imagine an outdoor social gathering with guests dancing to the sound of the cetra. So the existing dance tunes in this category from the London Manuscript can give us a start in playing dance music on the cetra.

In addition to *laude* and popular dances, the third kind of music was sometimes performed with a cetra: the singing of epic poetry and extended formulaic improvisations, combining extemporized texts with melody patterns. These performances were generally done by solo singers who accompanied themselves with a stringed instrument, either plucked or bowed. By the late 15th c., the instrument of choice for this kind of performance was the *lira da braccio*. A popular alternative to this *lira* was the cetra, which seems to have been preferred over the lute, probably because of the cetra's stronger association with Classical antiquity.

Such performances by *canterini* were hugely popular and were heard in a variety of settings, on street corners, feast days, civic ceremonies and in the private chambers of the most exalted courtly rulers. In these contexts, the cetra carried out important but modest musical duties, probably confined to strumming chords and playing simple, easy-listening melodic interludes to allow the voice a moment to rest.

As with the *lira da braccio*, the cetra accompaniments were not written down and do not survive in music notation.[10] It is possible however to study the many Italian song collections of the later 15th c. in order to understand the musical vocabulary that would have been used to accompany a melody. This is essentially a process in which the musical style is first absorbed and then adopted to the idiosyncrasies of a particular instrument, including its tuning configuration and fingerboard layout of possible notes available to be used. In the case of the cetra, there are markedly fewer possibilities then within instruments such as the lute, for example. Yet, as mentioned above, the presence of a cetra

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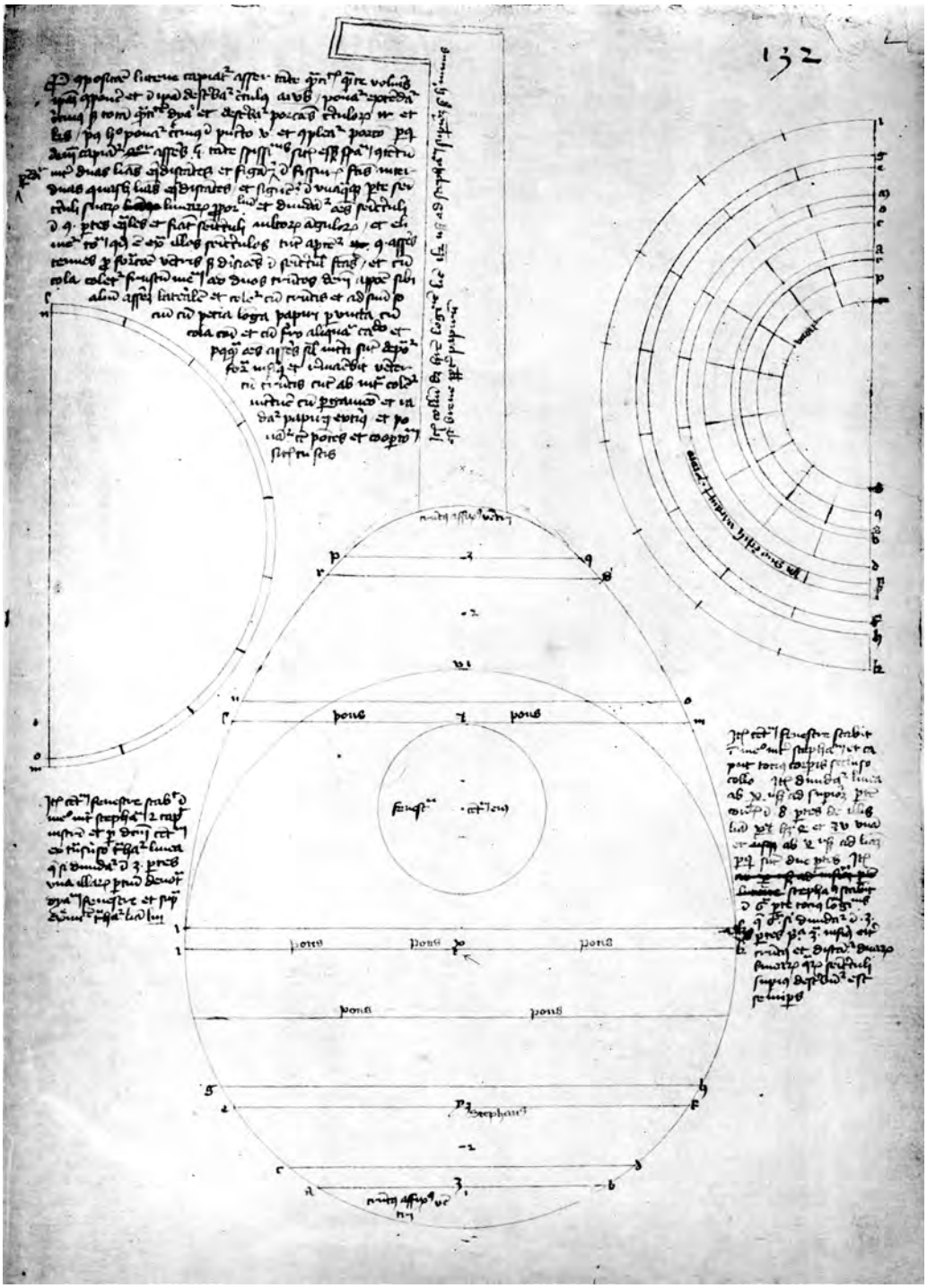
[10] Pes etc

brought a certain authority or credibility that the lute simply did not bring for this particular genre of musical performance.

In sum, our knowledge of the repertory of the cetra in the 14th and 15th c. is confined to the *lauda*, *ballo* and *strambotto* and other strophic song forms. Because all of these forms were central to Italian musical life, the cetra could always find a function to perform.

6.1.4 Drafting blueprints In order to build a cetra, a plan or drawing is needed. Light can be shed upon the mentality of 15th-c. instrument builders, thanks to a document written at the court of Burgundy c. 1440 This is the drawing of Henri Arnaut de Zwolle (**Pl. 125**):[11]

[11] Facsimile edition: Le Cerf 1932.



Pl. 125: Paris, Bibliothèque nationale, MS 7295, f. 132.

Although it is not of Italian origin, the drawing of De Zwolle conveys valuable universal information as to how instrument forms (like the form of any construction) were conceived, which also would have been well-known to Italian craftsmen. The principles of geometric construction of drawings, as applied to European painting, were nicely analyzed by art historian Charles Bouleau in 1963.[12] De Zwolle begins his drawing with a circle, a symbol of perfection. The diameter of the circle generates the form of the instrument and the placement of all parts (among others, rose, bridge, support bars under the sound board) using primary numbers in simple proportion. This produces a drawing of a lute which is - according to its geometry - concordant with itself or visually "in tune". Each builder or artist then makes his own version or variation upon the model, always keeping this one in the background. We have employed the same method for the constructed cetra, starting with a geometric drawing generated from simple proportions.

[12] Bouleau 1963.

6.2 Cetra #1: CE 33 (builder: Bruce Brook)

6.2.1 Geometry and Design:

My initial drawing for the Dai Libri cetra, **CE 33**, attempting to follow in the footsteps of De Zwolle, was generated as follows:

1. Begin with a circle.

2. To find the upper end of the body, take the diameter of the circle 2x (A - B in the drawing).

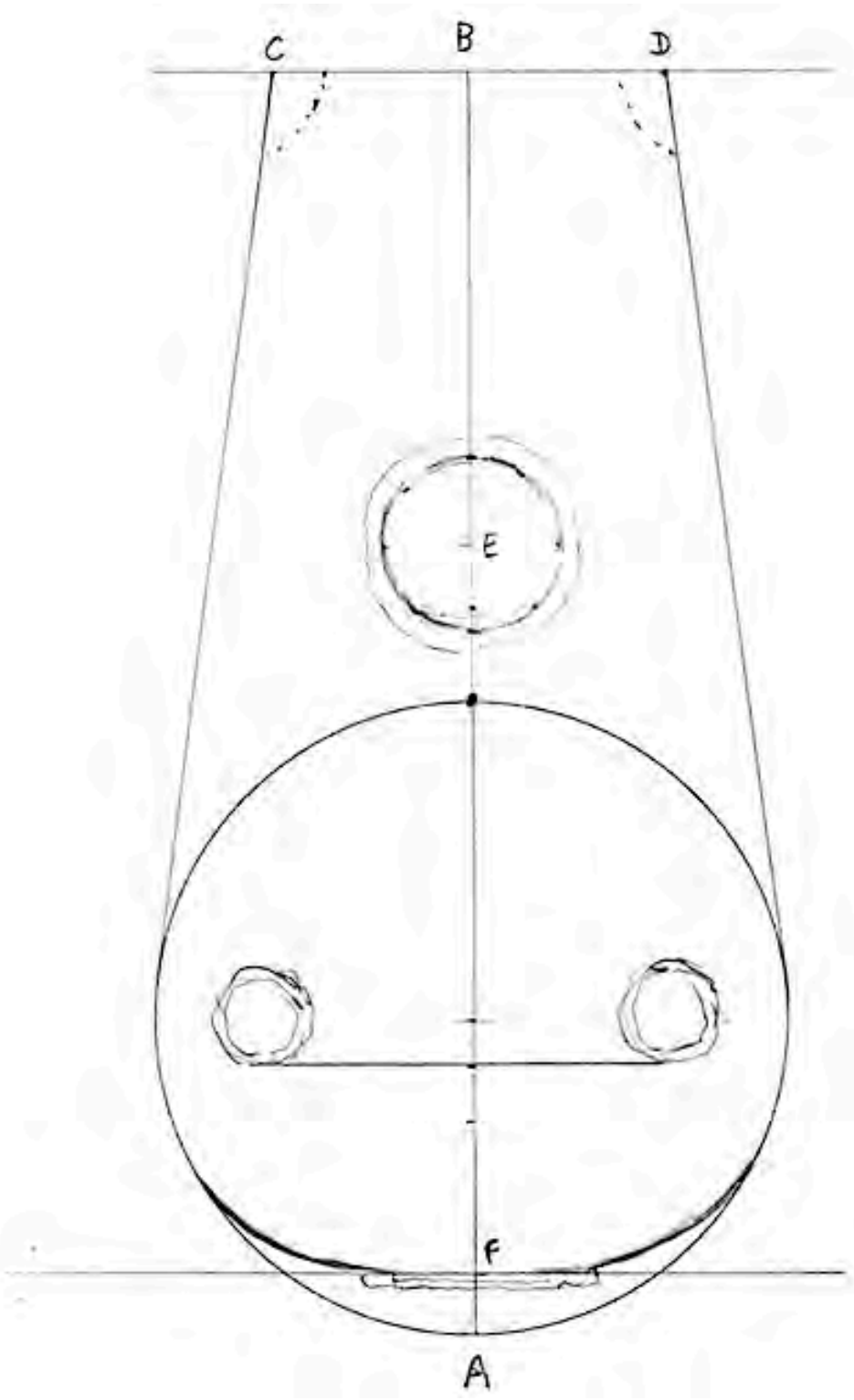
3. To get the angle of the sides, divide the diameter of the circle by the Golden Ratio (= approx. diameter x .62) and draw line C - D with B as the middle point.

4. To get the center of the rose, divide the diameter of the circle by 4 and draw this point at E.

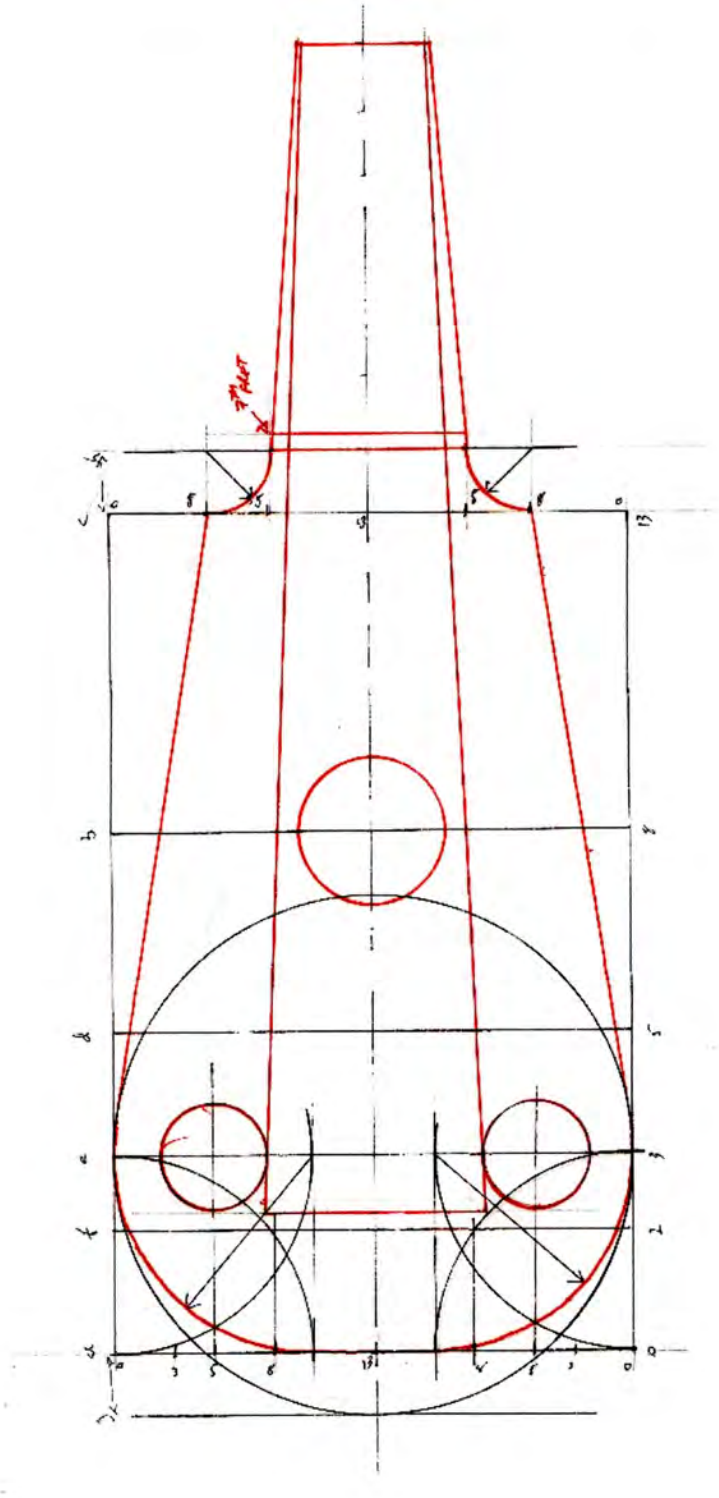
5. To get the diameter of the rose opening (without border), use one third of the body width at E.

6. To flatten the bottom of the instrument for where the comb / string-holder will go, divide the diameter of the circle by 10 and find letter F.

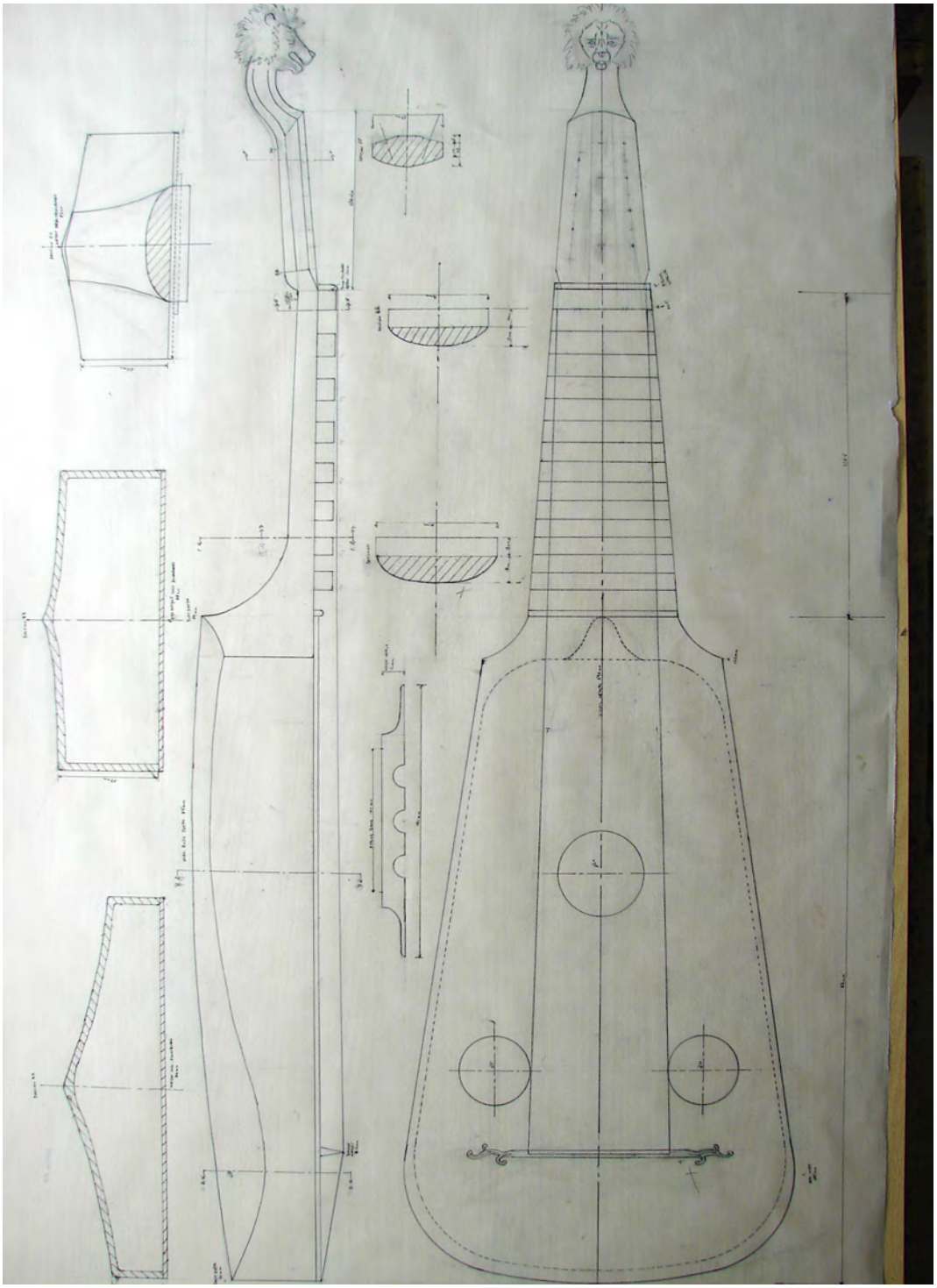
7. To find the bridge placement, take 1/6 of the length F - B.


C
B
D
E
F
A

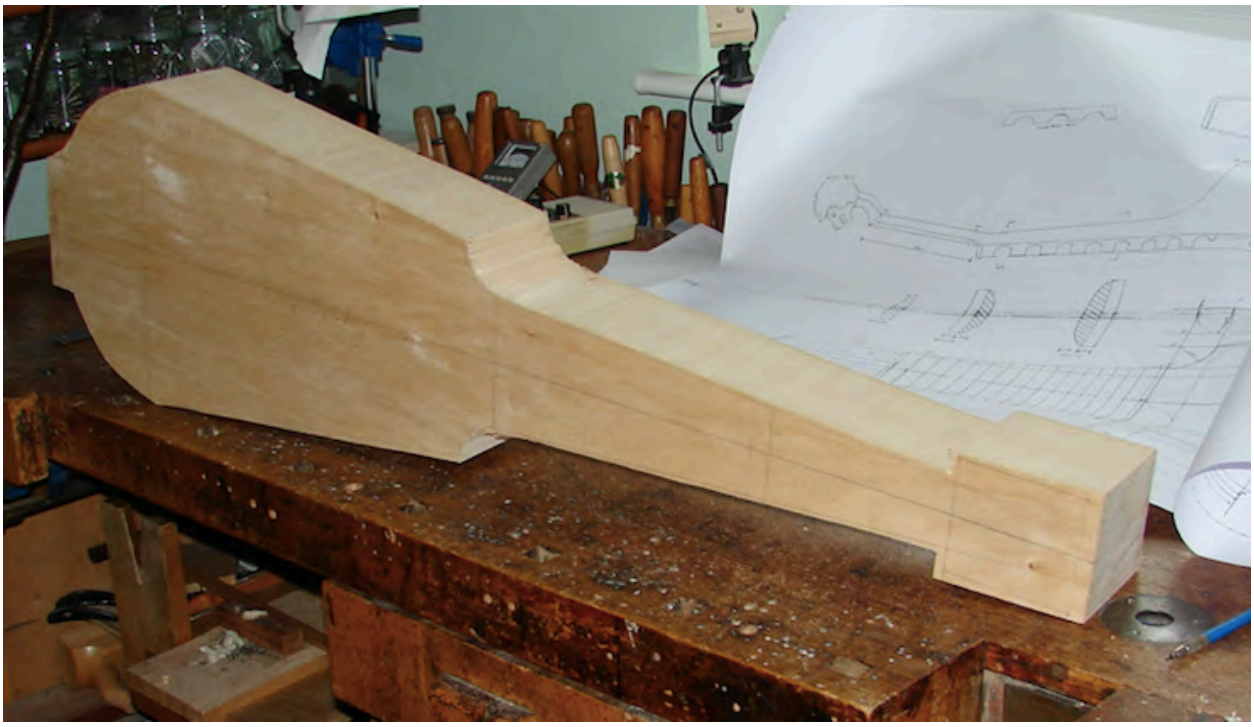
The drawing has thus been achieved by following the basic method outlined in De Zwolle: use a circle, simple proportions starting with the diameter (1:2, 1:3, 2:3 and others) and use the Golden Ratio. Bruce Brook then made a variation upon the plan:



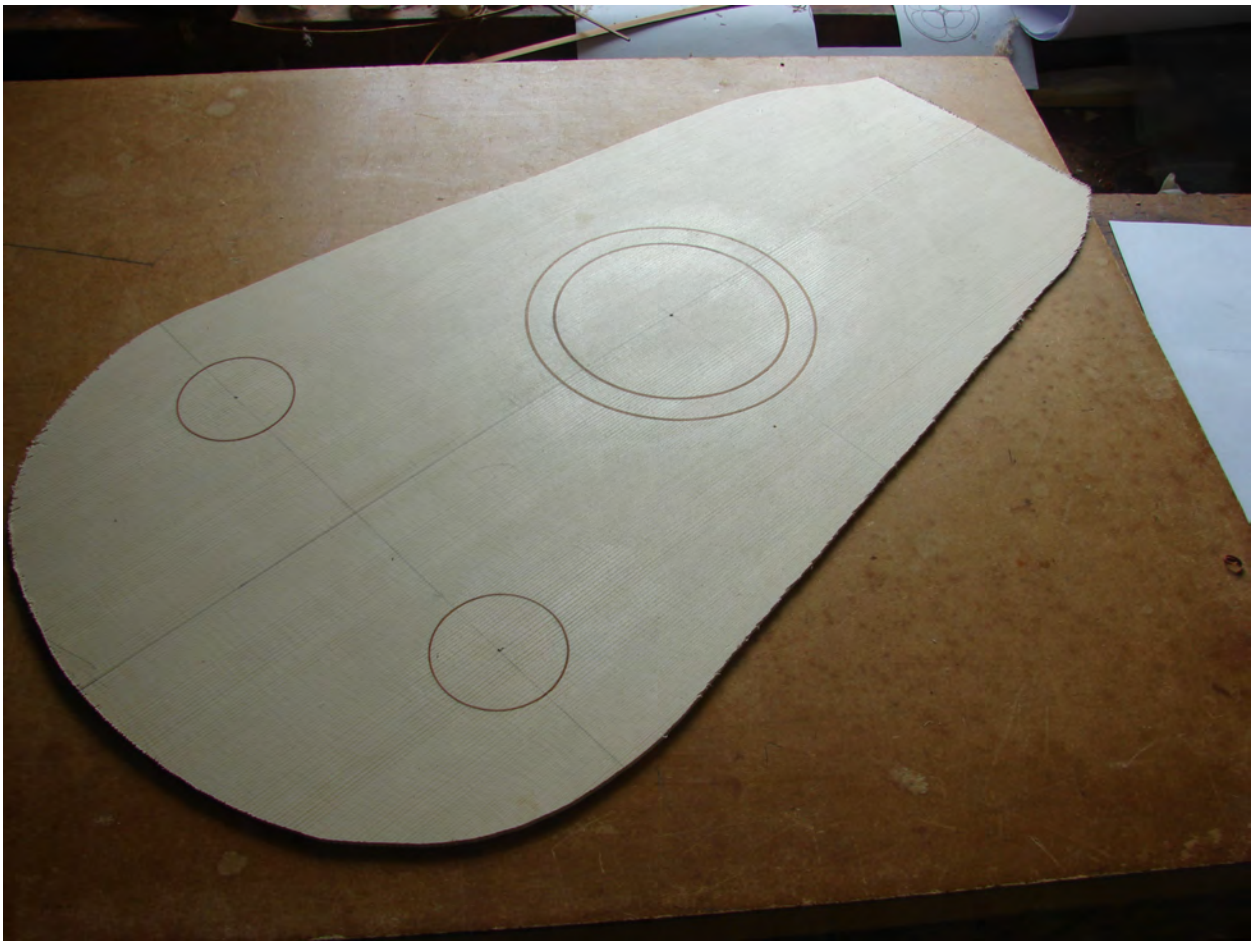
A full-scale plan was then the follow-up:

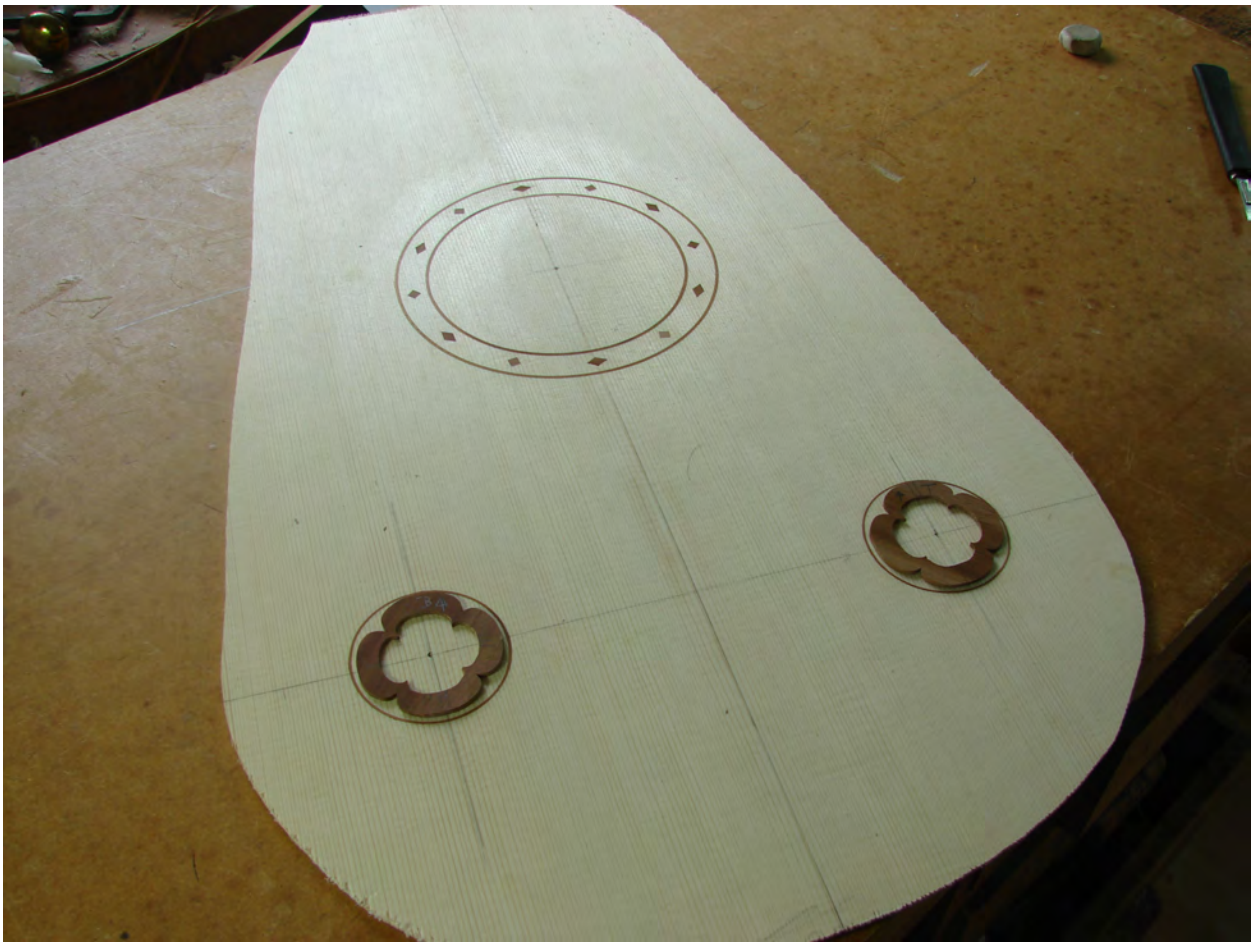


6.2.2 Woodworking Stages:



SUNDEW





6.2.3 Practical Assessment of Instrument

Frets: This fingerboard proves that flat-topped frets work, by pressing down on the space in between, so that the block edge on the nut-side is the actual fret or stopping edge. This confirms the general accuracy of depictions that show flat-topped frets; there are no detailed depictions showing separated blocks where there is anything but flat-topped frets. If the blocks are joined, or if the fingerboard is of one-piece construction, then the frets can be scalloped.

This also confirms that frets can be carved out of the original block for the entire instrument. If the fret-tops are all of the same flat plane, then the height of the bridge can determine the sound quality, i.e., with a clearer well-defined sound, or if the player prefers, with a very slight buzzing sound. This constructed example furthermore demonstrates that frets - and by implication, on other instruments - are neither angled nor stair-step (i.e., of decreasing height). The string is stopped by pressing the finger down on the space behind the fret block. The back edge (facing the nut) of the block forms the actual fret. Depending on the skill of the luthier and the will of the player, the angle of the bridge can be raised or lowered to produce a mild buzzing sound analog to the sound of bray pins on a harp. This buzzing sound color may have been postulated the Classical kithara and reclaimed for the cetra; the prominent circles shown on many ancient instruments may have been thinly beaten metal discs, loosely fixed to the instrument to create a kind of snare or buzzing color when the string was plucked (see **Chapter 1**, 75). The wide cetra frets could achieve the same effect.

The spaces between frets on this cetra are almost too wide, and the stopping finger would have benefitted from a somewhat narrower spacing in order to provide more stability for the intonation. On the lower frets with the widest spaces between them, the tuning is a bit tricky. This could have been avoided if the spaces were narrowed slightly, and it would not have compromised the look of the original source.

Therefore: the string length and fret system (chromatic or diatonic), together with the width of the player's fingers, determines the maximum width manageable for the spaces. Depending on the real string length - which is impossible to determine from the sources - there will be a graphic fret configuration or "look" to the spacings which must reflect some aspects of what the artist was looking at or remembering.

Tuning: This instrument will be used with five and six courses. For the six-course tuning, the top four courses will use altered Boethius in D, with the lowest course a second below at C and the remaining course a fifth above C: C / G / D / E / a / d. For the five-course tuning, adapted Boethius #1 and adapted Tinctoris #8 (see **Chapter 4**) will give the top four courses, plus one tone lower for the fifth course. Transposed to G, these tunings are:

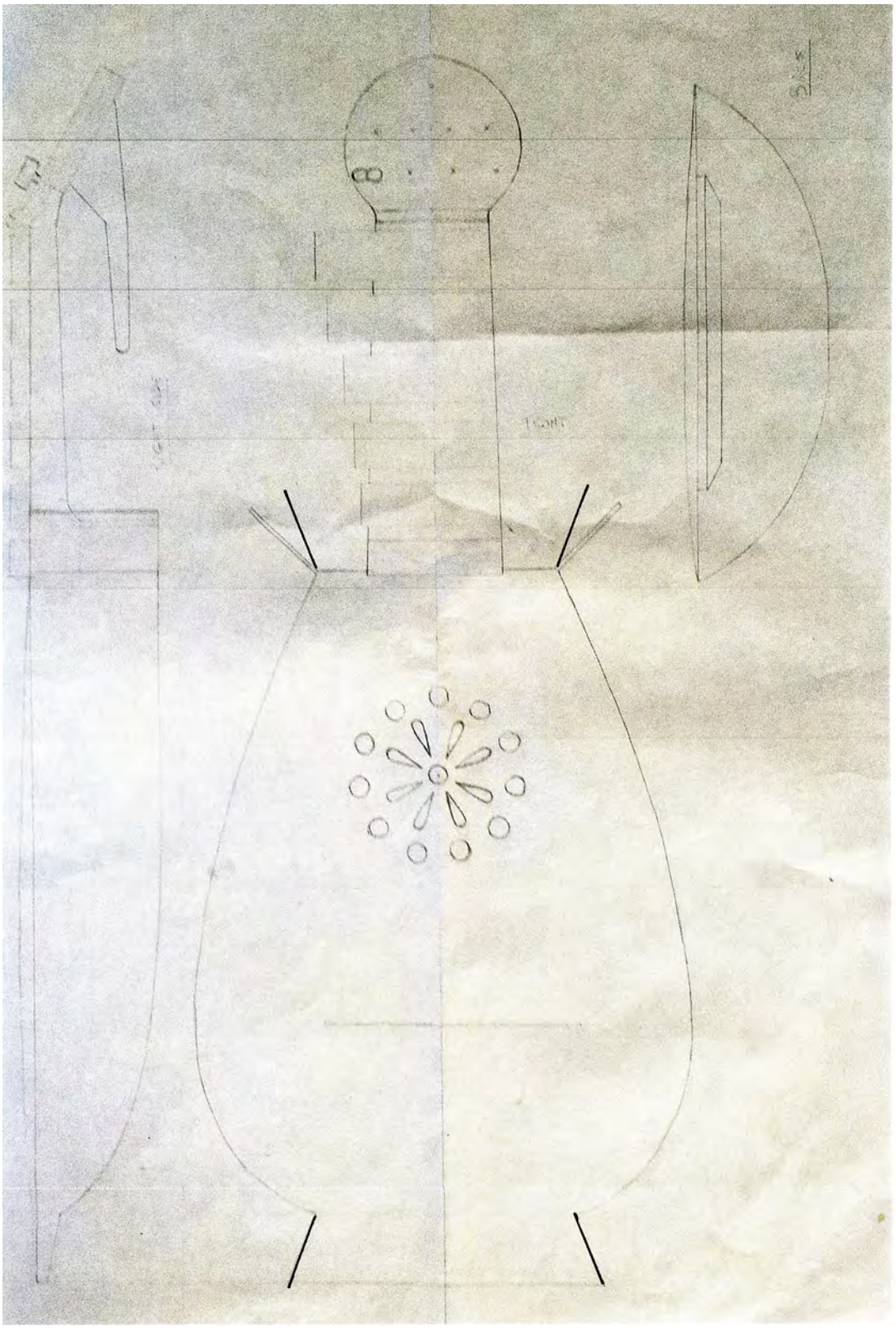
(Six course):	F / C / G / A / d / g
(Five course):	F / G / A / d / g
	F / G / A / d / e

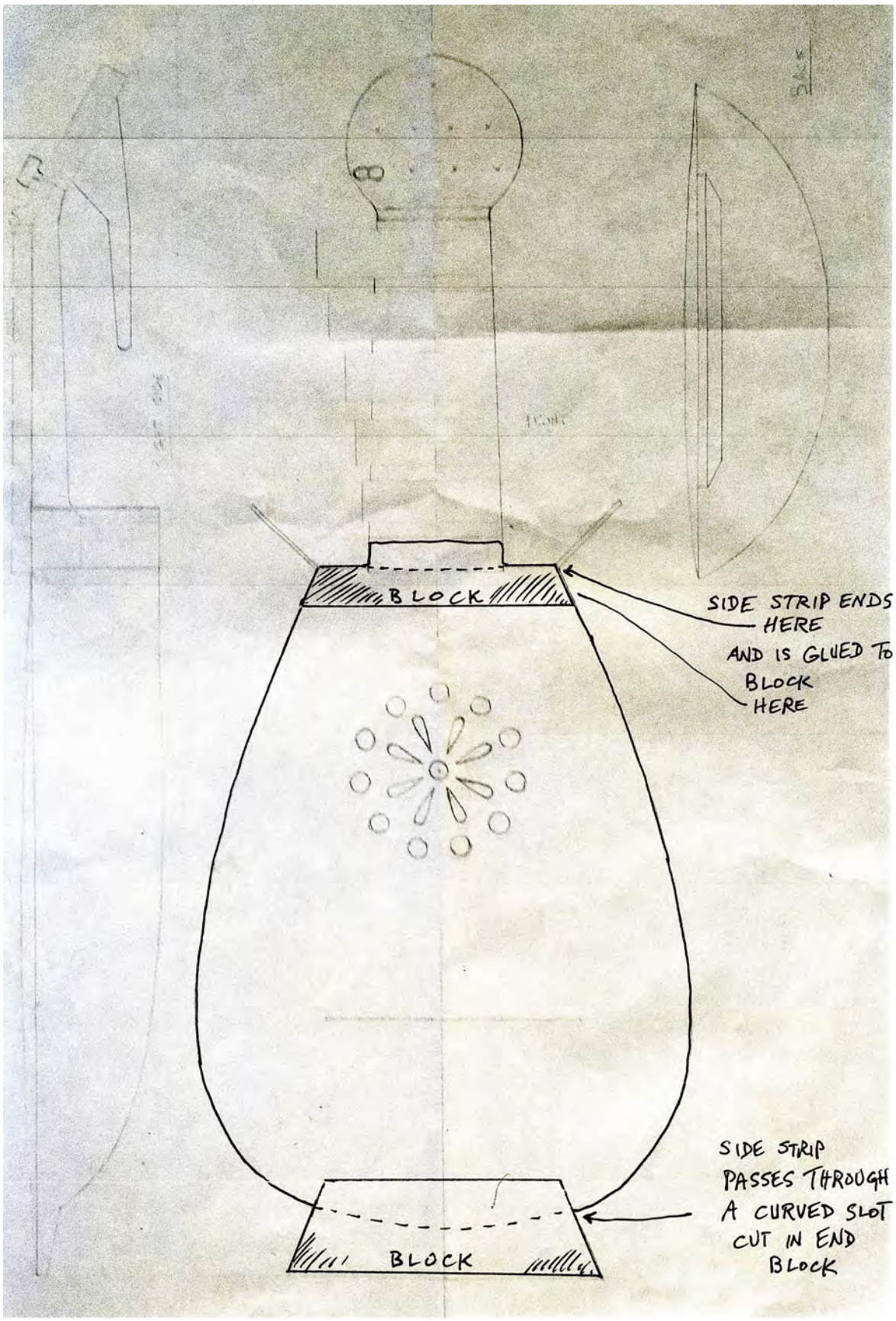
After a period of extensive playing of this instrument, I can now confirm that the use for diminution-style playing that was proposed earlier in the chapter will be possible, although not to the extent that it is on a lute. This comes as a great surprise, for I would not have expected that the kollopes-fret would allow rapidly articulated notes. Again, this musical possibility depends upon the tuning suggestions given above.

A second fact I can confirm is the superiority, in terms of tuning stability, of using one long metal string for both strings of a pair or course. This is a known system for stringing 16th-c. citterns, and it is achieved by attaching one end of the string to a peg, then passing the string over the bridge and around a metal pin projecting from the end of the body, and bringing the remainder of the string over the bridge and back up to the selected peg on the peg-head.

6.3 Cetra #2: CE 32 (builder: Luca Piccioni)

6.3.1 Geometry and Design:




BLOCK
SIDE STRIP ENDS HERE
AND IS GLUED TO BLOCK HERE
SIDE STRIP PASSES THROUGH A CURVED SLOT CUT IN END BLOCK
BLOCK

6.3.2 Woodworking Stages:

The concept used for the design of this instrument is that of built-up construction, which has been discussed in **Chapter 4**. There are three arguments for making this assumption regarding the construction method. Both sides of the instrument show quite clearly two holes, by which the sides were fastened to a mold. The second argument concerns the very thinly worked-horns, which look to have been glued to the neck block. The third argument is that the grain of the wood used in the inlay makes it clear that it is a different piece of wood than the neck itself, which has been attached to the block.

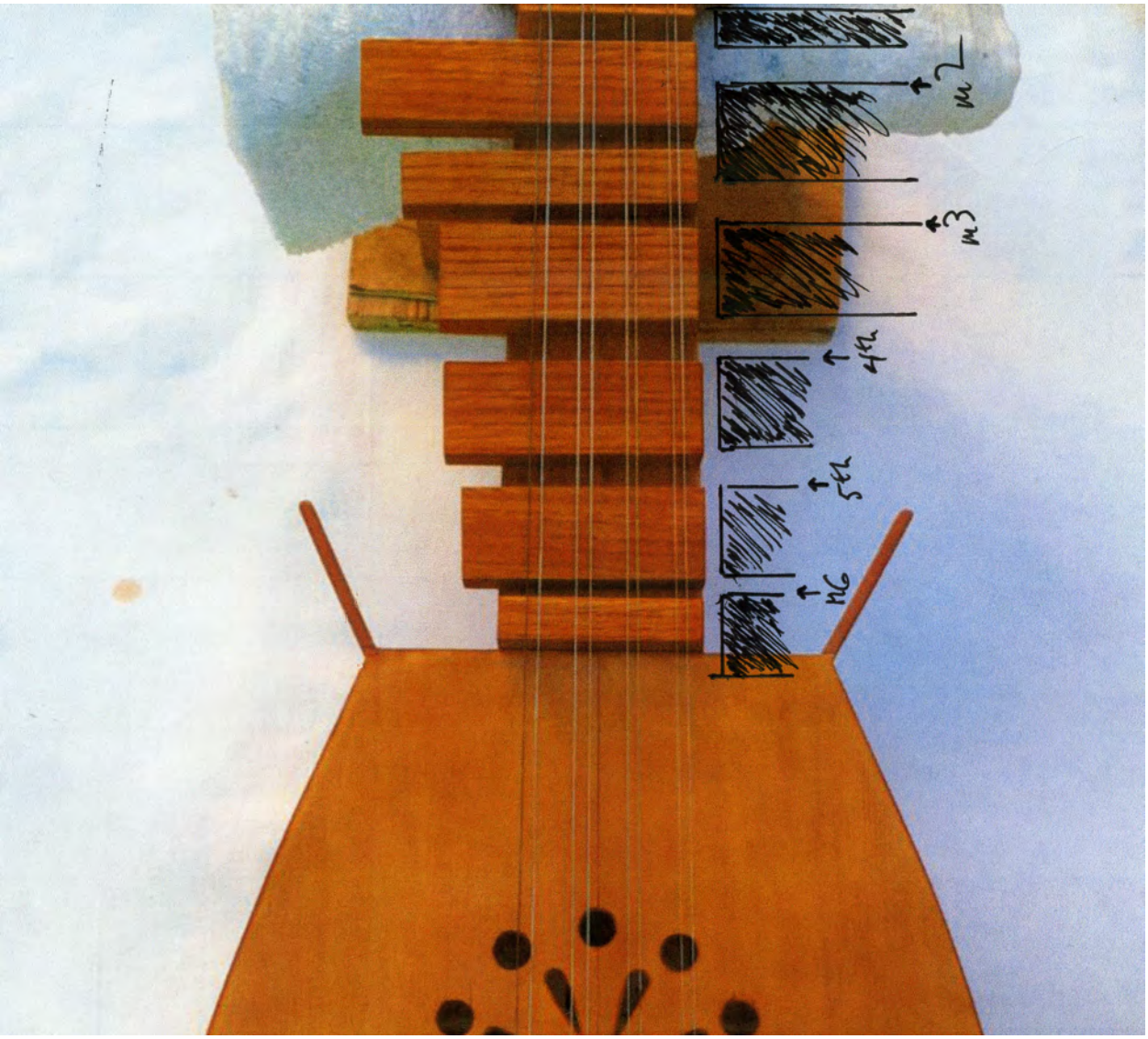
The process of construction unfolds as follows. First the sides are bent and attached to the mold, which contains a separate block at the bottom of the instrument which remains in the instrument to anchor the sides using wooden pins inserted in the holes shown in the *intarsia*. The sides are glued to the neck block (a block consisting of block and heel to support the neck) and then joined to the sides. The neck/peg-head piece is then seated and glued onto the heel of the neck block. The next step in the basic construction is to glue on the soundboard, and after this the block frets.

Earlier sources than **CE 32** of presumed constructed cetre seem to show that the neck block and horns are cut out of the same piece of wood (**CE 25**, **CE 34**). On **CE 32**, and other *intarsie*, the horns are very thin and may therefore have been attached separately to the neck block, as has been done on this construction.

There is one argument which might speak against the construction method just described. The back of the body at the end of the resonator might be interpreted as depicting a slightly rounded back. If one acccepted this argument, the resonator would first be carved out of a block of wood, without a neck. The neck block would then be joined to the resonator. None of the other Catalog entries provide similar information concerning the profile of the back. I have been unable thus far to find a 16th-c. example of this kind of construction, however it is theoretically possible. For this instrument, built-up construction has been used.

6.3.3 Practical Assessment of Instrument

After the construction was completed on this cetra, a re-evaluation of the fret configuration was undertaken (for a discussion of various theoretical aspects of the fret system on **CE 32**, see **Chapter 4**). The reason for this re-evaluation was that, in the depicted cetra in the *intarsia*, the width of the frets is more regular than they appear on the newly-constructed instrument. A possible way to keep a diatonic fret system, yet make the "look" of the fret sizes more like the original than is the case here, is shown in the following photo of the first constructed diatonic fret system (major 2nd, minor 3rd, 4th, 5th, major 6th):



Shown in the photo above, to the right of the frets, a new configuration has been drawn in, using the same intervals except substituting a minor 2nd for the major 2nd. This brings more of a graphic similarity to what is seen in the *intarsia*. The new proposal also included a widened nut, and a wider higher fret extending onto the sound-board. These proposals were drawn into the photo shown above, and corresponding changes were made on the instrument. The result is successful, offering both diatonic and chromatic pitches; the diatonic pitches are fretted on the spaces between blocks, while chromatic pitches may be fingered on the block surface using the nail of the left-hand finger.

This cetra is the most difficult "experiment" of the four instruments because, in addition to being the only built-up cetra of the four, it has other major problems of interpretation to be dealt with: are the frets diatonic or chromatic, and what is the tuning of the open strings? A further problem is the bridge, which seems to be too long and thin to support the downward pressure of the metal strings. This, however, is not a major problem, for if a similarly shaped modern construction collapsed (which it has not done), a more robust design could easily be substituted from other 15th-c. sources in the catalog.

The built-up construction method has been successful in creating a working instrument with resonance and volume. As a result of this experiment, it now becomes solidly plausible that this radically different method of instrument building for the cetra was being practiced many decades before the generally accepted proposal of the mid-16th century.[13]

In addition to the question of construction, the problems of fret disposition and open string tuning become acute when attempting to realize a concrete hands-on musical instrument based on **CE 32**. We shall now report about the first problem: the results of the newly proposed diatonic fret system addended to the photograph described above.

The main problem with the first version of the fret system is that it did not graphically resemble the Gubbio *intarsia* in a convincing way. The first thing that strikes the observer about the fingerboard of **CE 32** is the regularity of fret width and height; these remain - to a great extent - constant within all of the frets, while the only varying factors are the length of each fret and the amount of space between it and its neighbor. The question of fret length is not a problem, for each of the six frets clearly gets shorter in length going up the fingerboard.

The question of the distance between each fret is trickier. What is now clear is that the string length determines the uniform fret width, as clearly shown in **CE 32**, and that with a

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[13] See Chapter 4, section 4.1.

uniform fret width, the distances between the frets will decrease slightly between each fret progressing up the neck.

There must also be sufficient string clearance above the surface of the frets, in other words, the action of the strings must not be too low; if it is too low the string will buzz against the fret.

Unexpectedly, this newly constructed experiment showed something else: it is possible to play a note by pressing the finger directly on the block itself. This is, to my knowledge, a concept which has been neglected in modern research. Frets have always been seen as an either-or system; they are diatonic or they are chromatic. That is to say, the available catalog of pitches on a given instrument depends completely on whether the fret system is diatonic or chromatic, with no in-between possibility.

It turns out that there is an in-between possibility. With the "diatonic" frets inspired by **CE 32**, all pitches in fact are possible. Some are fretted by pressing the finger upon the space in between the blocks, while others are sounded by pressing the finger directly upon the block, near the edge. When the latter is done, pressing down by using the nail of the left hand finger gives a better result, in other words, the pitch speaks more clearly.

This, then, emerges as the hidden benefit of so-called diatonic flat-topped frets (they are also chromatic). We may thereby fittingly be reminded how difficult it is for the modern mind to enter the medieval mind: our analytical "diatonic versus chromatic" opposition was not an either/or situation at all.

There now remains only the question of tuning. The obvious first choice for this instrument is the one reported by Johannes Tinctoris (see **Chapter 4,** section on

tuning). The first thing to report is that there is absolutely no way to make practical sense of the traditional Tinctoris tuning. It serves neither melodic nor chordal play. Plucking a simple dance tune seems extraordinarily complicated and awkward, when compared, say, to using adjacent strings tuned in fourths (as on the lute or gittern). Chordal accompaniment for a vocal melody from this period would be also severely limited.

The tentative but unavoidable conclusion is that either our traditional reading of Tinctoris is not correct, or, it is correct but he is inadvertently transmitting faulty information.

Proposition 1: If Tinctoris is correct that the middle two of the four strings are a 4th apart, then either the Adapted Boethius # 1 (G - A - d - g) or Adapted Tinctoris #2 (G - A - d - e), both given in **Chapter 4**, would be logical tunings.

Proposition 2: If Tinctoris is unknowingly incorrect about the 4th, which actually should be a 5th, for example, then the Adapted Tinctoris # 1 (A - G - d - e) would be appropriate.

Argument for Proposition 1: this was linked to the Boethian cithara in the late 14th-c. Berkeley manuscript, as we saw in **Chapter 4**. It could also be a logical choice for an earlier cetra. The Adapted Tinctoris #2 (G - A - d - e), with the top course lowered a minor 3rd, might make more sense for the tensile strength of the metal strings, which is less tolerant than gut as a string material .

Argument for Proposition 2: this tuning (A - G - d - e) is very close to the main four strings of the 16th-c. cetra (B natural - G - d - e) and could therefore explain where the 16th-c. tuning came from.

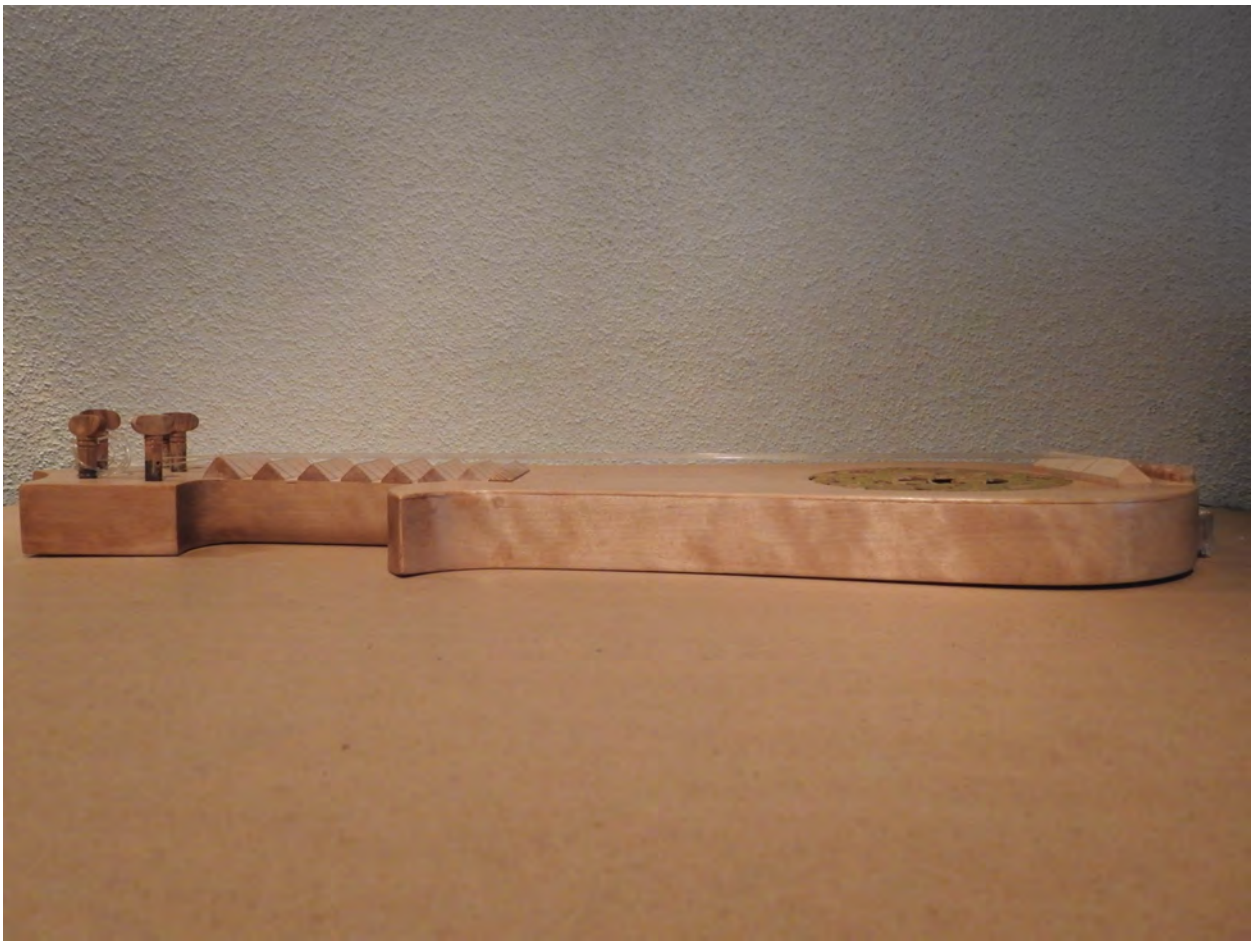
The tunings for this cetra will therefore be G - A - d - e and A - G - d - e as well as B natural - G - d - e.

6.4 Cetra #3: CE 15p (builder: Jacob Mariani)

6.4.1 Geometry and Design: Luthier Jacob Mariani conceived his own body shape design for this instrument, following the model given, **CE 15p**. The tulip shape, with prominent horns on the shoulders, was seen as a continuation of the 13th-c. shapes of the instruments featured in the Catalog. The body depth was determined to be slightly shallow. This would also provide a chance to see what the effect on the sound color might be as a result of the shallow depth. Given the dating of the fresco from the early 14th c., carved one-piece construction was considered to be the only feasible choice.

The cycle of **CE 15**, the quintessentially Franciscan Assisi group of sixteen cetre, displays certain details that are very similar to what is seen on images of vielles, in particular the peg head and stringing configuration. The latter typically includes a bordun string off the fingerboard, which is a shared characteristic with **CE 8**, **CE 10b** and possibly **CE 14**. The musical logic of such a bordun string is first and foremost to be able to access it by plucking with the thumb of the left-hand. On the vielle, the plucked sound brings a different, percussive color and adds another trick to the player's technical vocabulary. Rhythmic music would be the first to benefit from such a device, in particular of course, dance music. Other plucked instruments of the Middle Ages, for example, the lute or the gittern, are not seen with bordun strings, confirming that this was a specialty of the cetra at a certain period of its cultivation. Its presence demonstrates that the instrument was especially loved to accompany dancers, and perhaps that musicians who played the vielle and were used to the bordun also frequently played the cetra. The presence of this feature also would seem to offer further confirmation that the cetra was strung in gut, as is no evidence of a metal-strung bowed instrument of any kind during the period examined for this study.

6.4.2 Woodworking Stages:



6.4.3 Practical Assessment of Instrument

There are, in my opinion, two features in some of the Assisi cetra depictions which should not be taken 100% literally. These are the placement of the rose and the placement of the bridge. On most of the images from the cycle, the viewer does not see the bridge, which is covered by the arm or wrist or hand of the player. In one image, **15k**, the bridge is placed directly on the edge of the end of the body. If this placement were correct, any advantage from having a sound-board glued to the top of the resonator would be canceled, that is, the main purpose of the sound-board is to translate the energy caused by plucking the string, via the bridge, into moving this sound-board up and down in order to acoustically amplify the pitched sound. In order to accomplish this purpose, the bridge must be placed a sufficient distance from the edge where the sound-board is glued to the side of the instrument, otherwise there will be very little sound transmitted.

This is precisely what happened in the first experiments with the completed instrument. A muted, dull, tiny sound was produced, and it seemed obvious that in real life, the cetra never would have had its bridge placed in this position.

Similarly, the rose is placed too far back on the sound-board, occupying the space where a bridge would normally stand. In the case of this constructed instrument, it has been possible to continue experiments by placing the bridge over the middle of the rose, which does have one support bar underneath it, which prevents it from immediately collapsing under the pressure placed by the tightened strings upon the bridge. A real instrument would not have had its bridge placed in this position, for the bridge is the weakest part of the top. The conclusion from this experiments, therefore, is that a new sound board will have to be built with a different rose placement further towards the neck.

General size: is this size too big for this fret system, i.e., are the spaces between the frets too large? No, as long as the gut strings have a high tension, otherwise the fretting will be unstable with intonation. The neck and peg-head are too heavy, as there there is too much massive wood present in that part of the instrument. There is also a problem with the

higher frets: the fingers cannot reach above the 5th fret because of the large shoulders, they block the movement of the left hand. It is also a specific problem for the frets glued onto the sound-board: to take the trouble to glue frets onto the sound-board above the neck only makes sense if the frets are easily accessible to the left hand.

The front surface of the peg-head works well in terms of the angle; pegs are well-anchored and stable. The overall sound is good, with a positive presence, despite the shallow body-depth.

Stringing and tuning: this instrument will be used with three, four and five strings of gut (three strings on the fingerboard, tuned G - d - g; four strings on the fingerboard, tuned F - G - d - g; three strings plus off-fingerboard bordun, tuned d - G - d - g; four strings on the fingerboard, plus off-fingerboard bordun, tuned d - G - A - d - g).

6.5 Cetra #4: CE 8 (builder: Jacob Mariani)

6.5.1 Geometry and Design: As was the case with the previous instrument, Jacob Mariani conceived his own body shape design for this instrument, following the model given, **CE 8**. The tulip shape, with prominent horns on the shoulders, was seen as a continuation of the 13th-c. shapes of the instruments seen in the Catalog. The body depth was determined to be slightly deeper than the cetra constructed after the Assisi fresco. This would also provide a chance to see what the effect on the sound color might be as a result of the deeper depth. The sides of the body were to be strongly scalloped, as it was felt that this was the case on the sculpture.

The relatively early dating of c. 1260-1300 for this source allows us to be confident in assuming that carved one piece construction was used for this instrument. This meant that the body, neck and peg-head would all be carved out of the same block of wood, in this case a block of European maple.

Wood types that would have been used for cetra construction during this period were likely the same as those one or two centuries later on carved instruments, both bowed and plucked. In northern examples, the English citole from c. 1330 now housed at the British Museum was carved from one piece of boxwood, while the gittern in the collection of Wartburg Castle at Eisenach is made of one piece of maple (soundboards are of spruce, as with all examples given here).[14] Italian examples of necked chordophones are instruments probably best referred to as *violete*, including the violeta of S. Caterina de' Vigri and another specimen from the Untermeyer collection at the Metropolitan Museum in New York. The former is made of one piece of maple, the latter is boxwood.[15] While hardwoods such as these were often chosen, lime-wood and other softer woods were constructional options as well.

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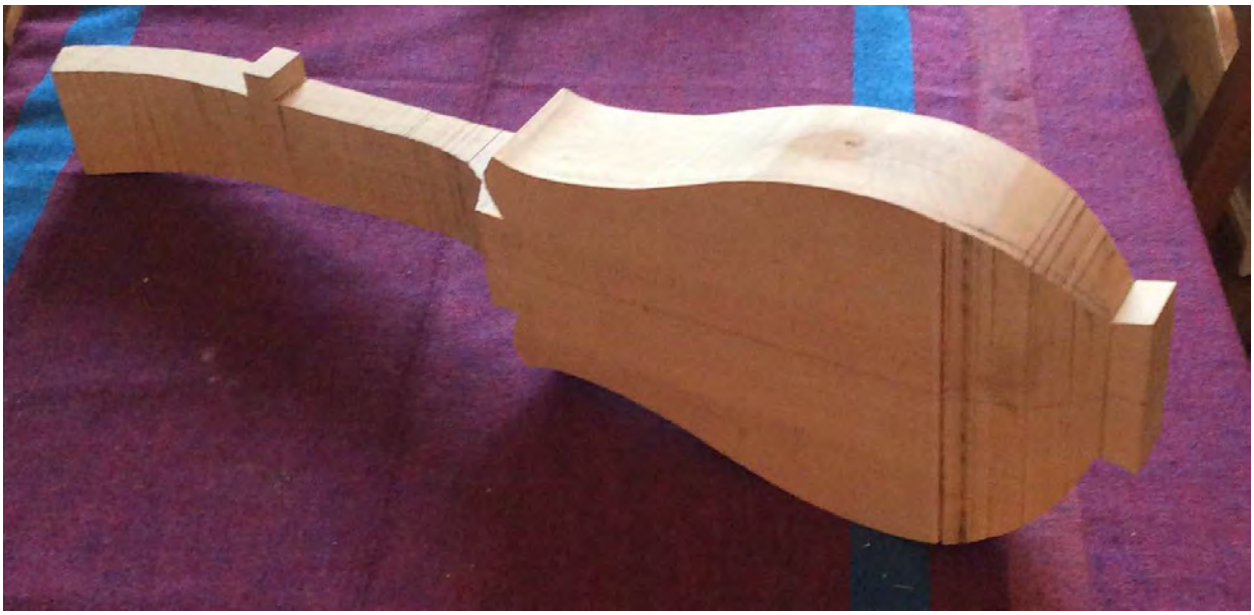
[14] For a description of these instruments and the others mentioned above, see Crane 1972, 15-17.

[15] For the former, see Tiella 1975; for the latter, Crane 1972, 16.

6.5.2 Woodworking Stages:



After the body and peg-head were finished, the sound-board was glued on to the body. The frets were then added, in different stages of experimentation. For this purpose, the cetra was constructed with the possibility of exchanging fingerboards; the bridge and the nut can be lowered or raised (or replaced) to allow further fret experimentation. The photo below shows the instrument with three additional fingerboards.

The photo above shows four different fret systems which could be tested in turn. Attached to the instrument is a fretless fingerboard onto which flat-topped diatonic frets have been secured with double-sided tape (using this tape is a practical way to be able to move fret positions easily). Lying in front of the cetra on the table are three further possibilities. The fingerboard at the bottom has chromatic, flat-topped frets, while the one just above it features saw-toothed diatonic frets (i.e., the right-hand edge of each fret is slightly higher than the left-hand edge). Above this is a set of saw-toothed frets in chromatic configuration and Pythagorean tuning.[16]

The photos below show these alternate systems installed on this cetra.

[16] See the discussion on temperament in Chapter 4 (4.3.9).

Frets: Chromatic, Flat-topped, equal temperament.

(Chromatic, Flat-topped, equal temperament)

Frets: Diatonic, saw-toothed, equal temperament.

Frets: Diatonic, saw-toothed, equal temperament.

Frets: Chromatic, saw-toothed, Pythagorean temperament.

Frets: Chromatic, saw-toothed, Pythagorean temperament.

These alternative fret configuration models were constructed for comparative purposes and were extremely useful for fine tuning conclusions about how historical cetre worked. A fifth type was also tested but is not shown here, the "one-fret" system shown on certain examples from the Assisi cycle **CE 15**. These instruments appear to have only one fret (or what might be called a second bridge) approximately halfway along their string length. They represent a separate category of necked chordophones in medieval iconography which includes other instruments such as vielles and citoles showing the same device. They have hardly been mentioned in organological literature, doubtless because of a lack of historical documents specifiying their musical function. We may speculate that such instruments were effectively string drums, providing a rhythmic ambience appropriate to certain types of social ritual. With open strings possibly tuned in octaves and fifths, they produced a chordal carpet of sound which could be octavated according to the acoustic requirements. Their musical purpose had nothing to do with playing melodies, although they externally resembled instruments that usually did; they apparently fulfilled an important function in specific formal social occasions.

6.5.3 Practical Assessment of Instrument: The pegs, anchored on the curved surface of the peg-head, together with the thick shafts of the pegs, make it quite difficult to tune the gut strings. A flat surface for the front of the peg-head might produce a more stable surface to anchor the pegs, and this surface could be angled back at a somewhat sharper angle to avoid that pegs furthest away from the nut have no angle of string going down over nut to securely hold the string in the groove of the nut. These pegs would need a special tuning device, for example, a stick with a recessed hole at the bottom that could be placed over the handle of each peg for practical tuning function. The pegs look aesthetically too big in comparison to the size of the peg-head.

Neck/peg-head: there is too much wood on peg-head and neck, and the neck profile is to massive, that is, too hard for left hand to hold. Also it adds a ridiculous weight to that part of the cetra, making it unbalanced. As regards the body, the sides are perhaps too incurved in comparison to the sculpture.

Both the nut in the bridge are too massive and bulky. This is surely related to the medium of stone carving. Such a massive bridge does not effectively conduce string vibration to the sound-board. Also, it is not logical for the nut to be so large, it serves absolutely no purpose except to add unnecessary weight to the instrument. In this case then certain features on the instrument are clearly exaggeratedly large because of the medium of stone, and this must be compensated for when building the instrument. Stone sculpture compromises real proportions of details. Details may also be exaggerated for viewing from afar.

This instrument is from the second half of the 13th-century. It features, very prominently, a bordun string or strings, i.e., off the neck. The bordun is an important structural detail which links the cetra with the vielle. In the case of **CE 5**, a substantially earlier source, the cetra has no bordun, while the vielle next to it does. By the time of the Franciscan-era sources **CE 8, 10, 12, 14** and **15**, the bordun had become standardized. There were, however, two distinctly different versions of a cetra with a bordun: one with 12 strings, and one with three or four courses of strings, including the bordun.

The Antelami sculpture, **CE 5**, has a vielle and a cetra, as mentioned above. The vielle has three strings on the fingerboard and one bordun string. The cetra, meanwhile, has four strings on the fingerboard, which is considerably wider than its vielle counterpart. The wide-fingerboard trend will continue through the 13th c. and beyond, all the way into the 16th-century. It is a salient characteristic of this instrument.

An instrument with 12 strings clearly needs a wide fingerboard, whereas an instrument with four strings does not. **CE 5** is a stone carving, with four carved single strings. **CE 8** is also a stone carving, with no strings but with 12 carved pegs. Two other sources showing the same instrument with 12 strings are **CE 10** and **CE 12**, and these are frescoes where the medium does not presume constraints upon what is depicted, compared to stone carvings.

I therefore would suggest that such wide-necked cetra can be assumed, whether the artist chose to specify it or not, to have had multiple strings; meaning, double courses or in some

cases perhaps triple. Therefore, an instrument shown with 12 pegs could be taken to have a minimum of four triple courses, or five courses with 3×2 strings and 2×3 strings, or six courses of two strings each. These are the choices for a 12-stringed instrument, including this one of the Ferrara Duomo.

The fingerboard models that were tested have provided a hands-on opportunity to examine how different tunings work with them, and this in turn has fine-tuned ideas taken from the theoretical section of this work concerning the presence of the bordun on the Franciscan cetra.

A Parisian chordophone of the 13th c. with a bordun string was the vielle. Jerome of Moravia lists three different tunings for the instrument, starting with a vielle featuring a single bordun and two pairs of stoppable strings on the fingerboard: d / Gg / d'd'. This tuning is "re-entrant": as defined in **Chapter 4**, "re-entrant" indicates that string pitches do not consistently ascend (or descend) as one crosses the four strings moving from one side to the other. The bordun in Moravia's first tuning is a 5th higher than its neighbor string, even though it is the last string of the series. Vielle players had at least three things they could do with a bordun string: pluck it with the left-hand thumb for rhythmic accent, bow it, or use a ring worn on the thumb to change its pitch when bowed.

Moravia's second tuning, similar to the first but with all strings on the fingerboard (no bordun), is an expanded version of the first tuning, plus a top string a 4th higher than the highest string of Tuning 1: d / Gg / d' / g'. For a player who is familiar with the first tuning, this tuning brings access to more or less all pitches in *musica recta*, and many *musica ficta* pitches as well.[17] This tuning, when compared to the first, shows that some viellists wanted and needed to be able to play vocal-style single lines, to participate in polyphony in a contrapuntal way.

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[17] See Page 1986, 128-131, for a discussion of Moravia's tunings.

Of possible relevance for the Franciscan cetra, with its bordun, is Moravia's contemporary treatise describing the re-entrant tuning of the bordun. We should not dismiss the possibility that the Franciscan cetra already had a re-entrant tuning, providing the background for the later re-entrant cetra tuning without bordun (whether one interprets Tinctoris' cetra tuning as re-entrant, or does not find that meaning in his text; by Lanfranco (1533), the six-course cetra in any case has a re-entrant tuning).

The presence of the bordun string on the Franciscan cetra strongly suggests that the string material was gut, not metal.

To conclude this chapter, the practical playing of the four constructed cetre has demonstrated the way forward to further knowledge about this fascinating instrument. Hands-on "doing" will confirm or deny suppositions that have emerged from theoretical sources, or sources from the visual arts.

POSTLUDIUM

My path forward with the cetra in performance will doubtless be an ongoing process of fine tuning both my ideas that have now been forged, and my boxes of wood and string that have been carved and glued together. What seemed like an endlessly long period of collecting, searching, reading, dreaming and making music finally crystallized into a coherent study of one single medieval plucked instrument type.

A retrospective glance from my current position: at the outset of the doctoral study, the trajectory of research could have taken many possible directions. The two mainstream necked-chordophones of the Gothic and Renaissance periods, the gittern and the lute, would both have been logical targets for me and it would have been easy to devote a697 dissertation to either.

Of these two, the second (lute) seemed almost too familiar. I have played it and given lessons on it as my daily bread for more years than I care to count. Lute practice is by now a kind of meditation exercise, or yoga, for me. It is a familiar landscape of well-worn routine, but such easy familiarity, I felt, might not offer the most stimulating environment to learn something new. I did not wish to become a languishing resident of a lazy academic place, reminding me of an 18th-c. description of a place where nothing gets done:

> "A pleasing land of drowsy head it was,
> of dreams that wave before the half-shut eye
> and of gay castles in the clouds that pass
> forever flushing round a summer sky."

James Thomson, Castle of Indolence (1748)

This would have been the path of the lute as a dissertation topic. A second road was that of the gittern, which at one moment seemed to beckon me, then abruptly appeared to be less enticing. While there are certainly opportunities for understanding the history of the gittern more fully, it seemed ultimately to be a pale comparison to the cetra in terms of offering a chance to traverse relatively uncharted research territory.

And then I recollected, faintly at first, the call to arms issued by Emanuel Winternitz so many years ago, to find instrument images, cetra images, with the eyes of an art historian. It was a noble call that, decades later, had gone unanswered. I remembered the obvious joy that this man had in trying to figure out how to read musical instruments as symbols in paintings. I recalled the almost childish rapture that Winternitz wrote of, upon finding his "missing link" 6th-c. mosaic of a shepherd with a long-necked lute with.....WINGS!.... (**Pl. 29** in this study). It was indeed an infectious feeling of joining a crusade-like journey to untold mysteries of ancient shapes, tales and sounds, like the brother who joins the League in Hermann Hesse's *Journey to the East*. I began to feel a genuine sense of responsibility to respond and take up the banner. If not me, then who?

During the course of the cetra research, I have literally examined thousands and thousands of images. The accessibility to visual material has, in our life-time, become exponentially greater with every passing year thanks to the internet. The resources at our fingertips are more than mind-boggling.

It occurred to me during my study all of this finger-tip access to information resources brings a kind of danger: that the greater the access we have to historical material, the greater the chance that we do not really understand it. We concentrate on superficial levels of historical information and miss the chance to go deeper. We focus on artifacts and ignore the ideas behind the artifacts. And nowhere is there a greater risk of doing this than with the study of music iconography, where, too often, we simply concentrate on the external form of an instrument.

I tried, during my iconographical labors, to be able to account for each visual composition by examining the world view that created it. Gradually my ideas about modern music performance (or better said, performance practice) changed, but not in the way that one might expect. I realized that many modern performers of early music are blissfully unaware of perhaps the central component of any artistic enterprise: the aesthetic behind it.

The reason for this is that historical aesthetic principles are, by and large, not part of early music education today. If students spent half as much time studying art history and literary history as they do music theory and playing scales at the speed of light, they might begin to be able to get inside the mindset of a culture of 500 years ago. There is no better way to do this than to study the visual arts of such a culture, for the saying is true that "a picture is worth 1000 words".

What I have learned from looking at thousands of pictures of scenes of music-making, is that modern musicians have little sense of different aesthetical principles of different periods. No self-respecting art historian would dare to approach Michelangelo's David with the same set of rules for interpretation as those used to approach the David of Gian Lorenzo Bernini, created more than a century after the work of Michelangelo. Yet music students today are effectively educated to play the music of 15th-c. Italy with the same approach and style as the music of 17 century Italy. There is, sadly, no part of their education devoted to instilling any sense of aesthetic accountability. A one-size-fits-all approach is applied to music created over a period of 500 years. This to me is as depressing and alarming as it is impressive, and in truth I owe this new perspective on performance practice in early music to long hours of study in the realm of art history.

Other than this observation, I cannot say what the research of the last five years has taught me; ask me that question in five or ten years and I will be able, if I am still here, to give an answer with more conviction. I do know that I now have a coherent birds-eye view of an instrument which I had previously been able to view only in fragments. Each higher level

of knowledge that I gained access to was hard-won, with nothing a foregone conclusion, and no revelation a casual one. Nothing came for free.

On Landini's tombstone at San Lorenzo in Florence, the inscription reads, to paraphrase, “His ashes lie here with us, his Soul flies above the stars”. The movements of Landini’s soul above the stars are surely choreographed to a soundtrack of the cetra, for there is no other private and consoling lyre which is more Italian than this one.

SUMMARY

A musical instrument of substantial importance in the history of Christianity, specifically in the visual arts and music culture of Romanesque, Gothic and Renaissance Italy, is the subject of the present study. The cetra (in Italian, *cetra*, also spelled *cetera*; in Latin, *cithara*) was the forerunner of the stringed instrument known in English since the 16th-c. as "cittern". Because no historical artifacts or specimens predating the 16th c. have survived in instrument collections or museums, the first objective of this research has been to establish a definitive catalog of iconographical material featuring the cetra. The catalog is comprised of 52 entries, each entry referring to a monument of Italian visual art, in any medium, from c. 1100 - c. 1535. Numerous entries feature multiple depictions of this plucked instrument, bringing the total number of *cetra* images to well over 100 (more than half of which hitherto unpublished in organological or music history literature).

The field of iconographical data presented in the catalog is then analyzed, together with relevant literary and music theory sources from the same period, to give a definitive account of the instrument's morphology, evolution, construction, cultural identity and musical function. The conclusions thus arrived at are finally tested and put into practice on stage: four cetre have been built for this research project by three different luthiers, and have been used in concerts of early Renaissance music given in 2017/2018.

Historians, musicologists and players of medieval and Renaissance instruments may be startled by some of the essay's conclusions, which both support and oppose current thinking on many aspects concerning the history of the cetra/cittern: regarding its relation to the citole, which until now has been seen as the predecessor of the cetra; regarding the role of the instrument in the Christian Church, which adopted the cetra as its own; and regarding the background of physical characteristics, such as the wooden block frets, which until now have remained unexplained in origin and musical function.

This study provides answers to long-unanswered questions about a chordophone which time has forgotten…a stringed instrument recalling Classical Antiquity, and one of quintessential importance to both Christians and Humanists: made in Italy.

SAMENVATTING

Dit onderzoeksproject behandelt de historische positie van een muziekinstrument dat van groot belang is geweest in de geschiedenis van het christendom, in het bijzonder in de visuele kunsten en muziekcultuur in Italië in de periode van de Renaissance, de Gothiek en de Romaanse tijd. De *cetra*, ook gespeld als *cetera*, en in het Latijn als *cithara*, was de voorloper van het snaarinstrument dat in het Engels sinds de 16e eeuw aangeduid wordt als de *cittern* (in het Nederlands vaak als cister). Omdat er geen historische exemplaren van dit instrument in musea of instrumentenverzamelingen aanwezig zijn, was het mijn eerste taak in dit onderzoek om een definitieve catalogus te maken van iconografisch materiaal van, over en rondom de *cetra*. Deze catalogus bestaat uit 52 onderdelen die elk een kunstwerk (in verschillende media) uit het Italië tussen ca. 1100 – ca. 1535 tonen. Tal van 'lemma's' laten meerdere afbeeldingen van dit tokkelinstrument zien waardoor het totale aantal getoonde instrumenten de 100 verre overschrijdt. Meer dan de helft is tot nu toe noch in muziekhistorische, noch in organologische geschriften ooit gepubliceerd.

Het gehele pakket aan iconografische data werd vervolgens geanalyseerd, met behulp van relevante literaire en muziektheoretische bronnen uit hetzelfde tijdvak. Hierdoor kon een gezaghebbend verslag worden uitgebracht van de morfologie, de ontwikkeling, de constructie, de culturele identiteit en de muzikale functies van het instrument. De aldus bereikte conclusies werden daarna getest, en voor en op het podium in praktijk gebracht: er zijn voor dit onderzoeksproject vier *cetre* gebouwd door drie instrumentenbouwers en deze zijn in 2017 voor het eerst gebruikt tijdens concerten met muziek uit de vroege Renaissance.

Historici, musicologen en spelers van middeleeuwse en vroeg-renaissancistische instrumenten zijn wellicht verbaasd over de conclusies van deze dissertatie, aangezien zij tot op zekere hoogte ingaan tegen bestaande denkwijzen ten aanzien van tal van aspecten van de geschiedenis van de *cittern*, zoals zijn relatie tot de *citole*, die tot nu toe werd gezien als de voorloper van de *cetra*; tevens aangaande de rol van het instrument in de christelijke kerk uit die tijd, die zich de *cetra* had toegeëigend; maar ook op het

terrein van de fysieke karakteristieken van het instrument zoals de houten blok-fretten, voor wier oorsprong en muzikale functies tot nu toe geen verklaring kon worden gegeven.

De onderzoeksresultaten verschaffen antwoorden op vragen die lang onbeantwoord zijn gebleven: het gaat om een instrument dat door de tijd is vergeten, een snaarinstrument dat de Klassieke Oudheid in herinnering roept, een instrument dat van doorslaggevend belang is geweest voor zowel christenen als humanisten, en .... afkomstig uit Italië.

APPENDIX I - Catalog of Related Sources: Visual Arts

Related sources of relevance to the study of the cetra, although they do not fulfill the criteria for identification as proper examples of that instrument, are given here.

Example	Source	page
1	Madrid Apollo	706
2	Montfaucon Muse	708
3	Zwiefalten Passionale	710
4	MS lat. 2508	712
5	Mantova Psalter	713
6	Cappella Palatina	714
7	Rylands Beatus	716
8	Nepi Peacocks	719
9	Morgan Beatus	721
10	Fendulus	723
11	Morgan David	726
12	Hamilton Bible	729
13	Mantova S Francesco	730
14	Paris chitara	731
15	Berkeley Treatise	732
16	Magister Theodoricus	733
17	Met Museum	734
18	Salone della Ragione	736
19	Riccardiana Virgil	738
20	Violeta Caterina	740
21	Mantova Mantegna	742
22	Raphael drawing	744
23	*Hypnerotomachia*	746

24	Mantegna bowed cetra	748
25	Castelfranco	749
26	Francesco Francia	750
27	Nardo di Cione	753
28	Cleveland *tazza*	756
29	**CE 40** copy (?)	759
30	Louvre David	760
31	Brescia fresco	762
32	Cortona bowed cetra	765

Ex. 1

Source: Madrid, Museo Arqueológico Nacional, Apollo (Rome, 2nd. c.?)

Artist: unknown

Published: Grunfeld 1969, Pl. 9

Relevance: Dating? General similarity to **CE 50**.

Comment: Grunfeld 1969, 14, mentions questionable authenticity of the statue, without any further specifics or sources. If the sculpted instrument is later, it must be from before the 17th c., because an existing German zither has virtually the same shape and was very likely copied from this sculpture. This zither belongs to the collection of the museum of the Cité de la Musique in Paris, inventoried as E. 1652. Photos of this instrument are

available at <http://collectionsdumusee.philharmoniedeparis.fr/doc/MUSEE/0158061>, (accessed 13.01.2018):

Also note the general similarity of body form with **CE 50**, a source dated 1526.

Ex. 2

Source: Bibliothek der Universität Heidelberg: Montfaucon, Bernard de, *L'antiquité expliquée et représentée en figures / Antiquitas explenatiore et schematibus illustrata, Supplément Tome Premier: Les dieux des grecs et des romains / Supplementum Tomus Primus: Dii graecorum et romanorum*, Paris 1724, XXXIV. Pl. du Tom. I.

Artist: unknown

Published: Photo source: <http://digi.ub.uni-heidelberg.de/diglit/montfaucon1724/0225>

Relevance: Antique model for Humanist cetra (?), including kollopes-frets

Comment: Labelled as Number 6 under the title "Apollon Soleil Et Les Muses", the statue shown in this engraving was described by Montfaucon as being in Rome, where he presumably saw it. Further information about the sculpture, including its history since 1724, has eluded me. The strings appear to pass over elongated frets before being fixed at the upper end of the instrument, although it is unclear whether the sculptor's intention was to depict functional frets. Could this monument have been accessible to painters in Quattrocento Rome as a model for study, influencing such works as **CE 24**?

Ex. 3

Source: Württembergische Landesbibliothek Stuttgart: Cod. bibl. 2° 56-58 (Passionale, Zwiefalten Kloster c. 1120-1135)

Artist: unknown

Published: Nickel 1972, Pl. 36

Relevance: Dating from the 12th c. with Italian influence is of interest, although the lack of shoulder horns and neck length may suggest more relevance for Spanish Beatus instruments, either as an influence upon this image, or that the Spanish instruments and this source share a common influence from Byzantine waisted forms transmitted via Italy. See discussion of the Beatus sources in **Chapter 1**, 126.

Comment: South German provenance showing Italianized Byzantine influence, according to Borries-Schulten 1989, 460. Waisted body form shows distinct Byzantine influence (compare **Pl. 73**, Bristol Psalter) and possibly earliest occurrence of round sound-hole?

This work is a collection of legends of saints, listed in the order of feast days of the church year, including this miniature from the first volume, i.e. winter section. The scene shows St. Pelagia of Antioch to the left, riding a donkey and holding a lyre in Alemannic style, and two musicians to the right with harp and necked chordophone.

Ex. 4

Source: Paris Bibl. nationale, MS lat. 2508, f. ov (IIv) (Psalm commentary, Italy 12th c.)

Artist: unknown

Published: Bachmann 1969, Pl. 23 (Photo source: Bachmann); Seebass 1973, 183, Pl. 105.

Relevance: This miniature shows an evolutionary connection of the vielle with the fingerboard lyre played on the shoulder with a bow. It also shows the close connection between the early vielle and the cetra.

Comment: Compare with **Pl. 71**.

Ex. 5

Source: Mantova, Bibl. civica, PS C III 20, f. 1v (Psalter, Italy 12th c.)

Artist: unknown

Published: Bachmann 1969, Pl. 26; Seebass 1973, 183, Pl. 106. (Photo source: lessingimages.com).

Relevance: This vielle is close to the previous example (Ex. 4), without the upper arm that is seen in Ex. 4.

Comment: Compare with **CE 1.**

Ex. 6

Source: Palermo, Cappella Palatina (ceiling painting, Sicily, mid-12th c.)

Artist: unknown

Published: Kapitaikin 2011

Relevance: Spade-shaped body, shares formal similarities with surviving Byzantine *pandurae* (**Pl. 37**).

Comment: Kapitaikin: "The study presents new stylistic and iconographic evidence to show that the painters of the ceilings came mainly from Fatimid Egypt, and that the paintings could reflect also some impact of the Christian arts of that country, if not the

actual participation of Coptic artists in their production….The 'Islamicate' – rather than Islamic – ceilings and their imagery were thus adapted to the Christian setting within the palatine chapel of the Norman monarchs."

Ex. 7

Source: Manchester, The John Rylands University Library, Latin MS 8, f. 89 (Rylands Beatus, Burgos?, c. 1175)

Artist: unknown

Published: Nickel 1972, Pl. 35; Klein 1990; (Photo source: < http://enriqueta.man.ac.uk/luna/servlet/detail/Man4MedievalVC~4~4~989601~142710?qvq=q:MS%2Blat%2B8&mi=4&trs=74> accessed 10.01.2018)

Relevance: See section on Beatus miniatures in **Chapter 1,** 126, and comments to Ex. 2 of this Appendix. These Spanish *cithara* forms are not cetre, per se, but are within the wider sphere of influence of the cetra.

Comment: One of the Beatus manuscripts from northern Spain, generated from the Apocalypse commentary *Beatus Super Apocalypsim* by Beatus of Liébana (750-798). Note similarity with **CE 6** concerning peg-head angle (see Comments to **CE 6**).

Ex. 8

Source: Nepi, Basilica di Sant'Elia (Apocalypse frescoes, Italy 12th c.

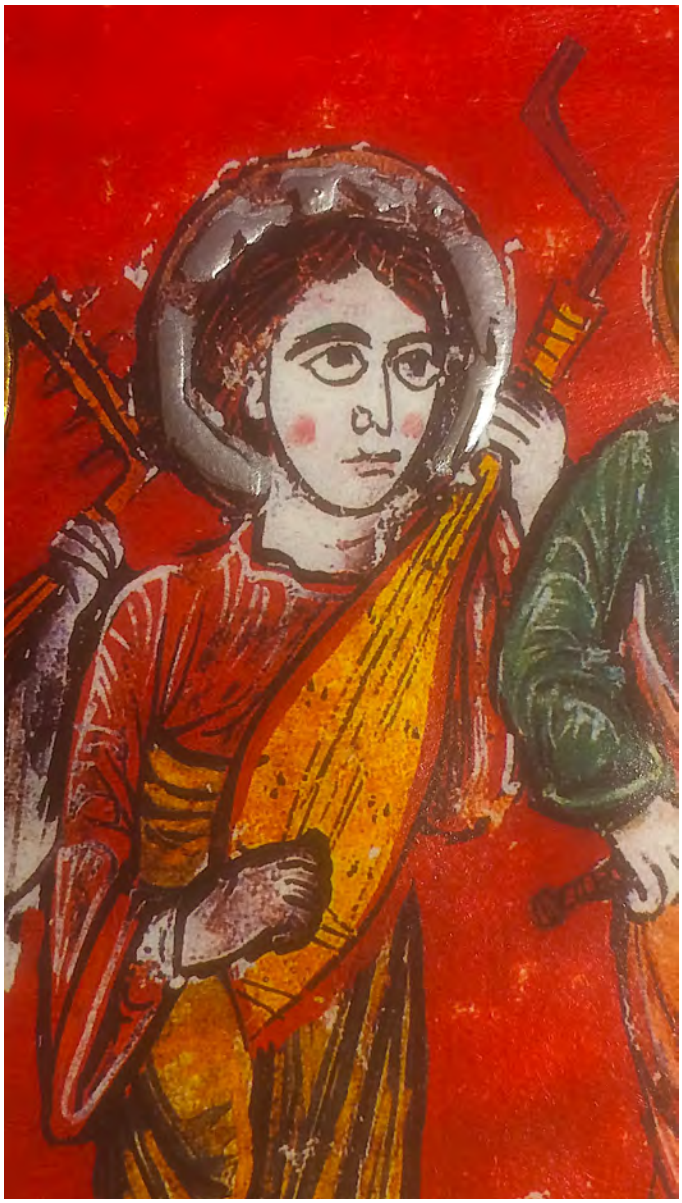
Artist: unknown

Published: Photo source: Author.

Relevance: Are these images in the border medallions musical instruments?

Comment: Although they seem to be necked chordophones with horned shoulders, a close inspection reveals that these are not musical instruments! Rather, these are peacocks, Christian symbol of immortality.

Ex. 9



Source: New York, Morgan Library, MS 429, f. 112 (detail, Beatus manuscript, Toledo? 1220)

Artist: unknown

Published: Young 1984

Relevance: Wooden frets (?)

Comment: Necked chordophone showing wide-fretted fingerboard - artistic convention for equal-width fingerboard-peg-head? For the context of the source, see above Ex. 2 and 6, as well as **Chapter 1**, 126.

Ex. 10

Source: Paris, Bibliothèque Nationale, Ms. latin 7330, f. 6 CHECK, (Georgius Zothorus Zaparus Fendulus, *Liber astrologiae*)

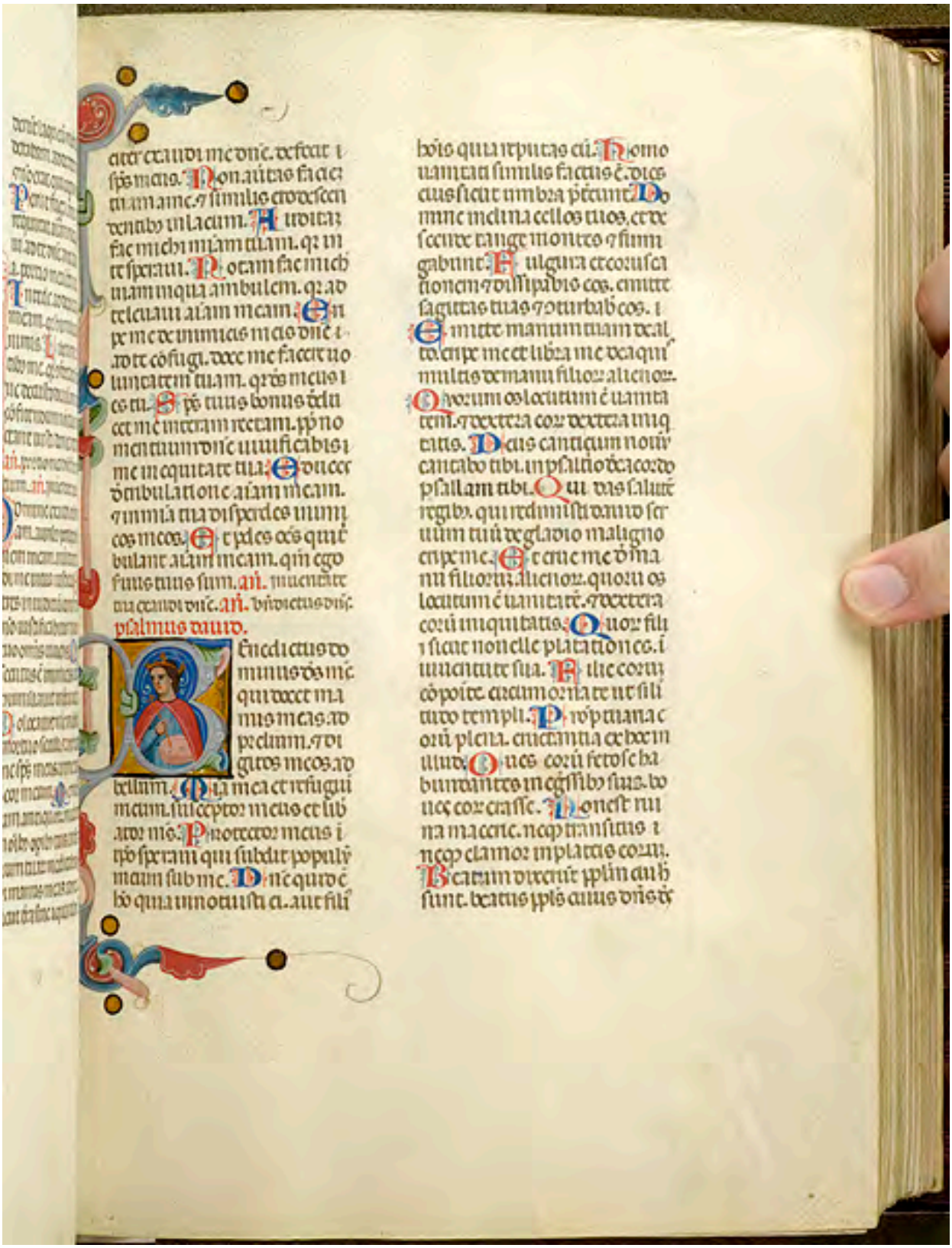
Artist: southern Italy or Sicily, 2nd quarter 13th c.

Published: Blažeković 1997

Relevance: Possible cetra candidate

Comment: This instrument might be categorized as a cetra form, or possibly vielle without a bow. The second set of perpendicular lines to the strings, close to the neck, may be an indication that this instrument's musical function was that of a string drum, and that it was not used for melodic play. Further evidence is needed to confirm such a function.

Ex. 11



aut ceciderit me domine. defecit i
spiritus meus. Non auferas faciem
tuam a me. et similis erio descen
dentibus in lacum. Audiam
fac mihi mane misericordiam tuam. quia in
te speravi. Notam fac mihi viam in qua ambulem. quia ad
te levavi animam meam. Eripe me de inimicis meis domine. ad
te confugi. Doce me facere voluntatem tuam. quia deus meus es
tu. Spiritus tuus bonus deducet me in terram rectam. propter no
men tuum domine vivificabis me in aequitate tua. Educes de
tribulatione animam meam.
et in misericordia tua disperdes inimicos
meos. Et perdes omnes qui tribulant animam meam. quoniam ego
servus tuus sum. ant. Inventus est
in civitate domini. ant. Benedictus dominus
psalmus dauid.

Benedictus do
minus deus meus qui docet ma
nus meas ad
pugnam. et digitos meos ad
bellum. Misericordia mea et refugium
meum. suscriptor meus et liberator meus. Protector meus et in
eo speravi qui subdit populum
meum sub me. Domine quid est
homo quia innotuisti ei. aut filius
hominis quia reputas eum. Homo
vanitati similis factus est. dies
eius sicut umbra praetereunt. Do
mine inclina caelos tuos. et de
scende tange montes et fumi
gabunt. Fulgura et conturba
bis eos. emitte
sagittas tuas et conturbabis eos. Et
emitte manum tuam de al
to eripe me et libera me de aqui
multis de manu filiorum alienorum.
Quorum os locutum est vanitatem. et dextera eorum dextera iniq
uitatis. Deus canticum novum
cantabo tibi. in psalterio decacordo
psallam tibi. Qui das salutem
regibus. qui redimisti David ser
vum tuum de gladio maligno
eripe me. Et erue me de ma
nu filiorum alienorum. quorum os
locutum est vanitatem. et dextera
eorum iniquitatis. Quorum fili
i sicut novellae plantationes. i
uventute sua. Filiae eorum
compositae. ornatae ut simili
tudo templi. Promptuaria e
orum plena. eructantia ex hoc in
illud. Oves eorum fetosae ha
bundantes in egressibus suis. bo
ves eorum crassae. Non est ruina maceriae. neque transitus. et
neque clamor in plateis eorum.
Beatum dixerunt populum cui hoc
sunt. beatus populus cuius dominus

Source: New York, Pierpont Morgan Library, MS M. 373, f. 53 (Psalm 144, Initial B)

Artist: Bolognese, 1310 - 1330

Published:

Relevance: Cetra?

Comment: David as musician. Note the prominent plectrum with Classical features (pointed tip, trefoil end), which is not a typical lute plectrum. Identification as cetra is conjectural, however the detail of the plectrum lends credence to the idea. For examples of pointed plectra on Classical sculptures, see Vendries 1999, 161-165.

psalmus dauid.
bellum.
meum.

Ex. 12

Source: Berlin, Kupferstichkabinett MS 78 E 3, f. 463 (Hamilton Bible)

Artist: Naples, c. 1345-1360; Cristoforo Orimina workshop

Published:

Relevance: These instruments show intriguing cetra-like features.

Comment: The depictions seem to represent hybrid instruments. The body shape is lute-like, perhaps closest to a gittern. The oval peg-head is seen on one clear cetra image (**CE 13**) and it occurs also on vielle depictions of 14th-c. Neapolitan miniatures. This provides an unequivocally negative answer to the question of whether **CE 13** could represent a thumb-hole instrument. The circle-of-holes rose type shown here is a cetra feature. All in all, these instruments have more cetra features than gittern features, and cetra would be the more expected instrument type within this specific iconographical context.

Ex. 13

Source: Mantova, Chiesa di San Francesco

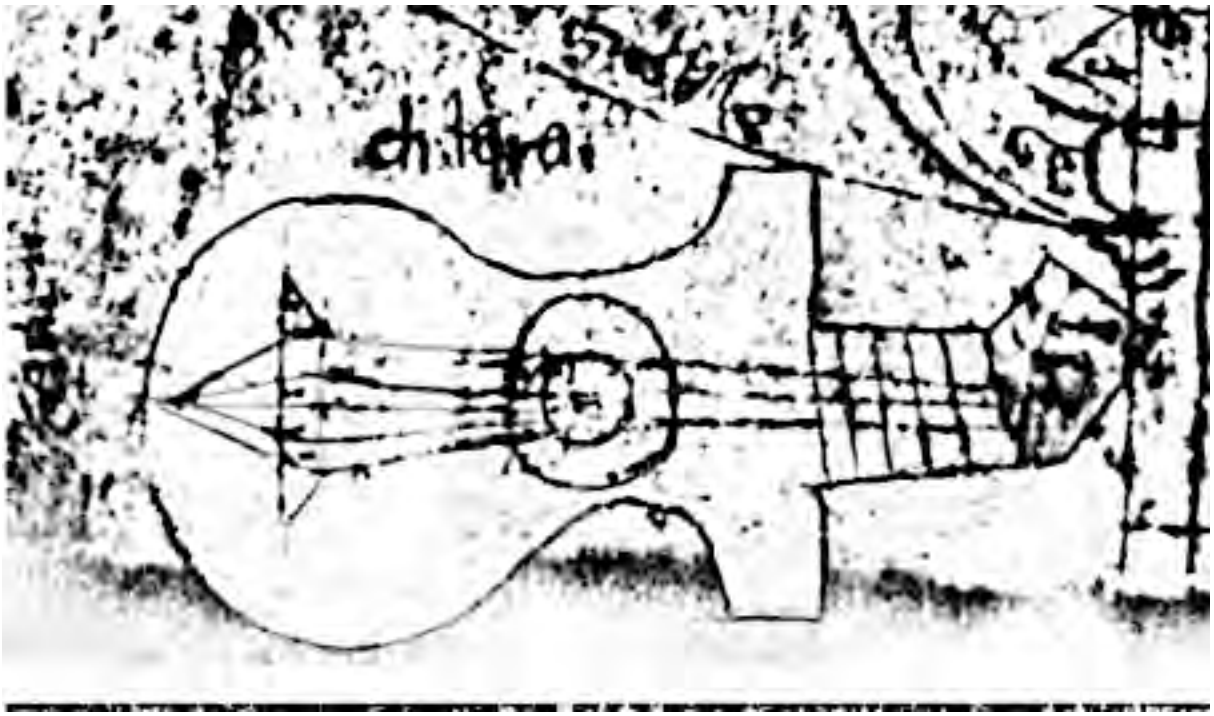
Artist: Tomasso da Modena, Serafino de' Serafini, 14th c.

Published:

Relevance: This interesting hybrid instrument combines a gittern with a psaltery.

Comment: Were such hybrid instruments real or purely artistic fantasy? This is a plausible instrument which could easily have been a new, experimental type which did not catch on. It may show a willingness for experimentation in 14th-c. lutherie.

Ex. 14



Source: Paris, Bibliothèque nationale, Ms lat. 7378A, f. 45v.

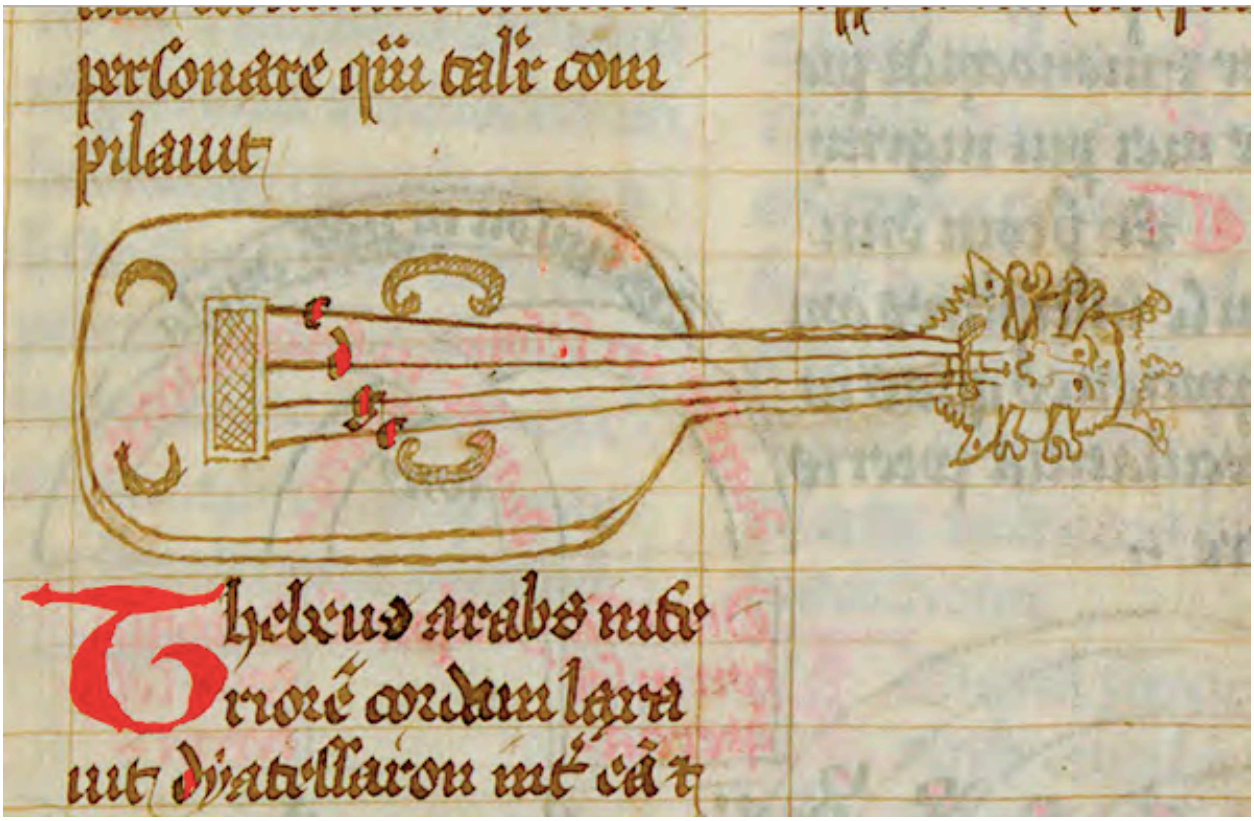
Artist: unknown (Paris, 1362)

Published: Young 2015, 98.

Relevance: possible *guiterne latine* (?)

Comment: Parisian provenance; Franciscan sphere (?); labelled chitara, which may suggest Latinized spelling (?).

Ex. 15



Source: Berkeley, University of California, Ms 744, p. 52.

Artist: unknown (Paris, 1375)

Published: Young 2015, 97.

Relevance: This depiction shows what may be a *guiterne latine* (?).

Comment: Parisian provenance allows speculation that this might have been produced within a Franciscan educational sphere. See **Chapter 4** for a discussion concerning this image.

Ex. 16

Source: Prague, Karlštejn Castle, fresco, Elders of the Apocalypse

Artist: Magister Theodoricus (c. 1360 - 80; known for Italian - French style)

Published: Young 2015, 99.

Relevance: Rectangular body shape; paired with *guiterne mouresque* (gittern).

Comment: There is clearly a connection between this body type and Ex. 17 and 20 shown below. Intended as plucked instrument, or bowed?

Ex. 17

Source: New York, Metropolitan Museum, collection of Irwin Untermeyer

Artist: Unknown, very probably north Italian (Milano?), early 15th c.

Published: Crane 1972, 16. Photo source: https://www.metmuseum.org/toah/works-of-art/64.101.1409/ (accessed 09.03.2018).

Relevance: This shouldered, rectangular-bodied chordophone has morphological similarities with Ex. 16.

Comment: Plucked or bowed? Similarity of form with Ex. 20 suggests use of bow.

Ex. 18

Source: Padova, Salone della Ragione, (1425 - 1440), Astrological cycle

Artist: unknown

Published: Beck 1999

Relevance: This may possibly represent an early example of a *viola da mano*.

Comment: The image is found under the month of October.

Ex. 19

Source: Firenze, Bibl. Riccardiana, MS Ricc. 492, f. 75 (Vergilius Publius Maro, so-called 'Riccardiana Virgil', *Aeneid*, 1450-1460)

Artist: Apollonio di Giovanni

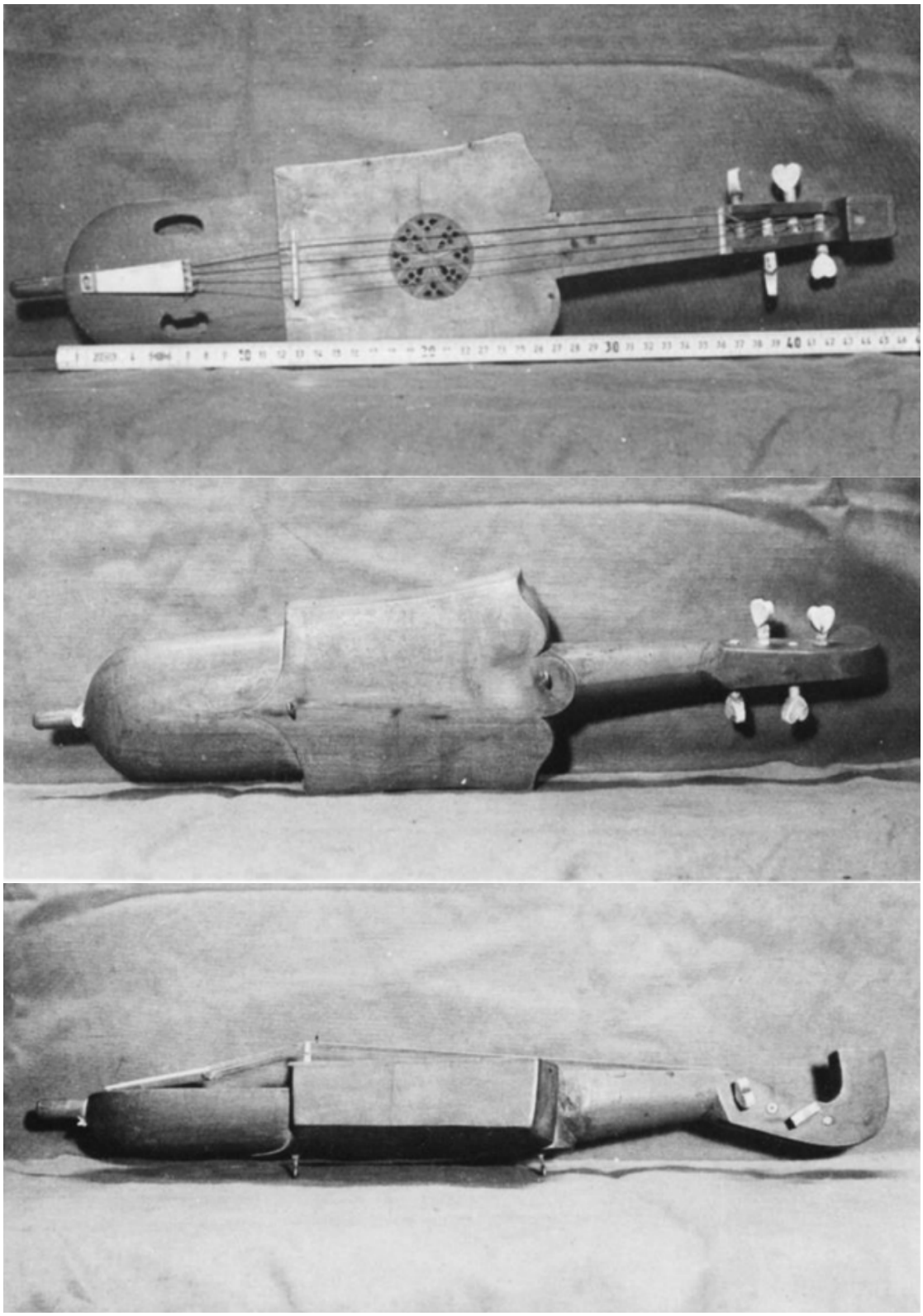
Published: Bowles 1977, Pl. 31; (Photo source);

Relevance: Singer with cetra (?)

Comment: In this miniature by Apollonio di Giovanni, a singer (*canterino*, identified also by his distinctive hat) accompanies himself at a feast with a plucked instrument (see detail below). This could be taken for an early viola da mano, or - given the peg-head - is it rather a cetra?

RIALVS
NISVS

Ex. 20



Source: Bologna, Chiesa del Corpus Domini: bowed instrument with 4 strings, so-called "Violeta of S. Caterina de' Vigri"

Artist: unknown

Published: Crane 1972, 17: Tiella 1975

Relevance: Square-shaped body is similar to previous examples.

Comment: The violeta was in the possession of S. Caterina when she died in 1463, according to a nun who knew her and wrote an account in 1492 (Tiella 1975, 60). It is not clear when the saint first had the instrument, which could also have been made sometime before the mid-15th century.

Ex. 21

Source: Mantova, Palazzo Ducale, Camera degli Sposi (ceiling vault, *Arion*, 1465-1474)

Artist: Andrea Mantegna

Published:

Relevance: Body shape is reminiscent of earlier Florentine sources.

Comment: Mantegna's studied works of the Florentine school, which would explain why this particular instrument form turns up in his work (compare **CE 20**, **23**, **46**). The form of the peg-head is vague; it is not a classic lute-type as seen, for example, on **CE 23**. If it carries lateral pegs, then a flattened sickle-shape as seen on a number of viola da mano images is a definite possibility. Frontal pegs, indicating a disc-form peg-head, do not seem to be in evidence here.

Ex. 22

Source: Oxford, Ashmolean 541

Artist: Raphael, preliminary sketch of Apollo and Muses on Mt Parnassus, 1507

Published: Winternitz 1979, Pl. 80 (photo source).

Relevance: End section of cetra (?) shown from behind, played left-handed.

Comments: The sketch apparently shows a cetra held by a Muse, shown from the back as she plays it. Although ultimately inconclusive, the projecting trapezoidal base and oval-shaped end of the body are features of the cetra. The back of the body might be taken to represent a bowl-shaped form, without articulated sides; again, the viewer is unsure whether this was the artist's intention. A lute would have longitudinal ribs, which here is not the case. All in all, the cetra remains the best guess for the instrument type glimpsed

here. This did not escape the careful eye of Winternitz, who proposed the cetra identification in the early 1950's.

Ex. 23

Source: Francesco Colonna, *Hypnerotomachia Poliphili*, (Venice, 1499), woodcut from Book I

Artist: unknown

Published: Denis 1944, Abb 121; Colonna 1999, 178.

Relevance: Stylized cetra?

Comment: Poliphilo and Polio with nymphs beside the Sacred Spring behind the Tomb of Adonis, with instruments "played by nymphs for metrical story-telling and dancing", lute, lira da braccio or viola, harp, and cetra (?). The first three of the instruments listed here represented in the woodcut by recognizably realistic images, but the cetra (?) shows less realism. The body has horned shoulders, but the strings are attached at the bridge, no frets are visible (there is hardly any neck to speak of), and there is no recognizable peg head

(the woodcut artist apparently had no realistic image or model of a cetra to refer to). The text refers to “lira” and “cithara” (Colonna 1999, 343).

Ex. 24

Source: Private collection Foresti, painting, oil tempera on poplar (Mantova, 1506)

Artist: Andrea Mantegna

Published: Photo source: https://hampel-auctions.com/a/Andrea-Mantegna-1431-Isola-Mantegna-bei-Piazzola-sul-Brenta-1506-Mantua.html?a=92&s=324&id=511252 (accessed 18.08.16).

Relevance: This bowed instrument has a cetra-form body, thin neck and peg-head with lateral pegs.

Comment: Many late 15th- and early-16th-c. depictions show cetra-shaped instruments being played on the shoulder with a bow. Some may be fretted, but I have never seen kollopes-frets on any example.
The spectrum of shape-types of bowed instruments increases markedly after the 14th c., and continues to increase in the first decades of the 16th century. In my opinion, an in-depth study is much needed to classify and trace the evolution of bowed instruments during these decades. The main forms include viola (vielle), rebec, lira da braccio, and violeta, but there are other lesser-known types such as the *cetera d'arco* (my term). The cetra and the viola were related types since at least the Romanesque period, as stated elsewhere in this work.

Ex. 25

Source: Casa Marta, Castelfranco (Veneto, c. 1510)

Artist: (Andrea Mantegna?)

Published:.

Relevance: Bowed cetra?

Comment: This represents an interesting bowed variant of a cetra with sharply-incut sides to accomodate the bow, and what may be a dovetail joint between the neck and the body.

Ex. 26

Source: Bologna, Chiesa dei Ss Vitale e Agricola, Altare della Madonna degli Angeli

Artist: Francesco Francia (c. 1450 - 1517/18)

Published:. (reference: Winternitz collection)

Relevance: This shape suggests a holly-leaf citole, which may be purely coincidental (?).

Comment: Bolognese-Tuscan

Ex. 27

Source: Firenze, Santa Maria Novella, Strozzi Chapel (Tommaso Strozzi), fresco, Paradise (Christ and the Virgin in Glory, 1354-1357).

Artist: Nardo di Cione

Published: Brown 1978; Brown 1985; Photo: http://www.wolffchronicles.com/wp-content/uploads/2015/06/20150622-45.jpg (accessed 05.11.2017).

Relevance: Brown 1986, 122: "guitar (sic)"; any relevance to the cetra is uncertain.

Comment: This deteriorated fresco shows an angel with a rectangular-bodied plucked chordophone of unusual shape, with squared upper shoulders and lower shoulders, presumably flat-backed. Only one side of the body is visible (the upper side, when held in horizontal playing position), and there is a subtle outward projection in the side above the position of the large soundhole on the soundboard. A neck and peghead, very faded, extend apparently out to the right of the body.
An explanation for the odd shape of the body is not straightforward, but a few possibilities come to mind. Because of the frequent pairing of cithara and psalterium in the Psalms (see **Chapter 1**), the bulging uppermost side of this instrument could suggest a psaltery-like body, at least on one side. The neck - if indeed it is a neck - appears to terminate in a frontal peg-head of similar form to the Giotto and Assisi examples, and there may be remaining outlines of block frets, in particular, projecting slightly past the upper edge of the neck, although one cannot be certain that this was the original form. The right hand seems to be holding a longish plectrum in a similar playing position to the neighboring psalteries. There looks to have been a bridge under the wrist with the remnants of strings passing over this to the end of the instrument.
Brown 1978, 131, called this a "guitar-like instrument....it may be the product of some modern restorer's fancy...." (although it does not appear to have been restored, and Italian art restorers, in general, take great pride in using respectful, non-molesting techniques of restoration which do not alter an image's form); in Brown 1986, 122, he refers to the same instrument as "guitar (sic)".

Ex. 28

Source: Cleveland, Museum of Art, Inventory CMA 1960.36, *tazza* (enamelled glass bowl) showing *putti* with instruments

Artist: Anonymous, Murano (Venice), 19th century

Published:. (reference: Winternitz collection)

Relevance: Cetra

Comment: According to the website of the Cleveland Museum of Art, this glass bowl was made during the 19th-century. The decoration shows a cetra, however, with certain structural details such as kollopes-frets, which are consistent with 15th-c. sources. That is to say, the artist who painted this bowl must have had access to a painting or other artifact which provided a model for the images of musical instruments shown on this bowl. If this bowl indeed comes from Venice, the question arises whether the painting in the Galeria dell'Accademia of Tolmezzo (**CE 37**) may have provided the models for musical instruments depicted on the bowl. The groupings of instruments played by angels in the painting show similarities.

Ex. 29

Source: unknown

Artist: unknown

Published: unknown

Relevance: Cetra

Comment: There is a clear relationship with **CE 40**; could this be a 19th-c. copy?

Ex. 30

Source: Paris, Musée du Louvre, Le prophète David dans la lettre "B" (late 15th-c.?)

Artist: anonymous

Published: unknown

Relevance: Cetra similarity

Comment: The instrument shown in this 15th-c. miniature of King David bears a superficial similarity to a cetra. It is a hurdy-gurdy with keys shown on the lower side of the neck, suggestive perhaps of kollopes-frets which, in the case of the cetra, be projecting out from the other side of the neck. The hurdy-gurdy normally featured a handle held by the right hand which turned the internal wheel to sound the strings, although a variant type was sometimes played with a bow as a keyed fiddle. In any case, iconographical examples of King David playing a hurdy-gurdy are much less common than other string instrument types.

Ex. 31

Source: Brescia, location unknown

Artist: Unknown (mid-16th c. or earlier, presumably restored?)

Published:

Relevance: Two instruments

Comment: The larger instrument may be a cetra with some similarity to **CE 33**, being played either with a large plectrum or possibly a small bow (?). The smaller instrument, bowed and held on the shoulder, also has some similarity to **CE 33**, including a border near the edge of the soundboard. The morphological relation between plucked and bowed forms is nicely presented in this image.

This source was provided by Peter Forrester, to whom I am very grateful for sharing it.

Ex. 32

Source: Cortona (CE 31)

Artist: Bartolomeo della Gatta

Published:

Relevance: Bowed cetra form

Comment: The proximity of the cetra with a bowed instrument (with tied-on gut frets) of similar shape again underscores the close relationship of the two forms. We note the similarity between this bowed instrument and Examples 17 and 20 of this Appendix.

The terminology for such a bowed instrument has thus far found little consensus amongst researchers. *Viola*, *violeta* or *lira* would be possibilities, while *cetra* would also be a logical name; *rebec* or a related form should not be excluded from consideration. While an in-depth examination of the terms for 15th- and early-16th-c. bowed instruments is outside the scope of the present study, further work is needed to determine which bowed instruments were in use in Italy during these decades, and what they were commonly called. Whereas the *lira da braccio* is the first bowed instrument to be associated in modern research with Humanist culture, one must recognize that other bowed instruments were used concurrently, so that it is but one of four or five types: the *vielle* (*viola*), usually with single strings and a bordun, more typically oval-shaped, but sometimes waisted; the *lira da braccio* with strings in courses (pairs) and a bordun pair of strings, with a waisted body; the rebec; the bowed cetra, and (possibly to be classified as a form of the bowed cetra), the instrument type associated with S. Caterina de' Vigri, Ex. 20 above.

APPENDIX II - A Selection of Italian Literary Sources

The following list of sources offers an overview to facilitate an impression of the use of the term "cetra" (or related spellings) within the context of Italian literature from the 12th - 16th c.; it has not been my intention to make anything like a complete catalog of references. The purpose of the list is also to make it clear that there is a wide range of meanings and contexts for the various cetra terms, some completely general and abstract, others quite specific to a real instrument. The presence of both should help to demonstrate the ubiquity of the term in Italian culture, also as a common contemporary object. This is not an in-depth linguistic study, for that has not been the purpose of this thesis, and it would require far more expertise than I am able to provide. The translations given here are not always unequivocal as regards their meaning, and some readers may disagree with the English translation which has been provided. Regarding the use of lyra or lira as a possible term indicating a cetra, see p. 11 (including footnote 18) and the Glossary.

The entries have been divided into types regarding their content:
Performative: including a description of a performance with the cetra.

Biblical: referencing the Bible, typically the Psalms.

Figurative: rhetorical or allegorical use of the word cetra.

Classical: referencing myth or other Classical stories.

Definitive: including a description of the physical form or another aspect of a cetra.

Legal: archival document made for legal purposes.

(12th century)

XII-1 (Performative)

Ritmo di Sant'Alessio, 119, pag. 22 (Anonymous, Marche, late 12th c.):

"Oveunque eranu iullare / tutti currunu per iocare / **cythari** cum timpani et sambuci / tutti gianu cantando ad alta voce."

("Everywhere were jesters / all running to play / cetre with drums and sambuci / all went singing in a loud voice.")

Edition: Contini 1960, 17-28.

(13th century)

XIII-1 (Biblical)

Officio ritmico e vita seconda (Giuliano da Spira, first half 13th c; text for Antiphon for Vespers, antiphon to Psalm 150):

"Al suono della tromba, del timpano, della **cetra**, del salterio"

("To the sound of the trumpet, drum, cetra, psaltery")

Edition: Gamboso 1985, 213-215. Beck 2005, 204.

XIII-2 (Figurative)

Proverbia pseudoiacoponici, 44, pag. 28 (Anonymous, Abruzzo, 13th c.):

"Quello ke non convèsete, guàrdate no lo fare: / Né mess'ad omo ladecu, né a pprevete saltare, / Né la spad'a la femina, né a mmasculu filare, / Né lo saltare all'asinu, né a bove **ceterare**"

("What is not related to your nature, do not do it / the layman doesn't say Mass, the priest does not dance / nor the sword to a woman, or spin wool by a man / nor a donkey dance, nor an ox play the cetra")

Edition: Bigazzi 1963, 26-39.

XIII-3 (Classical)

Novellino, 12, pag. 156.5 (Anonimo, Florence, 13th c.):

"Antigono prese la **cetera** e ruppela e gittolla nel fango, e disse ad Alexandro cotali parole: 'Al tuo tempo et etade si conviene regnare, e non **ceterare**'"

("Antigone took the cetra and broke it and threw it into the mud and said to Alexander thus, At this moment and at your age it is better to reign and not play the cetra")

Edition: Gualteruzzi da Fano 1572.

XIII-4 (Classical)

Novellino, 12, pag. 156.11 (Anonimo, Florence, 13th c.):

"Re Poro, il quale combatté con Alexandro, a un mangiare fece tagliare le corde della **cetera** a un **ceteratore** e disse queste parole: 'Meglio è tagliare che sviare: ché per dolcezza di suoni si perdono virtudi'"

("King Poro, who was fighting with Alexander, cut the strings of a cetra player's cetra, saying: It is better to do this than to leave the right path: because of the sweetness of sounds you lose virtue")

Edition: see XIII-3.

XIII-5 (Figurative)

Il Tesoro di Brunetto Latini volgarizzato da Bono Giamboni L. VI, cap. 4, vol. 3, pag. 21.8 (Anonymous, Florence, 13th c.):

"lo buono **ceteratore**, quando **cetera** bene, si è degno ch'egli abbia compimento di quell'arte.."

("the good cetra player, if he plays well, deserves to be recognized in that art...")

Edition: Chabaille 1878-1883.

XIII-6 (Definitive)

Arte della guerra di Vegezio Flavio volgarizzata, L. IV, cap. 21, pag. 166.3 (Bono Giamboni, Florence, 1292):

"La sambuca è detta a similitudine della **cetera**, perchè, secondochè nella **cetera** sono corde, così nelle travi che per lungo allato alla torre si pongono, sono funi..."

("The sambuca is said to be similar to the cetra because, where in the cetra you have strings, like this the beams that you put in the long side of the tower, are ropes...) (?)

Edition: Fontani 1815.

XIII-7 (Biblical)

De Ierusalem celesti, 167, pag. 633 (Giacomino da Verona, Verona, 13th c):

"E ben ve digo ancora en ver, sença bosia, / ke, quant a le soe voxe, el befe ve paria / oldir **cera** né rota, organ né simphonia / né sirena né aiguana né altra consa ke sia..."

("And I say to you truthfully without (?) / that when you hear his voice (it is so beautiful that?) / neither cetra nor rotta organ nor simphonia / nor a siren nor a wood nymph nor other thing that exists...")
Edition: Contini 1960, 627-637.

XIII-8 (Biblical)

Il Trattato di Virtù e di Vizi cap. 31, pag. 152.28 (Bono Giamboni, Florence, 1292):

"E però possono dire come disse Iob: «Convertita è in pianto la **cetera** mia, e gli organi miei in boci di guai..."

("And they can say like Job: My cetra has changed to weeping, and my organs to troubled voices...")

Edition: Segre 1968, 123-156.

XIII-9

L'Intelligenza Stanza 294 (Anonymous Tuscan, late 13th-early 14th c.):

"Audivi d'un leuto ben sonare
ribebe e otricelli e **ceterare**
salteri ed altri strumenti triati"

("I was listening to a well-played lute, rebecs and bagpipes and someone playing the cetra, psalteries and other instruments well-sounded")

McGee 2009, 59, translates **ceterare** as "small lute".
Edition: Berisso 2000.

(14th century)

XIV-1 (Legal)

Not. Marsilio Roverini di Padova (Marsilio Roverini di Padova, Padova, 1372):

"I maestri, abitanti a Padova, Francesco del q. Vanezio e Giovanni Razio del q. Simeone fanno fra loro società per insegnar a suonare i liuti e le **cetre**..."

("The masters, living in Padua, Francesco di Vannozzo and Giovanni Razio di Simeone make an association to teach and play lute and cetra…")[1]

Edition: Sartori 1977, p. 182.

XIV-2 (Performative)

Dittamondo L. IV, cap. 12.6, pag. 287 (Fazio degli Uberti, Tuscan, c. 1345-1367):

"E ciò ch'io veggio e per vero odo, impetro / ne la mia mente, e poi cosi lo noto / in questi versi con ch'io sono e **cetro**"

("And what I truly see and hear, I implore / my mind and after I can write it in these verses that I sing to the cetra")

Edition: Corsi 1952.

XIV-3 (Biblical)

Leggenda Aurea cap. 114, *Assunz. Maria* vol. 3, pag. 993:13 (Anonymous, Florence, 14th c.):

"Oggi la vergine beata ricevettoro i cieli rallegrando, gli Angeli gaudendo, gli Arcangeli giubilando, li Troni esultando, le Dominazioni salmeggiando, li Principati armonizzando, le Podestadi **ceterando**, li Cherubini e ' Serafini innizando e menandola infino a la sedia de la supernale maestade di Dio"

[1] Francesco di Vannozzo was a courtier who exchanged sonnets with Petrarch, Giangaleazzo Visconti, Marsilio da Carrara (brother of Francesco da Carrara, lord of Padova).

("Today the Heavens are receiving the Blessed Virgin, the Angels rejoicing, the Archangels rejoicing, the Thrones exulting, the Dominations praising with song, the Principles harmonizing, the Powers sound the cetra, the Cherubim and Seraphim singing hymns and caroling before the seat of the supreme majesty of God")

Edition: Levasti 1924-1926.

XIV-4 (Figurative)

Paradiso Canto XX, 22,3 (Dante Alighieri, Florence, c. 1315-1320):

"E como suono al collo della **cetra**
prende sua forma, e si com'al pertugio
de la sampogna vento che penètra
così, rimosso d'aspettare indugio,
quel mormorar de l'aguglia salissi
su per lo collo, come fosse bugio"

("And as the sound takes its form at the neck
of the cetra, and as the wind which enters the reed-pipe
takes its form at the finger-hole,
so, all delay of waiting abandoned,
the eagle's murmur rose up
through its neck, as if it were hollow")

Translation: Wright 1977, 27.

XIV-5 (Figurative)

Convivio I, cap. 9, 38.3 (Dante Alighieri, Florence, 1304-1307):

"si come non si dee chiamare **citarista** chi tiene la **cetera** in casa per prestarla per prezzo, e non per usarla per sonare"

(" as how we should not call a cetra-player someone who keeps a cetra in his house to rent out, as opposed to use it for playing")

Edition: Brambilla 1995, III, 1-456.

XIV-6 (Figurative)

Convivio I, cap. 11, 11 (Dante Alighieri, Florence, 1304-1307):

"sì come lo mal fabro biasima lo ferro apresentato a lui, e lo malo **citarista** biasima la **cetera**, credendo dare la colpa del mal coltello e del mal sonare al ferro ed alla **cetera**, e levarla a sé"

("for example, a bad blacksmith blames the iron supplied to him, trying to put the blame for a bad knife on the iron, and the bad cetra player blames the cetra and not himself")

Edition: see XIV-5.

XIV-7 (Classical)

Convivio II, cap. 1, 65.5 (Dante Alighieri, Florence, 1304-1307):

" sì come quando dice Ovidio che Orfeo facea colla **cetera** mansuete le fiere, e li arbori e le pi*etr*e a sé muovere..."

("thus Ovid says that with his cetra Orpheus tamed wild beasts and made trees and rocks move toward him...")

Edition: see XIV-5.

XIV-8 (Classical)

Trattato de regimine rectoris, cap. 29, pag. 38.18 (Paolino Minorita, Venice, 1313-1315):

"Enpremeramentre Apollo, lo qual fo reputadho grando domenedio appresso li Paganni, atrovà la **çétara**.."

("Firstly Apollo who was reputed as a great god among heathens found the cetra")

Edition: Mussafia 1868.

XIV-9 (Figurative)

Chiose alla Commedia di Dante Alighieri. Paradiso, cap. 20, 16-30, pag. 448, col. 1.13 (Jacopo della Lana, Bologna, 1324-1328):

"al collo de quello strumento che cum dide se sona, come **cedera**, o ver chitarra, o ver leuto o viola..."

("at the neck of that instrument that is played with fingers, such as cetra or gittern or lute or viola...")

Edition: Biagi 1939.

XIV-10 (Classical)

Metamorfosi d'Ovidio volgarizzate (libri I-V)., L. V, vol. 1, pag. 212:23 (Arrigo Simintendi, Prato, 1333):

"insino a qui una di quelle avea parlato sonando la sua **cetera**"

("until here one of those had spoken, playing her cetra")

Edition: Basi 1846; Basi 1848-50, 1-4.

XIV-11 (Classical)

Eneide volgarizzata, L. I, pag. 31.30 (Ciampolo di Meo degli Ugurgieri, Siena, c. 1340):

"Joppa col capo bello suona coll'aurata **cetera**..."

("Joppa with her beauty plays with golden cetra...")

Edition: Gotti 1858.

XIV-12 (Biblical)

Esposizione del Simbolo degli Apostoli, L. II, cap. 19, vol 2, pag. 308.29 (Domenico Cavalca, Pisa, c. 1342):

"E che egli delli canti, e delli suoni spirituali si contristi, e partasi, mostrasi in ciò, che sonando David la sua **citara**, cacciava lo demonio dal re Saul..."

("And that he [the devil] becomes gloomy and sad listening to songs and spiritual sounds, and departs, is shown in that David, playing his cetra, expelled the demons from King Saul...")

Edition: Federici 1842.

XIV-13 (Biblical)

Parafrasi pavese del "Neminem laedi nisi a se ipso" di s. Giovanni Crisostomo, cap. 16,pag. 78.26 (Anonymous, Pavia, 1342):

"gli salterion lo dexecordo laudi **cytare** organ cembali corni trombe nachare tympani zaramele sinfonie..."
("[Praise with] the psaltery of ten strings cetra organ cembali horns trumpets small drums cymbals shawms sinfonia...")

Edition: Stella 2000.

XIV-14 (Biblical)

Spirito Santo che dal ciel discendi /capitolo/, 72, 117 (Bosone de' Raffaelli da Gubbio, Gubbio, 1345):

"troppo averem che far considerando / a quante **cetr**'artiraran le corde"

("and we will have a lot to do considering / how many cetra must be tuned")

Edition: Allacci 1661, 114-21.

XIV-15 (Biblical)

Libro di varie storie, cap. 6, pag. 29.31 (Antonio Pucci, Florence, 1362):
"Anon fu il primo che trovasse **cetere**, organi e altri stormenti e Caino fu il primo lavoratore di terra..."

("Anon [? Jubal] was the first who made cetre, organs and other instruments and Cain was the first to work the ground...")

Edition: Varvaro 1957, 3-312.

XIV-16 (Classical)

Rime d'amore, 3.13, pag. 7 (Fazio degli Uberti, Tuscan, 1367):

"né contr' a Marzia d'Appollo le **cetre**..."

("nor against Marsyas of the cetre of Apollo...")

Edition: Corsi 1952, Vol. II, 3-20.

XIV-17 (Classical)

Expositione sopra l'Inferno di Dante, cap. 32, pag. 64.2 (Guglielmo Maramauro, Naples or Padova-Venice, 1369-1373):

"Le muse elexero, de' loro compagni, alcuni, [sì] che, con lo canto e col sono de la **citara** de Amfione, [Amfione] fornì el so murare."

("The Muses elected among their friends some, who with the sound of their singing to the cetra of Amphion, provided his building (moved the stones)"

Edition: Pisoni 1998.

XIV-18 (Biblical)

Sposizione del Vangelo della Passione secondo Matteo, cap. 21, par. 7, vol. 2, pag. 93.24 (Anonymous or Niccolò Montaperti o Casucchi? Sicily, 1373):

"eccu, la **citara** di la cruchi canta cum septi cordi, VII paroli, VII canti, VII virtuti bastanti ad omni homu lu quali cherca la via di Deu.."

("Here the cetra of the cross sings with seven strings, seven words, seven songs, seven virtues, that are needed by every man who is seeking the path of God...")

Edition: Palumbo 1954.

XIV-19 (Biblical)

Il Centiloquio, Prologo, par. 3, vol. 1, pag. 109.9 (Antonio Pucci, Florence, 1388):

"Tubal, il quale fu il primo inventore d'organo, di **cetere**, e di tromba..."

("Tubal, he who was the first inventor of organ, cetra and trumpet...")

Edition: San Luigi 1772-1775.

XIV-20 (Definitive)

Glossario latino-eugubino, pag. 108.6 (Anonymous, Gubbio, 14th c.):

"Hec lira, re id est la **cetra**."

("This lira, it is in reality the cetra")

Edition: Navarro Salazar 1985, 21-155.

XIV-21 (Classical)

«Cronaca volgare» isidoriana, pag. 144.20 (Anonymous, Abruzzo, 14th c.):

"Loth regnao anni LXXX. Nel cui tempo foro composte le fabule de Cerbaro cane infernale et de Amphione, lo quale con lo canto della **cetera** comoxe le prete et li saxi."

("Loth reigned 80 years. At that time the fables of Cerberus the infernal dog were composed and Amphion who with the sound of the cetra moved boulders and rocks")

Edition: D'Achille 1982.

XIV-22 (Classical)

Metamorfosi d'Ovidio volgarizzate (libri I-V)., IV, vol. 1, pag. 187.13 (Arrigo Simintendi, Prato, 1333):

"e per ogne luogo risuonano le **cetere** e le trombe e le canzoni, avventurati argomenti de' lieti animi."

("and everywhere resound the cetre and the trumpets and the songs, fortunate themes of glad lovers")

Edition: Basi 1846; Basi 1848-1850, 1-4.

XIV-23 (Classical)

Comedia delle ninfe fiorentine cap. 7, par. 10, pag. 695.24 (Giovanni Boccaccio, Florence, 1341-1342):

"e l'allodole, imitanti l'umane **cetere** col lor canto, gaie, cominciarono a riprendere il cielo..."

("and larks imitating the cetre of humans with their gay singing started to fly towards the sky")

Edition: Branca 1964, 678-835.

XIV-24 (Figurative)

Lo Libro d'Arrighetto fiorentino disposto di grammatica in volgare, pag. 179.20 (Anonymous, Tuscan, 14th c.):

"O buona prosperità, ove se' tu ora? la mia **cietera** è convertita in pianto ed è fatta lacrimosa lira."

"O prosperity, where are you now? My cetra has changed to weeping and has become a teary lira")

Edition: Bonaventura 1912-1913, 110-92.

XIV-25 (Figurative)

Canzoniere (Rerum vulgarium fragmenta) 292.14, pag. 366 (Francesco Petrarca, Florence, 1374):

"Or sia qui fine al mio amoroso canto: / secca è la vena de l'usato ingegno, / et la **cetera** mia rivolta in pianto."

"And now this is the end of my love song / dry is the vein of the wit/ and my cetra is changed to playing tears")

Edition: Santagata 1996.

XIV-26 (Classical)

Arte Am. Ovid L. I, pag. 479.13 (Venice, 14th c.):

"Lo fiolo o nievo de Filiro amaistrà in la **citara** Achille e corrompé li feri animi cum piasevele arte..."

("The son or nephew of Filiro had mastery in the cetra of Achilles and can manipulate the proud souls with delightful art...")

Edition: Tesoro della lingua Italiana delle Origini (http://tlio.ovi.cnr.it/TLIO/) (accessed 15.01.2018)

XIV-27 (Biblical)

Capitolo dei Bianchi (Franco Sacchetti, Florence, late 14th c.; iconographical program of frescoes in Orsanmichele):

"...ne la volta di spora stellifera, atorniato con stormenti e **citera**,
son pinti i tuo'angeli, che suonano, e ne pilastri ancora, che t'adorano."

("...on the vault (of the church) with stars, encircled by instruments and cetre, are painted Your angels who played and also in the pillars that worships You.")

Edition: Brown 1978, 113.

XIV-28 (Figurative)

Tu che martiri (Manfredino, Perugia, 14th c.):

"Tu che martiri tanto la persona per l'aspro sòn che la donna ti **cetra**
e che porta de stragl' cent' a faretra sol per contrariar quel ch'en te sona"

("You that martyred, the person that the lady serenades with the cetra of bitter sound, and who brings a hundred arrows from one bow only to be against what you sound...")[2] (Ed: The possible context may be a courtly love complaint?).

Edition: Mancini 1996-97.

XIV-29 (?Figurative)

Rime / tre sonetti (Gillio Lelli, Perugia, 14th c.):

"ché s'él te bisognasse un calciaretto sonarà sempre simigliante **cetra**."

("if you need a calciaretto [?] it will sound very similar to the cetra")

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[2] Literally "cetras you with", in other words, cetra as a verb.

Edition: Marti 1956, 767, 789, 792.

(15th century)

XV-1 (Performative)

Il Sollazzo xxv, 9-12 (Simone Prodenzani, Orvieto, early 15th c.):

"Con la chitarra fe' suoni a tenore
con tanta melodia che a ciascuno
per la dolcezza gli alegrava 'l core;
con la **cetera** ancor ne fece alcuno"

("With the gittern he played the tenor
with such a sweet melody that it warmed
everyone's heart. An with the cetra
he played some other pieces")

Edition: DeBenedetti 1922.

XV-2 (Performative)

Novella di Scopone (Gentile Sermini, Siena, c. 1424):

"che con un liuto e una fina **cetera** al collo al famiglio"

("that with a lute and a fine cetra at the neck [hanging over the shoulder?] of the servant")

Commentary: Castelli, Mingardi, Padovan 1987, 142.

XV-3 (Performative)

Letter to his father concerning a performance of Antonio di Guido (Galeazzo Maria Sforza, Florence, 1459):

"Dopo el disinare reductome in una camera con tuttal la compagnia: ò 'Idito cantare con la **citara**" uno Maestro Antonio che credo che Vostra Exc debba se non cognoscere, almancho havere oldito nominare...narrò ogni cosa con tanta dignità et modo, che 'i magiore poeta né oratore che sia al mundo, se l'havesse havuto a fare tale acto, forse non ne saria uscito con tanta commendatione da ogni canto del dire suo....or a dire di costui saria grandissima impressa"

("After dinner, we retired to a room with all of the guests. We heard a Maestro Antonio sing with the cetra, and if your Excellency does not know him at least you must have heard of him. He sang with such dignity and style that the greatest poet or orator in the world, presented with such a task would perhaps not have earned such praise for performing it.... I was greatly impressed by him")

Edition: McGee 2009, 87, 261; McGee's translation, given above, uses "with the *citara*, [probably a lute]" which I have changed to "cetra".

XV-4 (Performative)

Dialogus de neapolitana profectione (Ludovico Carboni, Ferrara, 1473):

"Ego certe versus meos ut plurimum facio apolleneam **cytharam** in manu tenens"

("Indeed I perform as I usually do, with my Apollonian cithara in my hands")

Commentary: Gallo 1995, 70.

XV-5 (Figurative)

I Commentarii (Lorenzo Ghiberti, Florence, c. 1447):

"Le figure erano in detta cornuola uno vecchio a sedere in su uno scoglio era una pelle di leone, et legato, colle mani drieto, a uno albero; a' piedi di lui era uno infans ginochioni coll'uno pie, e guardava uno giovane il quale aveva nella mano destra una carta et nella mano sini stra una **citera**. Pareva lo infans addimandasse doctrina al giovane queste tre figure furon fatte per la nostra età..."

("In this carnelian were figures, an old man sitting on a rock with a lion's skin, tied by his hands to a tree; at his feet was a boy, in pious attitude, who kneeled before a young man with a document in his right hand and in his left hand a kithara (or: cetra or lute).[3] It seemed that these three figures represented the stages of life...")

Edition: Schlosser 1912, 47; Poeschke 2000, 161.

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[3] See Poeschke 2000, Pl. 40, for a photo of this famous gem, owned by Lorenzo de' Medici, which depicted Apollo and Marsyas. Poeschke points out that the gem inspired many other works, including ones showing other instruments, such as the lute, rather than the antique kithara.

XV-6 (Performative)

Concistoro, Deliberazione vol. 539, f. 89 (Palio festivities, payment list for musicians, Siena, Agosto 20 1456):

"Uno tamburino del padovano che sono la **cetura**"

("A tabor player from Padua who played the cetra")

Edition: Cellesi 1906, 71; D'Accone 1997, 688, translates the passage as "who played the citole", without citing the original Italian passage including the term *cetura*.

XV-7 (Performative)

Sforziade Canto VIII, 25-27 ["Laudes Petri Boni Cythariste"] (Antonio Cornazano, Ferrara, 1459):

"Cantava in **cetra** ad ordinata frotta
l'amor d'alcun moderni chi s'appretia:
come el Signor d'Arimini hebbe Ysotta"
("He sang with the cetra to an attentive audience
contemporary love stories of how the Lord of Rimini
conquered Isotta degli Atti")

Edition: Pirrotta 1966, 144.

XV-8 (Legal)

*Inventory of Choir Stall Intarsie by Lorenzo Canozi (1425 - 1477) and Cristoforo Canozi (*Padova, Basilica del Santo, 1462) (ed.: Lorenzo Canozi worked as an

intarsiatore on the *studiolo* at *Belfiore* for Leonello d'Este between 1449 - 1453/4 - work now lost):

"**cetera**, liuto, la chiarina, il monochordo, la sampogna,i timpani, la tromba"

("cetra, lute, straight trumpet, monochord, bagpipe, timpani, slide trumpet")

Commentary: Gonzati 1852-1853, p. 71.; Beck 2001.

XV-9 (Figurative)

Stanze I, XLVI [*Stanza Cominciate per la Giostra del Magnifico Giuliano de' Medici*] (Angelo Poliziano, Florence, 1478):

"Sembra Talia se in man prende la **cetra**
sembra Minerva se in man prende l'asta
se l'arco ha in mano, al fianco la faretra
giurar potrai che sia Diana casta."

("She would resemble Thalia if she took
a cetra in hand, Minerva, if she held a spear;
if she had a bow in hand and a quiver,
you would swear she was chaste Diana.")

Edition: Poliziano 1979, 24-25.

XV-10 (Definitive)

De inventione et usu musice (Johannes Tinctoris, Naples, written c. 1480 or earlier):

"Quid sit lyra populariter leutum dicta, quid etiam quelibet instrumentalis species ex ea producta, utpote (iuxta linguam vulgarem)
viola, rebecum, ghiterra, **cetula**, et tambura; a quibus omnia hec inventa; quot chordas et qualiter ordinatas primum habuerint et nunc habeant."

("What the lyra popularly called the lute is, likewise all the kinds of instrument derived from it, such as - in the vulgar tongue - the viola, the rebec, the gittern, the cetra, and the tambura; by whom all these were invented; what strings and how arranged they had at first and have now.")[4]

"Ab ipsa etiam lyra instrumentum aliud processit, ab Italis, qui hoc compererunt, **cetula** nominatum,super quam quattuor enee vel calibee chorde, ad tonum,diatesseron, ac rursus tonum, communiter disposite tenduntur,pennaque tanguntur. Et hec ipsa **cetula**, plana existens, quasdam elevationes ligneas quas populariter tastas appellant in collo proportionaliter habet ordinatas, contra quas chorde digitis compresse sonum vel sublimiorem vel humiliorem efficiunt."

("From the *lyra* likewise proceeded another instrument, named by the Italians, who devised it, a cittern, upon which four brass or steel strings, commonly disposed by a tone, a fourth, and back a tone, are stretched. And this cittern itself, being flat, has certain wooden raised parts that are

[4] This and the following English translations of Tinctoris are from http://earlymusictheory.org/Tinctoris/texts/deinventioneetusumusice/#paneo=Translation (accessed 08.01.2018).

popularly called frets arranged proportionally on the neck, against which the strings, pressed down by the fingers, make the sound either higher or lower.")

"**Cetula** tantum uti quosdam rusticos ad eam nonnullas leves cantilenas concinentes choreas quoque ducentes in Italia quandoque comperi."

("I have sometimes known peasants to use only the cittern, singing some light songs to it and also leading dances in Italy.")

Edition: Baines 1950. Also see footnote for English translation above.

XV-11 (Performative)

Ordine et officij de casa de lo Illustr. signor duca d'Urbino (... time of Guidobaldo Montefeltro, c 1490?):

"De li sonatori capitolo xlvi. Li sonatori vogliono essere in casa e excelenti e maxime doi o tre che cantino sotto voce e cum dolceza e al mio giusto a la castigliana e che sapessino sonare liuti e **cetere**..."

("Concerning the musicians Chapter xlvi. The musicians must stay in the house and be excellent, and above all there must be two or three who can sing softly, sweetly, and in Castilian according to my taste and they must be able to play lutes and cetre..."; transl. Piperno 2011, 82)

Edition: Eiche 1999; Piperno, 2011.

XV-12 (Definitive)

Letter (Isabella d'Este to Atalante Migliorotti, Florence, 22 June 1493; letter of Isabella to Florentine improviser, asking him to find a *cithara* of as many strings as he thought appropriate):

"bona **cithara** piccola per uso nostro"

("a good small cetra for my use")

Edition: Prizer 1982, 107.

XV-13 (Definitive)

Letter (Francesco Bagnacavallo to Isabella d'Este, Ferrara, 24 October 1491; letter from Bagnacavallo [courtier of Cardinal Ippolito I d'Este in Ferrara] suggesting a singing teacher for Isabella):

"Illustrissima Madama, a Vostra Signoria me aricomando.... A li di passati scripssi a Vostra Signoria de uno cantore che era venuto de Hongaria che aveva dicisi insignato al Reverendissmo monsignore vostro frate, il qualle dice che non ha grande vocce da capella, ma che da camara e suficienti, et dice che canta bene in uno liuto, una **citera**, una violla; in tali istormenti sa cantare bene..."

("Recently I wrote to your Ladyship concerning a singer who had come from Hungary and who, as I told you, taught the most Reverend Monsignor [Ippolito]. Your brother says that he does not have a large choir voice, but that he is sufficient as a chamber singer and says that he sings well to the lute, cetra, [and] lira; he knows how to sing well with such instruments...")

Edition: Prizer 1999, 14.

XV-14 (Performative)

L'Arcadia, 106-108, (Jacopo Sannazaro, Naples, c. 1480):

"Non era sollacciandosi / movean i dolci balli a suon di **cetera** / e 'n guisa di colombi ognior basciandosi"

("They stood together not as mere friends but as lovers, they were making sweet dancing to the sound of the cetra / and like two doves they were sometimes kissing each other")[5]

Source: Tomassini, Stefano, *La danza dei secoli XIII e XIV: danza e poesia.*[6]

(16th century)

XVI-1 (Figurative)

Orlando furioso, Canto Sedicesimo, stanza 72 (Ludovico Ariosto, Ferrara, 1516):

"un giovinetto che col dolce canto,
concorde al suon de la cornuta **cetra**,
d'intenerire un cor si dava vanto,
ancor che fosse più duro che pietra"

("a youth who with sweet note,
sang to the sound of the horned cetra
to soften a heart yet proud,

[5] My gratitude goes to Dr. Paul van Heck for his translation of this passage.

[6] http://www.oilproject.org/lezione/la-danza-dei-secoli-xiii-e-xiv-danza-e-poesia-19292.html

though it were harder than stone")

Edition: <http://www.gutenberg.org/files/3747/3747-h/3747-h.htm> (accessed 23.12.2017).

XVI-2 (Performative)

Baldus, Liber XXIII, vv. 563-565 (Teofilo Folengo 1491 - 1544, Mantova, 1517; from a list of instruments playing for dancing at fictional court of *Gelfora*):

"cethras"

("cetre")

Edition: Folengo, Teofilo, *Baldo*, *Volume 2*, (Books XIII-XXV), Mullaney, Ann, transl.,(I Tatti Renaissance Library 36).

XVI-3 (Performative)

Triumphi de gli mirandi spettaculi, (H. de Beneditti, Bologna, 1519):

"Et havean loro un che con rime nove / Al modo rusticano in una cetra , / Facea stupende e gloriose prove"

("And with them there was someone who was making new rhymes in the rustic mode with a cetra, he was proving his art")

Edition: Cardamone 1981, 239.

XVI-4 (Definitive)

Scintille di musica, 139-140 (Giovanni Lanfranco, Brescia, 1533):

"Della **Cethara**. Nella **Cethara** poscia, cio e in quello instrumento che da Peruggini **Cethara** e chiamato: lo Hessachordo maggiore nella differentia delle sue chorde (che solamente sono sei) si ritrova. Ma dico sei per cio che due positioni di essa **Cethara** sono accompagnate di maniera: che ciascuna di loro per una sola da noi vien tolta: perche l'una in ottava con la sua compagna: & l'altra in unisono si concordino. Per tanto in quella chordata cui si da l'ottava, in acuto: segnata A, per esser la piu bassa di suono: havemo posta la nota ut nota ut, come quella: che fondamento e dell detto Hessachordo: nelle sei chorde compreso. Ma il re, si da a quella: che possede il B, perche dall'una all'altra il Tuono Sesquottavo si ode. Et il mi, a quella che e asscritta alla lettera C, perche la medesima differentia del detto Tuono fra la B, & C, si vede. Ma il fa, si pone nella chorda del D, perche il suono, che e fra C, & D, e lo intervallo proprio del Semituon minore. Il sol, poscia habbiamo messo nella E, perche dal D, alla E, di nuovo e ritornato il Tuono. Ulimatamente il la, si pone nel suono piu acuto: che e nella chorda segnata F, Per tanto col mezzo di ut re mi fa sol la, che fanno la compositione detto Hessachordo: la detta Cethara si puo accordare. Le chorde della qual (per noi darle denominatione forse piu strana che la nostra) con sei lettere habbiamo annotate: a ciascuna chorda dando la sua: & ritiranso le due chorde accompagnate sotto una medesima lettera: come nella seguente figura si dimostra. La qual Cethara e divisa per tasti: per il che molte voci per essi tasti caminando si possono trovare. Ma dalla B. alla F. & dalla A. alla E. la quinta si forma."

("Of the cetra, that is, on that instrument called Cethara by the Perugians, the major hexachord is found in the differentiation of its strings [which are

only six]. But I say six, because two strings of this cetra are arranged in a manner such that each of them is taken for only one by us; because the one in octave with its companion and the other in unison are concorded.[7] However, on that string to which is given the octave designated A in order to be the lowest in sound, we have put the note-name ut, as that which is the foundation of the said hexachord contained in the six strings. But the re is given to that which possesses the B, because from the one to the other is heard the Sesquioctava tone; and the mi to that which is acribed the letter C, because the same differentiation of the said whole tone is seen between B and C. But the fa is put on the D string, because the sound that is between C and D is the very interval of the lesser semitone. The sol, then, we have put on the E, because from D to E the whole tone is again returned. Lastly, la is put on the highest sound, which is on the string designated F. However, by means of ut re mi fa sol la, which makes the composition of the hexachord, the said cetra can be tuned. The strings of which (in order not to give them denominations perhaps more strange than ours) we have annotated by six letters, giving to each string its own letter and withdrawing the two strings accompanied under a similar letter, as is shown in the accompanying figure. The which cetra is divided by frets by which many different notes can be played by stopping different frets. But from B to F and from A to E, the fifth is made.

Edition: Lee 1961, 254-255. (English translation above is my corrected version of Lee's edition.)

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[7] In his diagram Lanfranco shows a "six string" cetra comprised of a total of eight strings: the first course (on the treble side of the fingerboard) is single, the second is a double course at the unison, the third is a double course at the octave, and the remaining three are single strings. The capital letters in the text refer to the alphabetical order of the strings going, in pitch, lowest to highest. They do not, of course, refer to pitch names.

XVI-5 (Definitive)

Dialogo di Vincentio Galilei Nobile Fiorentino Della Musica Antica, et Della Moderna, 129-130, 147 (Galilei, Florence, 1581):

(129-130)

"Alle quali openioni diverse intorno all'inventione della Lira, aggiugneremo quella di Filostrato il quale vuole che la prima si facere delle corna di capra insieme con l'osso di mezza la fronte & che il legno che vi si adoperava intorno per qual si voglia bisogno, vuole che di bosso fusse il meglio che adoperare vi si potesse....Et una simile ne descrive Luciano in mano Polifemo, fatta delle corna & di mezza la fronte d'un cervo; la forma della quale (secondo che piace a Plutarco) fu migliorata poi & ridotta nel la vera sua proporzione da Cepione scolare di Terpandro, detta ancora Asia; perche i sonatori di Lesbo habitatori d'Asia Città di Lydia usarono di quella forma & d'ivi in Lesbo fu si asserita dal detto Cepione in assai miglior forma quella che qui si vede: per cagione di che forse il Divino Ariosto disse, Concorde della cornuta **cetra**, ancora che Giulio Polluce chiama corna quelli due viticci della somitá di essa Lira, i quali sportano in fuore à guisa d'orecchie."

("To these diverse opinions concerning the invention of the lyre we add that Philostratus, who holds that the first lyres were made of the horns of sheep, along with the bone in the middle of the forehead and that the best wood for any purpose was boxwood....Lucian describes a similar one in the hand of Polyphemus made from the horns and the middle of the forehead of a stag. Its form according to Plutarch was improved and accommodated to its true proportion by Cepion, pupil of Terpander, also named Asias, because the players of Lesbos who lived in Asia, a city in Lydia, used it in that form, and Cepion transported it to Lesbos in a better form than that which is seen. For this reason, perhaps, the divine Ariosto said: Make consonance with the

sound of the horned cetra. Julius Pollux, however, calls 'corna' the two tendrils [spirals] at the top of the liar that stick out like ears.")

(147)
"Fu la **cetera** usata prima tra gli Inglesi che da altre nationi, nella quale isola si lavoravano già in eccellenza; quantunque hoggi le più reputate da loro, sono quelle che si lavorano in Brescia; con tutto questo è adoperata & apprezzata da nobili, & fu cosi detta dagli autori di essa, per forse resucitare l'antica Cithara..."

("The English, before other nations, first used the cetra. On their island they made excellent ones, although today the most famous are made in Brescia. It is used and appreciated by the nobility. It was called cetra by its inventors perhaps to recall the ancient kithara...")

Edition: Galilei 2003; the English translations given above are taken from this work.

BIBLIOGRAPHY

—Agostini, François, E Voci di U Cumune, et. al., *État des Recherches sur les Instruments Traditionnels en Corse*, Accademia d'i Vagabondi (1980).

—Alexander, Jonathan J.G., ed., *The Painted Page: Italian Renaissance Book Illumination 1450 - 1550*, Munich: Prestel (1995).

—Alföldi-Rosenbaum, Elisabeth, Ward-Perkins, John. *Justinianic Mosaic Pavements in Cyrenaican Churches*, Roma: L'Erma di Bretschneider (1980).

—Allacci, Monsignor Leone da, *Poeti antichi raccolti da codici mss. della Biblioteca Vaticana e Barberina*, Napoli: Alecci (1661).

—Allaire, Gloria, "Medieval Italian pilgrims to Santiago de Compostela: New literary evidence," *Journal of Medieval History*, 24:2 (1998), 177-189.

—Allworth, Christopher, "Cetra et Cetera", *FoMRHI Quarterly*, Bulletin 10, Comm. 97 (Jan. 1978), 26.

—Anoyanakis, Fivos. "Ein byzantinisches Musikinstrument," *Acta Musicologica*, Vol 37, Fasc. 3/4 (Jul. - Dec. 1965), 158 - 165.

—Apel, Willi, ed., *French Secular Compositions of the Fourteenth Century*, Vol. I, Rome: American Institute of Musicology (1970).

—Armstrong, Regis, et al, ed., *St. Francis of Assisi: Early Documents, vol. 2: The Founder*, New York: New York City Press (2000).

—Armstrong, Regis, *et al*, ed., *The Francis Trilogy of Thomas of Celano*, Hyde Park: New City Press (2013).

—Augustyn, Wolfgang, *Der Lateinische Hamilton-Psalter im Berliner Kupferstichkabinett (78 A 5)*, Hildesheim, Zürich: Weidmann (1996).

—Avenary, Hanoch. "Hieronymus' Epistel über die Musikinstrumente und ihre altöstlichen Quellen", *Annuario musical* Vol xvi (1961), 55 - 80.

—Ayres, Larry M., "An Early Christian Legacy in Italian Romanesque Miniature Painting," *Wiener Jahrbuch für Kunstgeschichte* xlvi/xlvii (1993/94), 37 - 44.

—Ayres, Larry M., "Santa Cecilia: The Patron Saint of Musicians and Her 'Roman' Giant Bible," in Sullivan, Blair, ed., *The Echo of Music: Essays in Honor of Marie Louise Göllner*, Harmonie Park Press, Warren Michigan (2004), 19 - 38.

—Babb, Warren, transl., Palisca, Claude, ed. *Hucbald, Guido and John: Three Medieval Treatises*, New Haven: Yale University Press (1978).

—Bachmann, Werner. *The Origins of Bowing*, London: Oxford University Press (1969).

—Bagatin, Pier Luigi, *Preghiere di legno: tarsie e intagli di fra Giovanni da Verona*, Firenze: Centro Editoriale Toscano (2000).

—Bagatin, Pier Luigi, "Fra Giovanni 'de Tachis' da Verona", *Il legno nell'arte. Tarsie e intagli d'Italia*, I, Treviso (2005), 43 - 51.

—Baines, Anthony, "Fifteenth-century Instruments in Tinctoris's *De Inventione et Usu Musicae*," *Galpin Society Journal* 3 (1950), 19 - 26.

—Barney, Stephen. Lewis, W. J., Beach, J. A., Berghof, Oliver, transl. *The Etymologies of Isidore of Seville*, Cambridge: Cambridge University Press (2006).

—Basi, Casimiro, Guasti, Cesare, eds., *I primi V libri delle Metamorfosi d'Ovidio volgarizzate da ser Arrigo Simintendi*, vol. I, Prato: Guasti (1846).

—Basi, Guasti, eds., *Supplemento ai primi dieci libri dell'Ovidio Maggiore*, Prato (1848-50).

—Beck, Eleanora, "Representations of Music in the Astrological Cycle of the Salone della Ragione in Padua" *Music in Art* XXIV/1-2 (1999), 68 - 84.

—Beck, Eleanora, "Revisiting Dufay's Saint Anthony Mass and Its Connection to Donatello's Altar of Saint Anthony of Padua," *Music in Art* XXVI/1-2 (2001), 5 - 19.

—Behn, Friedrich. "Die Laute im Altertum und frühen Mittelalter," *Zeitschrift für Musikwissenschaft* Bd 1, Nr 2, (Nov. 1918), 89 - 107.

—Bellia, Angela, "Twelfth-Century Musical Symbols in the Star-Studded Sky of King Ruggero II", *Music in Art*, Vol 37, 1/2 (2012), 24-34.

—Benetti, Ermanno, Bresadola, Giovanni, et al., *Tessere La Tua Lode: le opere lignee di fra' Giovanni da Verona in Santa Maria in Organo*, Verona 2016.

—Berenson, Bernard, *Italian Pictures of the Renaissance: Florentine School*, 2 vols., London: Phaidon (1963).

—Berenson, Bernard, *Italian Pictures of the Renaissance: Central Italian and North Italian Schools*, ii, London: Phaidon (1968).

—Berg, Knut, "Notes on the Dates of Some Early Giant Bibles," *Acta ad Archeologiam et Artium Historiam Pertinentia: Institutum Romanum Norvegiae* 2 (1965), 167 - 176.

—Berisso, Marco, ed., *L'Intelligenza: poemetto anonimo del secolo XIII*, Parma: Fondazione Pietro Bembo (2000).

—Bethe, Eric, ed., *Pollucis Onomasticon Libri I - X, Index* (Lexicographi Graeci Vol. IX), Stuttgart: Verlag B. G. Teubner (1966).

—Biagi, G., Passerini, G., Rostagno, E., Cosmo, U., eds., *La Divina Commedia nella figurazione artistica e nel secolare commento*, vol. III, Torino: UTET (1939).

—Bigazzi, Vanna, "I 'Proverbia' pseudoiacoponici," *Studi di filologia italiana* XXI (1963).

—Billiet, Frederic, "Entendre le concert celeste dans les oeuvres de Gentile", in Lacché, Mara, ed., *Il mondo cortese di Gentile da Fabriano e I'immaginario musicale: La cultura musicale e artistica nel Quattrocento europeo e la sua riscoperta in musica moderna e contemporanea*, Roma: Aracne (2008), 105 - 128.

—Blažeković, Zdravko, "Music in Medieval and Renaissance astrological imagery," diss. City University of New York (1997).

—Blažeković, Zdravko, “The Understanding and Misunderstanding the Terminology and Iconography of Instruments in Fendulus’s Abridgment of ‘Introductorium maius in Astronomiam’”, *Music in Art* vol 23, 1/2 (1998), 23-32.

—Blažeković, Zdravko, “What Marsyas May Have Meant to the Cinquecento Venetians, or Andrea Schiavone’s Symbolism of Musical Instruments”, *Music in Art* vol 26, 1/2 (2001), 30-46.

—Bletschacher, Richard *Die Lauten- und Geigenmacher des Füssener Landes*, Leipzig: Friedrich Hofmeister (1978).

—Blume, Dieter, *Wandmalerei als Ordenspropaganda: Bildprogramme im Chorbereich franziskanischer Konvente Italiens bis zur Mitte des 14. Jahrhunderts*, Worms: Werner’sche Verlagsgesellschaft (1983).

—Boehm, Barbara, *Choirs of Angels: Painting in Italian Choir Books 1300-1500*, New York: Metropolitan Museum of Art (2008).

—Bonaventura, Enzo, “Arrigo da Settimello e l'"Elegia de diversitate fortunae et philosophiae consolatione", *Studi medievali* IV (1912-1913).

—Bonsanti, Giorgio, ed., *La Basilica di San Francesco ad Assisi Basilica superiore*, Mirabilia Italiae 11, Modena (2002).

—Borries-Schulten, Sigrid von, “Zur romanischen Buchmalerei in Zwiefalten: zwei Illustrationsfolgen zu den Heiligenfesten des Jahres und ihre Vorlagen”, *Zeitschrift für Kunstgeschichte*, 52. Bd., H. 4 (1989), 445-471.

—Borthwick, E. K. “The Riddle of the Tortoise and the Lyre”, *Music & Letters*, Vol. 51, No. 4 (Oct. 1970), 373 - 387.

—Boskovits, Miklos, ‘Gli affreschi del duomo di Anagni:un capitolo di pittura romana,’ *Paragone* 30, no. 357 Arte (1979), 3-41.

—Bouleau, Charles, *The Painter’s Secret Geometry: A Study of Composition in Art*, New York: Harcourt Brace and World (1963).

—Bourdua, Louise, *The Franciscans and Art Patronage in Late Medieval Italy*, Cambridge: Cambridge University Press (2004).

—Bower, Calvin M., transl., and Palisca, Claude V., ed. *Fundamentals of Music: Anicius Manlius Severinus Boethius*, New Haven: Yale University Press (1989).

—Bower, Calvin M. "An 11th-century Italian Gloss on Cassiodorus: New Evidence Concerning Medieval Instruments", in Hörner, Stephan, and Schmid, Bernhold, eds., *Festschrift für Horst Leuchtmann zum 65. Geburtstag*, Tutzing: Schneider 1993, 69 - 93.

—Bower, Calvin, "Reception, Reaction, and Redaction: A Reflection on Carolingian and Post-Carolingian Musical Thought", unpublished paper presented at the Annual Meeting of the American Musicological Society, Phoenix, Arizona (1997).

—Boynton, Susan, "The Sources and Significance of the Orpheus Myth in 'Musica Enchiriadis' and Regino of Prüm's 'Epistola de harmonica institutione' ", *Early Music History* Vol 18 (1999), 47 - 74.

—Brambilla, Franca Ageno, ed., *Dante Alighieri, Convivio*, Le Lettere: Società Dantesca italiana. Firenze: Edizione Nazionale, (1995).

—Branca, Vittore, "Giovanni Boccaccio, Comedia delle ninfe fiorentine (Ameto)", in *Tutte le opere di Giovanni Boccaccio*, vol. II, Milano: Mondadori (1964).

—Braun, Joachim, "Musical Instruments in Byzantine illuminated manuscripts", *Early Music* (July 1980), 312 - 327.

—Braunfels, Wolfgang, ed., *Lexikon der christlichen Ikonographie, 6. Band: Ikonographie der Heiligen - Crescentianus von Tunis bis Innocentia*, Freiburg im Breisgau: Verlag Herder (1974).

—Brooke, R., transl., *Scripta Leonis, Rufini et Angeli sociorum S. Francisci*., Oxford: Oxford University Press (1970).

—Brothers, Thomas, *Chromatic beauty in the late medieval chanson: an interpretation of manuscript accidentals*, Cambridge: Cambridge University Press, 1997.

—Brown, Howard Mayer, and Lascelle, Joan, *Musical Iconography: A Manual for Cataloguing Musical Subjects in Western Art Before 1800*, Cambridge: Harvard University Press (1972).

—Brown, Howard Mayer, "Trecento Angels and the Instruments They Play", *Modern Musical Scholarship*, Stockfield: Oriel Press (1978), 112 - 140.

—Brown, Howard Mayer, "Iconography of Music", in Sadie, Stanley, ed., *New Grove Dictionary of Music and Musicians*, Vol. 9, London: Macmillan Publishers Limited (1980), 11 - 18.

—Brown, Howard Mayer, "A Corpus of Trecento Pictures with Musical Subject Matter, Part I", *Imago Musicae* I, Basel/ Kassel/ London: Bärenreiter-Verlag (1984), 189 - 243.

—Brown, Howard Mayer, "A Corpus of Trecento Pictures with Musical Subject Matter, Part I, Installment 2", *Imago Musicae* II, Basel/ Kassel/ London: Bärenreiter-Verlag (1985), 179 - 281.

—Brown, Howard Mayer, "A Corpus of Trecento Pictures with Musical Subject Matter, Part I, Installment 3", *Imago Musicae* III, Basel/ Kassel/ London: Bärenreiter-Verlag (1986), 103 - 187.

—Brown, Howard Mayer, "Instruments: The Middle Ages / Instruments: The Renaissance", in Brown, Howard Mayer, and Sadie, Stanley, eds., *Performance Practice: Music Before 1600*, New York: Norton (1989), 15-36, 167-184.

—Brumana, Biancamaria, "Costruttori di strumenti a Perugia tra Cinquecento e Seicento", *Arte e musica in Umbria tra Cinquecento e Seicento atti de XII convegno di studi umbri,* Perugia: University of Perugia (1981), 341-49.

—Brumble, H. David, *Classical Myths and Legends in the Middle Ages and Renaissance: A Dictionary of Allegorical Meanings,* Westport: Greenwood Press (1998).

—Buchner, Alexander, "Musikinstrumente auf der Freske der Karlsteiner Apokalypse. Beitrag zur Geschichte der mittelalterlichen Musikinstrumente", *Studia instrumentorum musicae popularis* III, Stockholm (1974), 32-41.

—Buchner, Alexander, *Handbuch der Musikinstrumente*, Aria Verlag, Praha (1981); repr. Hanau/Main: Verlag Werner Dausien, (1985).

—Bugini, Elena, "Musica tarsiata: Catalogo dei Soggetti Musicalmente Rilevanti del magister perspectivae Giovanni da Verona", *Imago Musicae* XXIV (2011), 61 - 90.

—Bugini, Elena, "Lineamenti di Iconografia Musicale in un Nucleo di Tarsie Rinascimentali: Fra' Giovanni da Verona a Napoli", in *Napoli Nobilissima: Rivista di Arti, Filologia e Storia*, Vol LXVIII (2011), 3-14.

—Bugini, Elena, *La Musica di fra Giovanni da Verona*, Paris: Classiques Garnier (2014).

—Bullard, Beth, ed. and transl., *Musica getutscht: A Treatise on Musical Instruments by Sebastian Virdung*, Cambridge: Cambridge University Press (1993), 111 - 119.

—Bury, Michael, "Perugino, Raphael and the Decoration of the Stanza dell'Incendio", in Burke, Jill, ed., *Rethinking the High Renaissance: The Culture of the Visual Arts in Early Sixteenth-Century Rome* London: Ashgate (2012).

—Burzik, Monika, *Quellenstudien zur europäischen Zupfinstrumentenformen*, Kassel: Bosse (1995).

—Butt, John, *Daily Life in the Age of Charlemagne*, Westport: Greenwood Press (2002).

—Cahn, Walter, *Romanesque Bible Illustration*, Ithaca: Cornell University Press (1982).

—Campbell, Richard, *Zur Typologie der Schalenlanghalslaute*, Sammlung Musikwissenschaftlicher Abhandlungen Bd 47, Baden-Baden: Verlag Heitz (1968).

—Cantor, Norman, *Medieval History: The Life and Death of a Civilization*, New York: Macmillan (1963).

—Cardamone, Donna, *The Canzona villanesca alla napoletana and Related Forms 1537-1570*, Vol I, UMI Research Press (1981).

—Castaldo, Daniela, "Immagini della musica nella basilica di Santa Caterina a Galatina", in Cassiano, A., Vetere, B., *Dal giglio all'orso: i principi D'Angiò e Orsini del Balzo nel Salento*, Galatina: Congedo (2006), 148-162.

—Castelli, Patrizia, Mingardi, Maurizio, Padovan, Maurizio, *Mesura et Arte del Danzare - Gugliemo Ebreo da Pesaro e la danza nelle Corti Italiane de XV secolo*, Comune di Pesaro, (1987).

—Castiglioni, Gino, e Peretti, Gianni, *Per Girolamo Dai Libri: pittore e miniatore del Rinascimento veronese,* Verona: Marsilio (2008).

—Cattin, Giulio, *Music of the Middle Ages I*, Cambridge: Cambridge University Press (1984).

—Cavallaro, Anna, ed., *Collezioni di Antichità a Roma tra '400 e '500*, Roma: De Luca Editori d'Arte (2007).

—Cavallo, Guglielmo, ed., *De Universo De Rerum Naturis Rabano Mauro*, (facsimile ed.) Torino: Priuli e Verlucca (1994).

—Cavicchi, Camilla, "The cantastorie and his music in fifteenth- and sixteenth-century Italy", *Troja Jahrbuch für Renaissancemusik* Band 13 (2014), 105-133.

—Cellesi, Luigia, *Storia della più antica Banda Musicale Senese*, Siena (1906).

—Ceulemans, Anne-Emmanuelle, "Instruments Real and Imaginary: Aaron's Interpretation of Isidore and an Illustrated Copy of the 'Toscanello' ", *Early Music History*, Vol. 21 (2002), 1-35.

—Chabaille P., ed., *Il Tesoro di Brunetto Latini volgarizzato da Bono Giamboni,* Bologna: Presso Gaetano Romagnoli (1878-1883).

—Chauvel, Claude, "Die Rolle der deutschsprachigen Länder in der Wiederentdeckung und in der Renaissance der Laute (ca. 1830–1950)", *Gitarre-Archiv Österreich* (1999), http://www.gitarre-archiv.at/texte/chauvel-wiederentdeckung-der-laute/.

—Christian, Kathleen, "The Multiplicity of the Muses: The Reception of Antique Images of the Muses in Italy, 1400–1600," in Christian, Guest and Wedepohl, eds., *The Muses and their Afterlife in Post-Classical Europe*, London: Warburg Institute (2014), 103-135.

—Christiansen, Keith, "The *Coronation of the Virgin* by Gentile da Fabriano," *Getty Museum Journal*, Vol. 6-7 (1978-79), 1-12.

—Clark, Kenneth, *Hall's Dictionary of Subjects and Symbols in Art*, Revised Edition, London: John Murray (1974).

—Coelho, Victor, "Giovanni Serodine's Allegoria della Scienza", *Music and Science in the Age of Galileo,* The University of Western Ontario Series in Philosophy of Science, Vol 51, Springer: Dordrecht (1992), 91-114.

—Colonna, Francesco, *Hypnerotomachia Poliphili, The Strife of Love in a Dream*, Godwin, Joscelyn, transl., London, Thames and Hudson (1999).

—Conti, Alessandro, *La miniatura bolognese, scuole e botteghe 1270-1340*, Bologna: Alfa **(1981).**

—Contini, Gianfranco, ed., *Poeti del Duecento*, Milano-Napoli: Ricciardi (1960).

—Cook, William, ed., *The Art of the Franciscan Order in Italy*, The Medieval Franciscans Vol. 1, Leiden: Brill (2005).

—Corsi, Giuseppe, ed., *Fazio degli Uberti, Il Dittamondo e le Rime*, vol. I, Bari: Laterza (1952).

—Corsi, Giuseppe, ed., *Fazio degli Uberti, Il Dittamondo e le Rime,* vol. II, Bari, Laterza (1952).

—Costa, Daniela, "Sant'Agostino e le allegorie degli strumenti musicale", *Rivista Italiana di Musicologia* XXVIII (1993), 207-226.

—Crane, Frederick, *Athanasius Kircher, Misurgia Universalis (Rome, 1650) : the section on musical instruments*, Master's thesis, University of Iowa (1956).

—Crane, Frederick, *Bibliography of the Iconography of Music*, New York: Research Center for Musical Iconography (1971).

—Crane, Frederick, *Extant Medieval Musical Instruments: A Provisional Catalogue by Types*, University of Iowa Press, (1972).

—Cutler, Anthony, *The Aristocratic Psalters in Byzantium*, (Bibliothèque des Cahiers Archéologiques XIII), Paris: Picard, (1984).

—D'Achille, Paolo, ed., *La «Cronaca volgare» isidoriana. Testo tre-quattrocentesco di area abruzzese*, L'Aquila: Deputazione Abruzzese di Storia Patria (1982).

—D'Accone, Frank, *The Civic Muse: Music and Musicians in Siena during the Middle Ages and Renaissance*, Chicago: University of Chicago Press (1997).

—Davezac, Bertrand, *The Stuttgart Psalter: Its Pre-Carolingian Sources and Its Place in Carolingian Art,* diss. Columbia University (1972).

—DeBenedetti, Santorre, *Il Sollazzo, Contributi alla storia della Novella, della Poesia musicale e del Costume nel Trecento*, Torino: Fratelli Bocca (1922).

—Degenhart, Bernhard, Schmitt, Annegrit, "Gentile da Fabriano in Rom und die Anfänge des Antikenstudiums", *Münchner Jahrbuch der bildenden Kunst*, 3. Folge, 11 (1960), 59-151.

—Deknatel, Frederick, "The Thirteenth Century Gothic Sculpture of the Cathedrals of Burgos and Leon", *The Art Bulletin* Vol. 17 No. 3 (1935), 243-389.

—Della Porta, Maurizio, Genovesi, Ezio, *Iconografia musicale in Umbria tra XII e XIV secolo*, Assisi: Laboratorio medievale: Arte, Musica, Teatro (1984).

—De Marchi, Andrea, "Umbria and the Marches," in Marco Folin, ed., *Courts and Courtly Arts in Renaissance Italy - Arts Culture Politics 1395 - 1530*, Woolbridge, Suffolk: Antique Collector's Club, (2011).

—Denis, Valentin, *De Muziekinstrumenten in de Nederlanden en in Italië naar hun Afbeelding in de 15e-eeuwsche Kunst*, Leuven: Universiteitsbibliotheek (1944).

—Dorigatti, Marco, ed., *Ludovico Ariosto. Orlando furioso: secondo la princeps del 1516*, Firenze: Leo S. Olschki (2006).

—Eiche, Sabine, ed., *Ordine et officij de casa de lo Illustr. signor duca d'Urbino*, Urbino: Accademia Raffaello (1999).

—Eichmann, Ricardo, *Koptische Lauten, eine musikarchäologische Untersuchung von sieben Langhalslauten des 3. - 9. Jh. n. Chr. aus Ägypten*, Deutsches Archäologisches Institut Abteilung Kairo Sonderschrift 27, Verlag Philipp von Zabern, Mainz am Rhein (1994).

—Eichmann, Ricardo, "Archéologie du luth d'Antinoé: létude organologique", in Calament, Florence, Eichmann, Ricardo, Vendries, Christophe, *Le luth dans l'Égypt byzantine. La tombe de la "Prophétesse d'Antinoé" au Musée de Grenoble*, Orient-Archäologie Bd 26, Verlag Marie Leidorf GmbH, Rahden/ Westf. (2012), 73 - 86.

—Eleen, Luba, "New Testament Manuscripts and their Lay Owners in Verona in the Thirteenth Century," *Scriptorium* Vol 41 Nr 2 (1987), 221 - 236.

—Ellsworth, Oliver, *The Berkeley Manuscript: University of California Music Library, MS. 744 (olim Philips 4450)*, Lincoln and London: University of Nebraska Press (1984).

—Emmerson, Richard, McGinn, Bernard, *The Apocalypse in the Middle Ages*, Ithaca: Cornell University Press (1992).

—Evans, Helen, ed., *Byzantium: Faith and Power (1261-1557)*, New York: Metropolitan Museum of Art (2004).

—Fabris, Dinko, "Composizioni per "cetra" in uno sconosciuto manoscritto per liuto del primo Seicento (Napoli, Cons. MS 7664)", *Rivista italiana di musicologia*, XVI/2 (1982), 185-206.

—Fabris, Dinko, "Il Primo libro di Tabolatura di Citthara di Paolo Virchi (1574) e la tradizione degli strumenti a corda a Brescia nel Cinquecento", *Liuteria e musica strumentale a Brescia tra Cinque e Seicento*, II, a cura di R. Cafiero e M.T.Rosa Barezzani, Brescia: Fondazione Civiltà Bresciana (1992), 65-89.

—Facchin, Francesco, "La Rappresentazione di Strumenti musicali in Giusto de' Menabuoi nel Battistero del Duomo di Padova," *Trent'anni di ricerca musicologica: Studi in onore di F. Alberto Gallo* (1996), 381-412.

—Farmer, Henry George, "An Early Greek Pandore," *Journal of the Royal Asiatic Society of Great Britain and Ireland*, No. 2 (Oct 1949), 177 - 179.

—Farmer, Henry George, *Islam* (Musikgeschichte in Bildern, Band III: Musik des Mittelalters und der Renaissance / Lieferung 2), VEB Deutscher Verlag für Musik, Leipzig (1966).

—Federici, Fortunato, ed., *La esposizione del Simbolo degli Apostoli di Fra Domenico Cavalca*, 2 vol., Silvestri: Milano (1842).

—Felicetti, Stefano, "Frate Giovanni da Verona *magister lignaminis* in Umbria", *Il legno nell'arte. Tarsie e intagli d'Italia*, I, Treviso (2005), 28 - 42.

—Ferrari, Gabriele, *Il Concerto degli Angeli: Gaudenzio Ferrari e la cupola del Santuario di Saronno*, Milano: Amilcare Pizzi (1990).

—Féraud, Olivier, "From Roman to Romanesque Lutes. An Archeomusical Research on the History of Western Lutes Before the 13th Century," *SUMMA* No. 8 (2016), 133-165.

—Fleck, Cathleen, "The Cultural Politics of the Papal Library at Avignon : The Meaning and Movement of the Bible of Anti-Pope Clement VII," in Hamesse, J., ed., *La vie culturelle, intellectuelle et scientifique à la cour des papes d'Avignon,* Turnhout: Brepols (2006), 65-85.

—Fleck, Cathleen, *The Clement Bible at the Medieval Courts of Naples and Avignon, A Story of Papal Power, Royal Prestige and Patronage*, Farnham: Ashgate (2010).

—Fleischhauer, Günther, *Etrurien und Rom*, Musikgeschichte in Bildern, Band II: Musik des Altertums, Lieferung 5, Leipzig: VEB Deutscher Verlag für Musik (1964).

—Foffani, G., ed., *Padua Baptistry of the Cathedral: Frescoes by Giusto di Menabuoi*, Deganello (1988).

— Fontani, Francesco, ed., *Di Vegezio Flavio dell'arte della guerra libri IV*, Firenze: Marenigh (1815).

—Forrester, Peter, "Citterns and their Fingerboard", *Lute Society Journal* XXIII (1983), 15-20.

—Forrester, Peter, "Some Notes on Cittern Fingerboards and Stringing", *FoMRHI Quarterly*, Bulletin 32, (1983), 19-22.

—Forrester, Peter, "Citterns and Chitarra battente," *FoMRHI Quarterly*, Bulletin 44, Comm. 740 (1986,) 63 - 64.

—Forrester, Peter, "The Cittern in Italy," *FoMRHI Quarterly*, Bulletin 50, Comm. 858 (1988,) 59 - 63.

—Forrester, Peter, "Italian Citterns in the Museum of the Paris Conservatoire", *Lute Society Journal* xxxi (1991), 8-19.

—Forrester, Peter, "Wood and Wire" http://www.cittern.theaterofmusic.com/articles/wood.html, accessed 09.03.2018 (originally published in *Lute News: The Lute Society Magazine*. On-line edition corrected and amended by Andrew Hartig per Peter Forrester, February, 2006.)

—Fowden, Garth, *Qusayr 'Amra: Art and the Umayyad Elite in Late Antique Syria*, Berkeley: University of California Press (2004).

—Friedman, Lionel, *Text and Iconography for Joinville's Credo*, Cambridge: Mediaeval Academy of America (1958).

—Galilei, Vincenzo, *Dialogo di Vincentio Galilei Nobile Fiorentino Della Musica Antica, et Della Moderna Fiorenza 1581,* facsimile edition < http://imslp.org/wiki/ Dialogo_della_musica_(Galilei%2C_Vincenzo)> (accessed 15.01.2018).

—Galilei, Vincenzo, *Dialogue on Ancient and Modern Music*, Palisca, Claude, ed. and transl., Music Theory Translation Series, New Haven: Yale University Press (2003).

—Gallo, F. Alberto, "Die Kenntnis der griechischen Theoretikerquellen in der italienischen Renaissance," in Zaminer, herausg., *Geschichte der Musiktheorie, Bd 7, Italienische Musiktheorie im 16. und 17. Jahrhundert,* Darmstadt: Wissenschaftliche Buchgesellschaft (1989), 9-38.

—Gallo, F. Alberto, "Greek Text and Latin Translations of the Aristotelian Musical Problems: A Preliminary Account of the Sources," in Barbera, André, *Music Theory and Its Sources,* Notre Dame: University of Notre Dame Press (1990), 190-196.

—Gallo, F. Alberto, *Music in the Castle: Troubadours, Books and Orators in Italian Courts of the Thirteenth, Fourteenth and Fifteenth Centuries*, Chicago and London: University of Chicago Press (1995).

—Galpin, Francis William, *Old English instruments of music, their history and character*, London: Methuen & Co., ltd. (1910).

—Gamboso, Vergilio, ed., *Giuliano da Spira, Officio ritmico e vita seconda*, Padova: Edizioni Messaggero (1985).

—Gatti, Evan, "In a Space Between: Warmund of Ivrea and the Problem of (Italian) Ottonian Art", Peregrinations: Journal of Medieval Art and Architecture 3, 1 (2010): 8-48 (http://digital.kenyon.edu/perejournal/vol3/iss1/2; accessed 15.05.2017).

—Gavrili, Paraskevi, "A New Approach to the Mosaic from Mariamin, Syria, with Female Musicians: Theatrical Performance or Private Banqueting Concert?", in Eichmann, Hickmann, Koch, eds., *Studien zur Musikarchäologie* VII (2010), 9-16.

—Geiringer, Karl, *Die Flankenwirbelinstrumente in der bildenden Kunst der Zeit zwischen 1300 und 1550*, Tutzing (1979 = Diss. Wien 1923).

—Geiringer, Karl, *Musical Instruments, Their History in Western Culture from the Stone Age to the Present Day*, London: George Allen & Unwin (1943).

—Genesi, Mario, "Un breve saggio di polifonia rinascimentale: il 'canone' a due voci del coro ligneo di Giovanni da Verona nel Duomo di Lodi", *Archivio storico lodigiano* a. CVI, Lodi: Società Storica Lodigiana (1987), 73-87.

—Gentilini, Giancarlo, "Luca (di Simone) della Robbia", in *Grove Art Online*, https://doi.org/10.1093/ga0/9781884446054.article.T072350 (2003).

—Giglioli, A., "Il Duomo di Ferrara," in Toesca, Pietro, *Storia dell'Arte italiana, I, Il Medioevo* (1913 - 1927), 202-206.

—Goldschmidt, Adolf, Wietzmann, Kurt, *Die byzantinischen Elfenbeinskulpturen des 10. bis 13. Jahrhunderts, 1. Kästen*, Berlin (1930).

—Gonzati, Bernardo, *La Basilica di S. Antonio di Padova descritta ed illustrata,* Padova: Antonio Bianchi (1852-1853).

—Gotti, Aurelio, ed., *L'Eneide di Virgilio volgarizzata nel buon secolo della lingua da Ciampolo di Meo degli Ugurgieri senese*, Firenze: Le Monnier (1858).

—Grijp, Louis, "Fret Patterns of the Cittern", *Galpin Society Journal*, Vol 34 (1981), 62-97.

—Grunfeld, Frederic, *The Art and Times of the Guitar*, New York: MacMillan (1969).

—Gualteruzzi da Fano, Carlo, *Libro di novelle, et di bel parlar gentile. Nel qual si contengono cento nouelle altrauolta mandate fuori*, Di nuouo ricorrette. Con aggiunta di quattro altre nel fine. [...], Firenze: Giunti (1572).

—Gushee, Lawrence, "Questions of Genre in Medieval Treatises on Music", in Arlt, Lichtenhahn, Oesch, eds., *Gattungen der Musik in Einzeldarstellungen: Gedenkschrift Leo Schrade*, I, Bern (1975).

—Hammerstein, Reinhold, "Instrumenta Hieronymi", *Archiv für Musikwissenschaft* xvi (1959), 117 - 134.

—Hammerstein, Reinhold, *Die Musik der Engel*, Bern / München: Francke Verlag (1962).

—Hardy, Thomas Duffus, "Further report on the Utrecht Psalter," Eyre and Spottiswoode, London (1874).

—Hartig, Andrew, "The Wire Connection, A Brief Survey of Plucked Wire-Strung Instruments, Part 1", *Lute Society of America Quarterly* Vol. xliv No. 3 (2009), 42-44.

—Hartig, Andrew, "Who's Afraid of the Diatonic Cittern?", *Lute Society of America Quarterly*, Vol. xlvi No. 3 (2011), 45-49.

—Haskins, Charles Homer. *The Renaissance of the Twelfth Century*, Cambridge, Massachusetts: Harvard University Press (1927).

—Hayes, Stephen, Lefferts, Peter, Mariani, Angela and Mathiesen, Thomas, *Thesaurus Musicarum Latinarum* online (1994). <http://boethius.music.indiana.edu/tml/3rd-5th/MARDNP9> accessed 10.02.2016.

—Heck, Thomas, "Musical Iconography: Traditions, Techniques and Trends", in Heck, Thomas, ed., *Picturing Performance: The Iconography of the Performing Arts in Concept and Practice,* Rochester: University of Rochester Press (1999), 91-112.

—Heilbronn, Denise, "Master Adam and the Fat-Bellied Lute (*Inf.* XXX)", *Dante Studies* No. 101 (1983), 51-65.

—Helas, Philine, *Lebende Bilder in der italienischen Festkultur des 15. Jahrhunderts*, Berlin: Akademie Verlag (1999).

—Herczog, Johann, "*Gli strumenti musicali nell' 'Adorazione dei Magi': motivi di una studiata parsimonia*", in Lacché, Mara, ed., *Il mondo cortese di Gentile da Fabriano e I'immaginario musicale: La cultura musicale e artistica nel Quattrocento europeo e la sua riscoperta in musica moderna e contemporanea*, Roma: Aracne (2008).

—Herlinger, Jan, ed., *Prosdocimo de' Beldomandi, Brevis Summula Proportionum Quantum Ad Musicam Pertinet and Parvus Tractatulus de Modo Monacordum Dividendi*, Lincoln and London: University of Nebraska (1987).

—Hermann, H., *Die italienischen Handschriften des Dugento und Trecento (Beschreibendes Verzeichnis der illumierten Handschriften in Österreich: Wien, Nationalbibliothek 8, V, 3. Teil)*, Leipzig (1930), 250 - 288.

—Heyde, Herbert, *Musikinstrumentenbau, 15.-19. Jahrhundert: Kunst - Handwerk - Entwurf,* Leipzig: VEB Deutscher Verlag Fur Musik (1986).

—Hickmann, Ellen, "Musikinstrumente in Cassiodors Schrift 'De musica'", in Katzenberger, G., ed., *Festschrift H. Sievers*, Tutzing (1978), 73-80.

—Higgins, R. A., Winnington-Ingram, R. P., "Lute-Players in Greek Art", *Journal of Hellenic Studies* lxxxv (1965), 62 - 73.

—Hind, Arthur Mayger , *Early Italian Engraving, A Critical Catalogue with complete Reproduction of All the Prints Described*, Vol. I-IV, London: B. Quaritch, (1938).

—Hind, Arthur Mayger , *Early Italian Engraving, A Critical Catalogue with complete Reproduction of All the Prints Described*, Vol. V-VII, London: B. Quaritch, (1948).

—Hirsch-Reich, Beatrice, "The Symbolism of Musical Instruments in the Psalterium X Chordarum of Joachim of Fiore and its Patristic Sources", *Studia Patristica* Vol IX, Part III, Berlin: Akademie-Verlag (1966), 540 - 551.

—Homo-Lechner, Catherine, *Etude sur l'iconographie musicale du psautier de Stuttgart (IXe siècle)*, thesis, Paris: Université Panthéon-Sorbonne (1981).

—Homo-Lechner, Catherine, *Les cordophones dans l'Occident médiéval du VIe au XII siècle*, doctoral thesis, Paris: Université Panthéon-Sorbonne (1992).

—Hourihane, Colum, *King David in the Index of Christian Art*, Princeton University Press (2002).

—Hourihane, Colum, ed., *Grove Encyclopedia of Medieval Art and Architecture*, Oxford: Oxford University Press (2012).

—Hourihane, Colum, ed., *The Routledge Companion to Medieval Iconography*, London: Taylor and Francis (2017).

—Howell, Standley, "Paulus Paulirinus of Prague on Musical Instruments," *Journal of the American Musical Instrument Society* IV - VI (1979-80), 9-36.

—Ivanoff, Vladimir, "Cister," in Finscher, Ludwig, ed., *Die Musik in Geschichte und Gegenwart*, Sachteil 2, Bärenreiter Kassel (1995), 886 - 898.

—Jacobus, Laura, *Giotto and the Arena Chapel: Art, Architecture and Experience*, Turnhout: Brepols (2008).

—Jahnel, Franz, *Die Gitarre und ihr Bau: Technologie von Gitarre, Laute, Mandoline, Sister, Tanbur und Saite*, Frankfurt am Main: Verlag Das Musikinstrument (1963).

—Jahnel, Franz, *Manual of Guitar Technology: the History and Technology of Plucked String Instruments*, Westport: Bold Strummer Ltd. (1981).

—Jan, Karl von, "Die griechischen Saiteninstrumente," *Jahresbericht des Gymnasiums zu Saargemünd*, Druck von B. G. Teubner (1882), 3-36.

—Jones, Sterling, *The Lira da Braccio*, Bloomington: Indiana University Press (1995).

—Kallendorf, Craig, ed. and transl., *Humanist Educational Treatises*, Cambridge: Harvard University Press (2002).

—Kapitaikin, Lev, *The Twelfth-Century Paintings of the Ceilings of the Cappella Palatina, Palermo*, unpublished PhD thesis, Oxford University (2011).

—Klein, Peter, *Introduction and Codicological Description, In Apocalypsin commentarius, Manchester, The John Rylands University Library, Latin MS 8,* München: Edition Helga Lengenfelder (1990).

—Klein, Peter, "Introduction: The Apocalypse in Medieval Art," in Emmerson, Richard, McGinn, Bernard, *The Apocalypse in the Middle Ages*, Ithaca: Cornell University Press (1992), 159-199.

—Koster, John, "Strings and Theories of Stringing in the Times of the Citole and Early Cittern," in Robinson, Speakman and Buehler-McWilliams, eds., *The British Museum Citole: New Perspectives*, London: The British Museum (2015), 84-92.

—Kottman, D., "Die Datierung der romanischen Wandmalereien von Castel Sant'Elia. Zum Stand der Forschung", in *Zeiten - Sprünge. Aspekte von Raum und Zeit in der Kunst vom Mittelalter bis zur Gegenwart. Studien zu Ehren von Peter K. Klein zum 65. Geburtstag*, hgg. v. Nicola Hille, Monika E. Müller, Regensburg: Schnell und Steiner 2007, 11-27.

—Lacché, Mara, ed., *Il mondo cortese di Gentile da Fabriano e I'immaginario musicale: La cultura musicale e artistica nel Quattrocento europeo e la sua riscoperta in musica moderna e contemporanea*, Roma: Aracne (2008).

—Lambert, Gisèle, *Les Premières Gravures Italiennes: Quattrocento début du Cinquecento*, Paris: Éditions de la Bibliothèque Nationale de France (1999).

—Landels, John, *Music in Ancient Greece and Rome*, Routledge London (1999).

—Lanfranco, Giovanni Maria, *Scintille di Musica*, Brescia: Lodovico Britannico (1533).

—Lawergren, Bo, “The Cylinder Kithara in Etruria, Greece, and Anatolia: The Cylinder Kithara,” *Imago musicae*, Vol. I (1984), 147 - 174.

—Lawergren, Bo, “A Lyre Common to Etruria, Greece, and Anatolia: The Cylinder Kithara,” *Acta musicologia*, Vol. 57 (1985), 25 - 33.

—Lawergren, Bo, “Etruscan musical instruments and their wider context in Greece and Italy,” *Etruscan Studies - Journal of the Etruscan Foundation*, Vol. 10 (2007), 119 - 138.

—Le Cerf, G., *Les traités d’Henri-Arnaut de Zwolle et divers anonymes (MS. B.N. Latin 7295)*, Paris: Editions Auguste Picard (1932), (reprint Bärenreiter 1972).

—Lee, Barbara, *Giovanni Maria Lanfranco's Scintille di musica and its relation to 16th-century music theory*, diss. Cornell University (1961)

—Lenzo, Denise, *Il rapporto testo e immagine nel Medioevo, con un inedito esercizio di analisi sulle Tragedie di Seneca nel manoscritto angioino C.F. 2.5 della Biblioteca dei Gerolamini di Napoli*, Tesi di dottorato, Università degli Studi di Catania (2011).

—Levasti, Arrigo, ed., *Beato Iacopo da Varagine, Leggenda Aurea, Volgarizzamento toscano del Trecento*, vol. 3, Firenze: Libreria Editrice Fiorentina (1924-1926).

—Levi d’Ancona, Mirella, “A Masterpiece by Girolamo dai Libri”, *Yearbook Victoria and Albert Museum* Vol 1 (1969), 16-26.

—Lockwood, Lewis, *Music in Renaissance Ferrara: The Creation of a Musical Center in the Fifteenth Century*, Cambridge: Harvard University Press (1984).

—Loewen, Peter, *Music in Early Franciscan Thought*, The Medieval Franciscans Vol. 9, Leiden: Brill (2013).

—Looney, Dennis, Shemer, Deanna, eds., *Phaeton’s Children: The Este Court and Its Culture in Early Modern Ferrara*, Tempe: Arizona Center for Medieval and Renaissance Studies (2005).

—Lorenzetti, Stefano, "Viola da mano and viola da arco: terminology in the Cortegiano (1528) of Baldassar Castiglione", in Meucci, Renato, ed., *Liuteria Musica e Cultura 1996*, Cremona: Turris Editrice (1996), 2-23.

—Lustig, Monika, *Gitarre und Zister: Bauweise, Spieltechnik und Geschichte bis 1800, 22. Musikinstrumentenbau-Symposium Michaelstein*, Dössel: Verlag Janos Stekovics (2004).

—Lütgendorff, Willibald, *Die Geigen und Lautenmacher vom Mittelalter bis zur Gegenwart*, Frankfurt am Main: Frankfurter Verlags-Anstalt a.g. (1922).

—Maas, Martha and Snyder, Jane M., *Stringed Instruments of Ancient Greece*, Yale University Press (1989).

—Mancini, Franco, ed., *Poeti perugini del Trecento (Codice Vaticano Barberiniano Latino 4036),* Perugia: Guerra (1996-97).

—Marchi, Marta Boscolo, *La cattedrale di Ferrara in età medievale: fasi costruttive e questioni iconografiche*, Padova: Università degli Studi di Padova, diss. (2011).

—Marchi, Marta Boscolo, *La cattedrale di Ferrara in età medievale: fasi costruttive e questioni iconografiche*, Roma: L'Erma di Bretschneider (2016).

—Marcuse, Sibyl, *A Survey of Musical Instruments*, David and Charles, Newton Abbot London (1975).

—Margerum, Alice, *Situating the Citole c. 1200-1400*, Doctoral thesis, London Metropolitan University (2010).

—Marti, Mario, ed., *Poeti giocosi del tempo di Dante*, Milano: Rizzoli (1956).

—Martini, Alberto, "The Early Works of Bartolomeo della Gatta", *The Art Bulletin*, Vol. 42, No. 2 (1960), 133-141.

—Martini, P. Supino, "Origine e diffusione della Bibbia altantica," in Maniaci, M., Orofino, G., *Le Bibbie atlantiche. Il libro delle Scritture tra monumentalità e rappresentazione*, Catalogo della mostra (Milano 2000), 39-43.

—Massafra, Maria Grazia, Margiotta, Anita, *Un percorso fotografico a Palazzo Braschi 1870-1987: Oggi sede del Museo di Roma,* Roma: Gangemi Editore (2002).

—Mathiesen, Thomas, *Apollo's Lyre: Greek Music and Music Theory in Antiquity and the Middle Ages*, University of Nebraska Press, Lincoln (1999).

—McGee, Timothy, *Medieval Instrumental Dances*, Bloomington: Indiana University Press (1989).

—McGee, Timothy, *The Ceremonial Musicians of Late Medieval Florence*, Bloomington: Indiana University Press (2009).

—McKinnon, James W., *The Church Fathers and Musical Instruments*, diss. Columbia University, (1965).

—McKinnon, James W., "Musical Instruments in Medieval Psalm Commentaries and Psalters", *Journal of the American Musicological Society*, Vol. 21, No. 1 (Spring, 1968), pp. 3-20.

—McKinnon, James W., "Music Iconography: A Definition", *RIdIM / RCMI Newsletter*, Vol. 2, No. 2, (Spring 1977), 15 - 18.

—McKinnon, James W., *Music in Early Christian Literature*, Cambridge University Press (1987).

—McKinnon, James W., "Christian Antiquity", in McKinnon, James W., ed., *Antiquity and the Middle Ages: From Ancient Greece to the 15th Century*, Prentice Hall, Englewood Cliffs (1990), 68 - 87.

—McKinnon, James W., ed., *The Early Christian Period and the Latin Middle Ages*, (Strunk, Oliver, and Treitler, Leo, eds., *Source Readings in Music History*, revised Edition, Vol 2; first edition: *Antiquity and the Middle Ages*, Vol. 1), Norton, New York (1950) rev. 1998.

—Metford, J.C.J., *Dictionary of Christian Lore and Legend*, London: Thames and Hudson (1983).

—Meucci, Renato, "Early Evidence of the Viola da Gamba in Italy", in Coin, C. and Orlando, S., eds., *The Italian Viola da Gamba: Proceedings of the International Symposium on the Italian Viola da Gamba*, Edition Ensemble Baroque de Limoges (2002).

—Meyer, Paul, *Daurel et Beton, chanson de geste provençale publiée pour la première fois d'après le manuscrit unique appartenant à M. A. Didot,* Paris, Firmin Didot pour la Société des anciens textes français (1880), xxviij-xxix.

—Meyer-Baer, Kathi, *Music of the Spheres and the Dance of Death: Studies in Musical Iconology*, Princeton University Press (1970).

—Michel, Andreas, *Zistern. Europäische Zupfinstrumente von der Renaissance bis zum Historismus,* Katalog Musikinstrumenten-Museum der Universität Leipzig, Leipzig (1999).

—Michel, Andreas, "Italiensiche Zistern der Spätrenaissance", *Instrumentarium Lipsiense* (online: studia-instrumentorum.de/MUSEUM/zistern.htm; accessed 15.03.2018).

—Molina, Mauricio, "In Tympano Rex Noster Tympanizavit: Frame Drums as Messianic Symbols in Medieval Spanish Representations of the Twenty-Four Elders of the Apocalypse", *Music in Art* XXXII (2007), 93-101.

—Molina, Mauricio, "Li autres la citole mainne: Towards a Reconstruction of the Citole's Performance Practice", in Robinson, Speakman and Buehler-McWilliams, eds., *The British Museum Citole: New Perspectives*, London: The British Museum (2015), 104-110.

—Montagu, Jeremy, *Musical Instruments of the Bible*, Scarecrow Press Lanham (2002).

—Morello, Giovanni, e Pace, Valentino, *Ricchezza iconografica e committenza laica, volume di commento all'edizione in facsimile del cod. Vat. lat. 39 della Biblioteca Vaticana, Codices e Vaticanis selecti, LXI*, Milano (1984).

—Morello, Giovanni, und Stockmann, Ulrich, *Einführungsband: Eine Einführung, Neues Testament, Codex Vaticanus latinus 39 (Faksimileausgabe)*, Zürich: Belser (1984).

—Mucznik, Sonia, "Musicians and Musical Instruments in Roman and Early Byzantine Mosaics of the Land of Israel: Sources, Precursors and Significance", *Gerión* vol. 29, 1 (2011), 265-286.

—Mussafia, Adolfo, *Trattato de regimine rectoris di Fra Paolino Minorita*, Vienna-Firenze: Tendler e Vieusseux (1868).

—Musil, Alois, *Kusejr 'Amra*, Wien: Kaiserliche Akademie der Wissenschaften (1907).

—Musto, John, *A Documentary History of Naples: Medieval Naples, 400 - 1400*, New York: Italica Press (2013).

—Navarro Salazar, Maria Teresa, ed., "Un glossario latino-eugubino del Trecento," *Studi di lessicografia italiana* VII (1985).

—Nickel, Heinz, *Beitrag zur Entwicklung der Gitarre in Europa*, Haimhausen: Verlag Biblioteca de la Guitarra Bruckbauer (1972).

—O'Neill, John, ed., *The Art of Medieval Spain, A.D. 500-1200*, New York: Metropolitan Museum of Art, 1993.

—Orofino, Giulia, *I Codici Decorati dell'Archivio di Montecassino, I: I secoli VIII - X*, Istituto Polygrafico e Zecca dello Stato, Roma (1994).

—Päffgen, Peter, "Die europäische Laute nach 1500: Spieltechnik", *Musik in der Geschichte und Gegenwart Online* (1996; published online 2016), <https://mgg-online.com/article?id=mgg15621&v=1.1&q=laute&rs=id-f66c0bf5-cddb-f2cd-a3f3-d1156e274f0a> (accessed 23.12.2017).

—Page, Christopher, "Biblical instruments in medieval manuscript illustration", *Early Music* 5 (1977), 299 - 309.

— Page, Christopher, "Jerome of Moravia on the Rubeba and Viella," *Galpin Society Journal* Vol 32 (1979), 77-98.

—Page, Christopher, *Voices and Instruments of the Middle Ages: Instrumental Practice and songs in France 1100 - 1300*, Berkeley: University of California Press (1986).

—Pagès, Montserrat, "Romanesque mural painting in Catalonia," *Catalan Historical Review* 6 (2013), 45-60.

—Palisca, Claude, "G.B.Doni, Musicological Activist, and his *Lyra Barberina*, in Olleson, E., ed, *Modern Musical Scholarship*, Boston / London: Oriel Press (1980), 180-205

—Palisca, Claude, *G.B.Doni's Lyra Barberina: Commentary and Iconographical Study; Facsimile Edition with Critical Notes*, Bologna: A.M.I.S. (1981).

—Palisca, Claude, *Humanism in Italian Renaissance Musical Thought*, New Haven: Yale University Press (1985).

—Palumbo, Pietro, ed., *Sposizione del Vangelo della Passione secondo Matteo*, vol. 3, Palermo: Centro di studi filologici e linguistici siciliani (1954).

—Panczenko, Russell, "Gentile da Fabriano and Classical Antiquity", *Artibus et Historiae*, Vol. 1, No. 2 (1980), 9 - 27.

—Panum, Hortense, *Middelalderens strengeinstrumenter og deres forløbere i oldtiden*, Haase (1915); transl., revised and ed., Pulver, Jeffrey, *Stringed Instruments of the Middle Ages, Their Evolution and Development*, William Reeves London (1940 / 1971).

—Payne, Robert, *Leonardo*, New York: Doubleday (1978).

—Pfändtner, Karl-Georg, *Die Psalterillustration des 13. Jahrhunderts und beginnenden 14. Jahrhunderts in Bologna: Herkunft - Entwicklung - Auswirkung*, Neuried: Deutsche Hochschuledition Ars Una (1996).

—Pfändtner, Karl-Georg, "Zwischen Frankreich und Byzanz: Zwei Bologneser Psalter des 13. Jhdts und ihr Illustrationssystem (Bologna, Bibl. univ., ms 346 und Paris, BNF, ms Smith-Lesouëf 21)", in F. O. Büttner, ed., *The Illuminated Psalter: Studies in the Content, Purpose and Placement of its Images*, (Turnhout, 2004), 181 - 192.

—Philips, Nancy, "Classical and Late Latin Sources for Ninth-Century Treatises on Music", in Barbera, André, ed., *Music Theory and Its Sources: Antiquity and the Middle Ages*, University of Notre Dame Press (1990), 100 - 135.

—Picken, Laurence, "The Origin of the Short-Necked Lute", *Galpin Society Journal* viii (1955), 32-42.

—Pieragostini, Renata, "Unexpected Contexts: Views of Music in a Narrative of the Great Schism", *Early Music History* Vol 25 (2006) 169 - 207.

—Pio, Stefano, *Viol and Lute Makers of Venice 1490-1630*, Venice: Venice Research (2011).

—Piperno, Franco, "Italian Courts and Music", in Folin, Marco, ed., *Courts and Courtly Arts in Renaissance Italy - Art, Culture and Politics 1395-1530*, Woolbridge and New York: Antique Collector's Club (2011), 82, 89.

—Pirrotta, Nino, ed., *The Music of Fourteenth-Century Italy*, Corpus Mensurabilis Musicae 8, Rome: American Institute of Musicology (1960).

—Pirrotta, Nino, ed., "Music and Cultural Tendencies in 15th-Century Italy, *Journal of the American Musicological Society* 19, (1966), 127-161.

—Pisoni, Pier, Bellomo, Saverio, eds., *Expositione sopra l'Inferno di Dante Alligieri*, Padova: Editrice Antenore (1998).

—Pitts, Frances Lee, *Nardo di Cione and the Strozzi Chapel frescoes: Iconographic Problems in mid-Trecento Florentine Painting*, diss., Berkeley: University of California (1982).

—Poeschke, Joachim, *Die Kirche San Francesco in Assisi und ihre Wandmalereien,* Munich: Hirmer (1985).

—Poeschke, Joachim, "Orpheus - Apoll: Zur Wahrnehmung antiker Sujets in der Frührenaissance," in Zywietz, M., ed. *"Grenzgebiete": Festschrift Klaus Hortschansky zum 65. Geburtstag*, Eisenach: Verlag der Musikalienhandlung (2000), 149-163.

—Poliziano, Angelo, *The Stanze of Angelo Poliziano*, transl. Quint, David, University Park: Pennsylvania State University Press (1979).

—Ponsich, Pere, "Le Maître de Sait-Martin de Fenollar", *Les Cahiers de Saint-Michel de Cuxa*, no. 5 (1974), pp. 117-129.

—Pope, Isabel, and Kanazawa, Masakata, *The Musical Manuscript Montecassino 871: A Neapolitan Repertory of Sacred and Secular Music of the Late Fifteenth Century,* Oxford: Oxford University Press (1978).

—Prizer, William F., "Isabella d'Este and Lorenzo da Pavia, Master Instrument Maker", *Early Music History* II (1982).

—Prizer, William F., "Virtù Molto Conviente A Madonne: Isabella d'Este as a Musician," *Journal of Musicology* Vol. 17 (1999), 10-49.

—Quasten, Johannes, *Musik und Gesang in den Kulten der heidnischen Antike und christlichen Frühzeit*, Münster in Westfalen : Aeschendorf (1930).

—Raggio, Olga and Wilmering, Antoine M., *The Liberal Arts Studiolo from the Ducal Palace at Gubbio*, New York: Metropolitan Museum of Art (1996).

—Raggio, Olga and Wilmering, Antoine M., *The Gubbio Studiolo and Its Conservation,* New York: Metropolitan Museum of Art (1999).

—Ravasio, Ugo, "Il Fenomeno Cetera in Ambito Bresciano", *Liuteria e musica strumentale a Brescia tra Cinque e Seicento*, Vol. 1, Brescia: Fondazione Civiltà Bresciana (1992); online version at <http://www.liuteriabresciana.it/_dep/cetera.pdf> (accessed 15.01.2018).

—Ravizza, Victor, *Das instrumental Ensemble von 1400-1550 in Italien*, Bern: Verlag Paul Haupt (1970).

—Reese, Gustave, *Music in the Renaissance*, New York: Norton (1959).

—Remnant Mary, Marks, Richard, "A medieval gittern", *British Museum Yearbook-1*, No. 4: Music and Civilisation (1980), 83-134

—Richenhagen, Albert, *Studien zur Musikanschauung des Hrabanus Maurus*, Kölner Beiträge zur Musikforschung, Bd. 162, Regensburg: Gustav Bosse (1989).

—Roberts, Helen, "The Technique of Playing Ancient Greek Instruments of the Lyre Type," in Mitchell, T., ed., *Music and Civilisation*, The British Museum Yearbook 4, 1980, 43-76.

—Rohark, Thomas, *Intarsien: Entwicklung eines Bildmediums in der italiensichen Renaissance*, Göttingen: Vandenhoeck & Ruprecht (2007).

—Rostirolla, Giancarlo, "Pier Leone Ghezzi Disegnatore di Antiche Lire: Un Excursus tra Antiquaria, Organologia, Musicografia e Mito," *Music in Art* XXXV/ 1-2 (2010), 157-199.

—Russo, Fernando, *La parola si fa immagine: Storia e restauro della basilica orsiniana di Santa Caterina a Galatina*, Marsilio 2005.

—Sachs, Curt, *Real-Lexikon der Musikinstrumente zugleich ein Polyglossar für das gesamte Instrumentengebiet*, Berlin: Julius Bard (1913).

—Sachs, Curt, *Handbuch der Musikinstrumentenkunde*, Leipzig (1919), (repr. 1974).

—Sachs, Curt, *The History of Musical Instruments*, New York: W. W. Norton and Company (1940).

—Salies, G. Hellenkemper, "Die Datierung der Mosaiken im Grossen Palast zu Konstantinopel," *Bonner Jahrbuch* 187 (1987) 273 - 307.

—San Luigi, Ildefonso di, ed., *Delle poesie di Antonio Pucci,* vol. I-IV, Delizie degli eruditi toscani III-VI, Firenze: Cambiagi, (1772-1775).

—Santagata, Marco, ed., *Francesco Petrarca, Canzoniere*, Milano: Mondadori (1996).

—Sartori, Antonio, *Documenti per la storia della musica al Santo e nel Veneto*, Fonti e studi per la storia del Santo a Padova, v (1977).

—Schaff, Philip, *Ante-Nicene Fathers, Volume 5 Fathers of the Third Century: Hippolytus, Cyprian, Caius, Novatian*, Grand Rapids (1885), 500.

—Schapiro, Meyer, "From Mozarabic to Romanesque in Silos", *The Art Bulletin*, Vol. 21, Issue 4 (1939), 312-374.

—Schapiro, Meyer, *The Parma Ildefonsus: A Romanesque Illuminated Manuscript from Cluny and Related Works*, Monographs on Archaeology and Fine Arts (1964).

—Schapiro, Meyer, *Late Antique, Early Christian and Mediaeval Art: Selected Papers*, Vol. 3, George Braziller (1980).

—Scheller, Robert, *Exemplum: Model-Book Drawings and the Practice of Artistic Transmission in the Middle Ages (ca. 900 - ca. 1470)*, Amsterdam: Amsterdam University Press (1995).

—Scherliess, Volker, *Musikalische Noten auf Kunstwerken der italienischen Renaissance bis zum Anfang des 17. Jahrhunderts,* Hamburg: Verlag der Musikalienhandlung Karl Dieter Wagner (1972).

—Schima, Christiane, *Die Estampie: Untersuchungen anhand der überlieferten Denkmäler und zeitgenössischen Erwähnungen*, Amsterdam: Thesis Publishers Rozenberg (1995).

—Schlesinger, Kathleen, *The Precursors of the Violin Family: Records, Researches and Studies*, William Reeves London (1910).

—Schlosser, J. von, *Lorenzo Ghibertis Denkwürdigkeiten (I Commentarii)*, Berlin (1912).

—Schmitt, Annegrit, "Apokalypse des Robert von Anjou," *Pantheon*, Bd. 28 (1970), 475-503.

—Schueller, Herbert, *The Idea of Music: An Introduction to Musical Aesthetics in Antiquity and the Middle Ages*, Kalamazoo, Western Michigan University, (1988).

—Seebass, Tilman, *Musikdarstellung und Psalterillustration im früheren Mittelalter*, Francke Verlag Bern (1973).

—Seebass, Tilman, "Die Bedeutung des Utrechter Psalters für die Musikgeschichte," *Kunst- en muziekhistorische bijdragen tot de bestudering van het Utrechts Psalterium*, Dekker & Gumbert Utrecht (1973), 35 - 48.

—Seebass, Tilman, "Musikikonographie", *Musik in der Geschichte und Gegenwart Online* (1997; published online 2016), <https://mgg-online.com/article?id=mgg15783&v=1.0&q=musikikonographie&rs=id-4ac60c1a-0bce-6339-4981-f12b12a281a6> (accessed 23.12.2017).

—Segerman, Ephraim, "On Medieval and Early Renaissance Tuning Patterns," *FoMRHI Quarterly*, Bulletin 9, Comm. 89 (Oct, 1977,) 62-66.

—Segerman, Ephraim, "On Comm. 97: Cetra Fret Blocks," *FoMRHI Quarterly*, Bulletin 11, Comm. 125 (Apr. 1978,) 55-56.

—Segerman, Ephraim, "A Short History of the Cittern", *Galpin Society Journal*, Vol. 52 (Apr. 1999), pp. 77-107.

—Segre, Cesare, Bono Giamboni, *Il Libro de' Vizi e delle Virtudi e Il Trattato di Virtù e di Vizi*, Torino: Einaudi (1968).

—Settis, Salvatore, Cupperi, Walter, Bentini, Jadranka, eds., *Il Palazzo Schifanoia a Ferrara*, Mirabilia Italiae 14, Modena: Panini (2007).

—Settis, Salvatore, Paolucci, Antonio, eds., *The Tempio Malatestiano in Rimini*, Mirabilia Italiae 16, Modena: Panini (2011).

—Seznec, Jean, *The Survival of the Pagan Gods: The Mythological Tradition and Its Place in Renaissance Humanism and Art*, New York: Harper and Row (1953, originally published in French as *La Survivance des dieux antiques* 1940).

—Sill, Gertrude Grace, *A Handbook of Symbols in Christian Art*, Collier New York (1975).

—Slawomira, Zeranska-Kominek, "Bird-Like Angels Making Music in Mary's Garden: Gentile da Fabriano's Madonna and Child with Saints", *Music in Art*, Vol. 37, No. 1/2 (Spring—Fall 2012), pp. 177-190.

—Smith, M. Q., 'Anagni: An Example of Medieval Typological Decoration,' *Papers of the British School at Rome* 33 (1965), 1-47

—Smits van Waesberghe, Joseph, *Musikerziehung - Lehre und Theorie der Musik im Mittelalter*, VEB Deutscher Verlag für Musik, Leipzig (1969).

—Snider, Louis, *The Psychomachia of Prudentius*, Master's Theses, Loyola University Chicago (1938).

—Spiazzi, Anna Maria, ed., *Giusto de' Menabuoi bel battistero di Padova*, Lint Editoriale (1989).

—Stahl, William, Johnson, Richard, with Burge, E., transl., *Martianus Capella and the Seven Liberal Arts, Volume II, The Marriage of Philology and Mercury*, Columbia Univ Press, New York (1977).

—Stauder, Wilhelm, “Zur Entwicklung der Cister,” in Finscher, Ludwig, ed., *Renaissance-Studien, Helmut Osthoff zum 80. Geburtstag*, Tutzing: Schneider Verlag, (1979), 223-255.

—Steger, Hugo, *David Rex et Propheta, König David als vorbildliche Verkörperung des Herrschers und Dichters im Mittelalter, nach Bilddarstellungen des achten bis zwölften Jahrhunderts*, Verlag Hans Carl Nürnberg (1961).

—Stella, Angelo, Minisci, Alessandra, eds., *Parafrasi pavese del "Neminem laedi nisi a se ipso" di San Giovanni Grisostomo,* Firenze: Opera **del** Vocabolario Italiano (2000).

—Teviotdale, Elizabeth, “The Filiation of the Music Illustrations in a Boethius in Milan and in the Piacenza ‘Codice Magno’”, Imago Musicae v (1988), 7-22.

—Theune-Grosskopf, Barbara, “Die vollständig erhaltene Leier des 6. Jahrhunderts aus Grab 58 von Trossingen, Ldkr. Tuttlingen, Baden-Württemberg”, *Germania* Nr. 84 (2006), 93-142.

—Thomas, Thelma, ed., *Designing Identity: the Power of Textiles in Late Antiquity*, Princeton: Princeton University Press (2016).

—Throop, Priscilla, transl., *Hrabanus Maurus De Universo: The Peculiar Properties of Words and Their Mystical Significance*, Vol. II, MedievalMS Charlotte VT (2009), 203 - 208.

—Tiella, Marco, “The Violeta of S. Caterina de’ Vigri”, *Galpin Society Journal* 28 (1975), 60 - 70.

—Toesca, P., *Il medioevo, Storia dell’arte italiana*, II, Turin (1927).

—Tomei, Alessandro, “Roma: Miniatura”, in *Enciclopedia dell’Arte Medievale*, Rome: Treccani (1999)

—Trilling, James, “The Soul of the Empire: Style and Meaning in the Mosaic Pavement of the Byzantine Palace in Constantinople,” *Dumbarton Oaks Papers*, Vol. 43 (1989), 27 - 72.

—Travagli, Anna Maria Visser, *Palazzo Schifanoia e palazzina Marfisa a Ferrara*, Milano: Electa (1994).

—Tucci, Roberta, Ricci, Antonello, “The Chitarra Battente in Calabria,” Galpin Society Journal, Vol 38 (1985), 78-105.

—Turnbull, Harvey, "The Origin of the Long-Necked Lute", *Galpin Society Journal* xxv (1972), 58-66.

—Tyler, James, *The Early Guitar: A History and Handbook*, Oxford: Oxford University Press (1980).

—Tyler, James, "Cittern," Grove Music Online <https://doi.org/10.1093/gmo/9781561592630.article.05831> (2001). Accessed 12.01.2018.

—Valentiner, Wilhelm Reinhold, "The Last Judgment of the Cathedral of Ferrara," *Art Criticism* II (1954), p. 119-132.

—Van Buren, Anne, *Illuminating Fashion: Dress in the Art of Medieval France and the Netherlands 1325-1515*, New York: Morgan Library and Museum (2011).

—Van der Horst, K., Noel, W., Wüstefeld, W., eds., *The Utrecht Psalter in Medieval Art: Picturing the Psalms of David*, HES Tuurdijk (1996).

—Van Deusen, Nancy, "Medieval Organologies: Augustine vs. Cassiodor on the Subject of Musical Instruments", in La Croix, Richard, ed., *Augustine on Music: An Interdisciplinary Collection of Essays*, (*Studies in the History and Interpretation of Music*, Vol. 6,) Mellen Press / Lewiston / Queenston (1988), 53-96.

—Van Schaik, Martin, *The Harp in the Middle Ages: The Symbolism of a Musical Instrument*, Amsterdam : Editions Rodopi (1992).

—Varvaro, Alberto, ed., *Antonio Pucci, Libro di varie storie*, Atti dell'Accademia di Scienze Lettere ed Arti di Palermo, s. IV, vol. XVI, parte II, fasc. II, (1957).

—Vecchi, Giuseppe, "Educazione musicale, scuola e società nell'opera di Francesco da Barberino," *Quadrivium* 7 (1966), 5-29.

—Vecchi, Giuseppe, "Medicina e Musica, Voci e Strumenti nel 'Conciliator' (1303)," *Quadrivium* 8 (1967), 5-22.

—Vendries, Christophe, *Instruments à Cordes et Musiciens dans l'Empire Romain: Étude historique et archéologique*, Editions L'Harmattan Paris (1999).

—Vendries, Christophe, "Autour du luth d'Antinoé. Musique et culture dans l'Egypte byzantine", in Calament, Florence, Eichmann, Ricardo, Vendries, Christophe, *Le luth dans l'Égypt byzantine. La tombe de la "Prophétesse d'Antinoé" au Musée de Grenoble*, Orient-Archäologie Bd 26, Verlag Marie Leidorf GmbH, Rahden/Westf. (2012), 101-120.

—Virdung, Sebastian, *Musica getutscht*, Michael Furter Basel (1511). Facsimile edition: Niemöller, Klaus, ed., *Sebastian Virdung Musica getutscht 1511*, Bärenreiter Kassel (1970, 1983).

—Vorreiter, Leopold, "Keltische und alemannische Musikinstrumente im schweizerischen und süddeutschen Raum," *Archiv für Musikorganologie*, Jahrgang 2, (Okt 1977), 134-146.

—Wardle, Mary Angela, *Musical Instruments in the Roman World*, doctoral thesis, University of London (1981).

—Welch, Anna, *Liturgy, Books and Franciscan Identity in Medieval Umbria*, The Medieval Franciscans Vol. 12, Leiden: Brill (2015).

—Wessel, Klaus, *Koptische Kunst - die Spätantike in Ägypten*, Verlag Aurel Bongers Recklinghausen (1963).

—Wettigen, Erasmus, "Jacopo Tintoretto und die Musik", *Artibus et Historiae,* Vol. 5, No. 10 (1984), 67-119.

—Wille, Gunther, *Musica Romana: Die Bedeutung der Musik im Leben der Romer*, Amsterdam: Verlag P. Schippers (1967).

—Williams, David, and Balensuela, C. Matthew, *Music Theory From Boethius to Zarlino: A Bibliography and Guide*, (Christensen, Thomas, ed., HARMONOLOGIA No. 14), Pendragon Press, Hillsdale NY (2007).

—Williams, John, "Orientations: Christian Spain and the Art of its Neighbors", in O'Neill, John (ed.), *The Art of Medieval Spain A.D. 500 - 1200*, New York: Metropolitan Museum of Art (1993), 13-26.

—Wilmering, Antoine, *The Gubbio Studiolo and Its Conservation*, New York: Metropolitan Museum of Art (1999).

—Wilson, Blake, *Singing Poetry in Renaissance Florence: The Cantasi Come Tradition (1375–1550)*. Italian Medieval and Renaissance Studies, Florence: Leo S. Olschki (2009).

—Wilson, Blake, "Canterino and improvisatore: oral poetry and performance", in Busse-Berger, A., and Rodin, J., eds., *The Cambridge History of Fifteenth-Century Music*, Cambridge: Cambridge University Press (2015), 292-310.

—Winter, Thomas, "The *Mechanical Problems* in the Corpus of Aristotle," Faculty Publications, Classics and Religious Studies Department, 68, University of Nebraska (2007), 1-37.

—Winternitz, Emanuel, "Archeologia musicale del rinascimento nel Parnaso di Raffaello," *Rendiconti della Pontificia Accademia Romana di Archeologia*, XXVII (1952-54), 359-88; transl. as "Musical Archaeology in Raphael's *Parnassus*" in Winternitz 1967, 1979.

—Winternitz, Emanuel, "The Survival of the Kithara and the Evolution of the English Cittern: A Study in Morphology," *Journal of the Warburg and Courtauld Institutes*, Vol 24, No. 3/4 (1961), 222 - 229; reprinted in Winternitz 1967, 1979.

—Winternitz, Emanuel, *Musical Instruments and their Symbolism in Western Art*, New Haven: Yale University Press (1967, First Edition, 1979, Second Edition).

—Winternitz, Emanuel, "Images as Records for the History of Music", *London Times Literary Supplement*, June 24, 1974; reprinted in Winternitz 1979.

—Winternitz, Emanuel, *Leonardo da Vinci as a Musician*, New Haven: Yale University Press (1982).

—Woelk, Moritz, *Benedetto Antelami: Die Werke in Parma und Fidenza,* (Beiträge zur Kunstgeschichte des Mittelalters und der Renaissance Bd. 2), Münster: Rhema (1995).

—Woodfield, Ian, *The Early History of the Viol*, Cambridge: Cambridge University Press (1988).

—Wright, Laurence, "The Medieval Gittern and Citole, A Case of Mistaken Identity," *Galpin Society Journal*, Vol. 30 (1977), 8-42.

—Yawn, Lila, "The Italian Giant Bible, Lay Patronage and Professional Workmanship (11th-12th centuries)," *Les usages sociaux de la Bible, XI-XV siècles* (Paris, 2011), 162-255.

—Young, Crawford, "Zur Klassifikation und ikonographischen Interpretation mittelalterlicher Zupfinstrumente", *Basler Jahrbuch für historische Musikpraxis* VIII (1984) 67-104.

—Young, Crawford, "Lute, Gittern & Citole", in Duffin, Ross, ed., *A Performer's Guide to Medieval Music*, Bloomington: Indiana University Press (2000).

—Young, Crawford, and Kirnbauer, Martin, *Frühe Lautentabulaturen im Faksimile / Early Lute Tablatures in Facsimile*, in Reidemeister, ed., Practica Musica Band 6, Winterthur: Amadeus (2003).

—Young, Crawford, "Cytolle, Guiterne, Morache: A Revision of Terminology", in Robinson, Speakman and Buehler-McWilliams, eds., *The British Museum Citole: New Perspectives*, London: The British Museum (2015), 93-103.

—Zabughin, Vladimiro, *I Codici Istoriati di Dante nella Biblioteca Vaticana*, Alfieri Milano Roma (1921).

—Zavin, Shirley Anne, *Ferrara Cathedral Façade*, diss. Columbia University, New York (1972).

—Zimdars, Dagmar, *Die Ausmalung der Franziskanerkirche Santa Caterina in Galatina / Apulien*, München: tuduv-Studien (1988).

—Zimei, Francesco, "'Soni' per un studiolo", in Bartolomucci, Carla, ed., *Terremoti e resilienza nell'architettura aquilana. Persistenze, trasformazioni e restauro del palazzo Carli Benedetti*, Roma: Edizioni Quasar (2016, forthcoming).

—Zuth, Josef, *Handbuch der Gitarre und Laute*, Wien: Verlag der Zeitschrift für die Gitarre (1926).

CURRICULUM VITAE

Crawford Young was born in Brooklyn, New York in 1952 and graduated as Bachelor of Music from New England Conservatory (Boston) in 1976. Initially a guitar student of Robert Paul Sullivan, he was a guest tenor banjoist with the New York Philharmonic and National Symphony Orchestra under Gunther Schuller before concentrating fully on lute. He studied classical Persian music with Ella Zonis in Boston and medieval music with Thomas Binkley (Studio der frühen Musik) in 1977-1978 at Stanford University (Palo Alto) prior to joining the medieval quartet Sequentia in Cologne for a three-year stint.

Young was a founding member of Boston-based *Project Ars Nova* and director the *Ferrara Ensemble* of Basel (*Diapason d'Or de l'Année* 1996, finalist for Gramophone's Early Music Recording of the Year). A 4-CD box set Figures of Harmony - of collected French *Ars subtilior* recordings - of the latter ensemble's work was released on the Arcana label in 2015. He worked in lute duo format with Karl-Ernst Schröder (*Amours amours amours: Lute Duos c. 1500*, re-released in 2015), and from 2004-2012 accompanied countertenor Andreas Scholl in recitals of English lute/folk songs across Europe and Australia, as well as directing a recording, with the same artist, of Oswald von Wolkenstein. Long-standing performance collaborations have been with Assisi-based Ensembles *Micrologus* and *Medusa* / Patrizia Bovi.

Research publications of Crawford Young include chapters in *Basler Jahrbuch für historische Musikpraxis*, *Companion to Medieval and Renaissance Music*, *Performer's Guide to Medieval Music*, *Sources of Early Lute Music in Facsimile* (in collaboration with Dr. Martin Kirnbauer), as well as the articles "Antiphon of the Angels: Angelorum tripudium psalat," in *Recercare*, and "Cytolle, gittern, morache - A Revision of Terminology," in *The British Museum Citole: New Perspectives*.

A frequent guest lecturer and performer at academic institutions and music festivals in Europe, North America and Australia, Young pursued teaching activity at the *Schola Cantorum Basiliensis* for 35 years, including the following specialties: Medieval/Early Renaissance Lute, Cantus firmus improvisation, Organology to 1530, Ear training, Ensemble practice to c. 1520, and Introduction to Medieval Music, as well as analytical seminars in

selected 14th- and 15th c. repertories.