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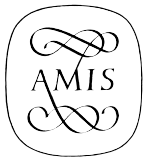

The British Museum Citole: An Organological Study*

Kathryn Buehler-McWilliams

The medieval citole housed in the British Museum is unique, valuable both as a surviving musical instrument and an exceptional work of medieval art (fig. 1).[1] As such, it is mentioned frequently in both musicological and art historical texts.[2] However, these references seldom go beyond a cursory acknowledgement of its existence, or a peek at its long and fascinating history. Similarly, it has been strangely bypassed in the early music revival. Until recently, thumbhole citoles, of which this is a splendid example, were largely ignored by makers, and consequently by players.[3] The present article considers the British Museum citole as

* I thank John Cherry and James Robinson, curators at the British Museum, for allowing me to examine the citole multiple times, and the team of scientists and conservators working on the citole for allowing me to see their work in progress and to publish some of the results in this article. I am especially indebted to Alice Margerum, for her assistance and for generously sharing her findings with me; her work will appear as "The Distribution, Dispersal and Decline of the 'Citole' in the Latin West, circa 1200–1400" (PhD diss., London Metropolitan University, forthcoming).

1. British Museum, Department of Prehistory and Europe, 1963, 10-2, 1. The known provenance of this instrument is outlined in Appendix 1.

2. The one article of significant length about this instrument is Mary Remnant and Richard Marks, "A Medieval 'Gittern,' " in *Music and Civilisation*, ed. T. C. Mitchell, *British Museum Yearbook* 4 (1980): 83–134. The British Museum citole is discussed briefly in the following musicological texts: Francis Galpin, *Old English Instruments of Music* (London: Methuen & Co., 1910), 23; "English Medieval Gittern," *British Museum Quarterly* 29 (1964–65): 35–36; Emanuel Winternitz, *Musical Instruments of the Western World* (London: Thames & Hudson, 1966), 47–50; Jeremy Montagu, *The World of Medieval and Renaissance Musical Instruments* (Newton Abbot: David & Charles, 1976), 30–33; *The New Grove Dictionary of Music and Musicians*, 2nd ed., s.v. "Citole," by Laurence Wright; Carey Fleiner, "Dulcet Tones: Changing a Gittern into a Citole," *British Museum Magazine* 53 (Autumn 2005): 45. It is mentioned in these art historical texts: Frederic Grunfeld, "Last of the Gitterns," *The Connoisseur* 212 (1982): 97–99; Jonathan Alexander and Paul Binski, eds., *Age of Chivalry: Art in Plantagenet England 1200–1400* (London: Royal Academy of Arts in association with Weidenfeld and Nicolson, 1987), 426; John Cherry, *Medieval Decorative Art* (London: Trustees of the British Museum, 1991), 2–9.

3. A conference hosted by the Schola Cantorum and Historisches Museum in Basel in 2005 may be a turning point. It brought together scholars, builders, and players to consider the theme "Citole, Guiterne, Chitarra saracenica? 'Peripheral' Plucked Instruments of the Middle Ages: Key Research Questions."

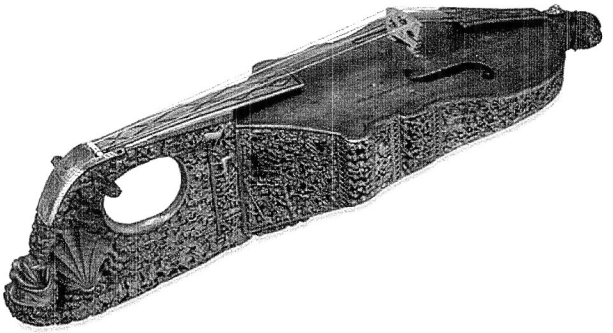

FIGURE 1. British Museum citole, Department of Prehistory and Europe 1963, 10-2, 1; photograph reproduced by kind permission of the British Museum.

having been a functional musical instrument, and attempts to reconstruct its original configuration by studying its structure and the changes that have been made to it. This investigation deepens our understanding of medieval string instruments, and will allow modern-day builders to create viable reproductions of the citole, restoring a voice to an instrument that, in its present state, will never speak again.[4]

A citole is a type of plucked string instrument popular in Europe in the thirteenth and fourteenth centuries. It has a short neck and its body shape is not rounded,[5] instead varying from a pointy holly-leaf shape to a rounded guitar shape, with countless variations in between. Some citoles

4. The British Museum citole is unplayable in its current state. Not only is its fingerboard so warped that the strings lie flat against its hump, but parts of the instrument are so fragile that it would be unwise to subject it to tension. The important historical value of the medieval body with all of its later additions dictates that its best role is as a museum piece. The author has created a functional replica of the instrument based on many of the theories discussed in this paper.

5. Rounded-body instruments are categorized as lutes and gitterns. For much of the twentieth century the nomenclature of citoles and gitterns was confused. Laurence Wright matched the correct instrument with its correct name: a gittern has a rounded back and body, like a small lute, while a citole can have a variety of shapes. See "The Medieval Gittern and Citole: A Case of Mistaken Identity," *Galpin Society Journal* 30 (1977): 8–41. See also Crawford Young, "Lute, Gittern, and Citole," in *A Performer's Guide to Medieval Music*, ed. Ross Duffin (Bloomington: Indiana University Press, 2000), 355–73. It is only since August 2005 that the citole in the British Museum has been displayed as a citole rather than a gittern.

in iconography are essentially plucked fiddles, with a flat back and simple neck. Others have an unusual tapered body, the deepness of which continues up the back of the neck, with the large expanse thus created being pierced with a hole through which the player's thumb passes (fig. 2). The majority of citoles in iconography, however, are ambiguous, and could be interpreted either as simple-necked citoles or as crudely depicted thumbhole citoles. Contrary to the impression given by the kinds of reproductions now being built, an enumeration of indisputable simple-necked citoles and indisputable thumbhole citoles in iconography shows that the thumbhole citole was a common and well-established form.[6]

A unifying feature of these varied depictions of citoles is a consistent playing style: the instrument is cradled in the arms, the right arm coming up from beneath the lower bout to play the strings with a large plectrum. Daunting as the thumbhole may appear, it is surprisingly non-restrictive to playing, even allowing the performer to make small shifts out of first position. Many iconographic thumbhole citoles have short fingerboards with one or two frets above the hand, and it is possible to reach these frets by bringing the thumb to the front edge of the thumbhole. The thumbhole citole is particularly apt for playing while standing up, since the portion of the neck behind the thumbhole rests comfortably against the player's left arm, providing stability without the use of a strap. Indeed, citoles are often paired with fiddles and portrayed being played by standing minstrels who are accompanying dancers.[7]

The British Museum citole dates from the early fourteenth century, a date coinciding with the zenith of the citole in English iconography and source records.[8] It is the only surviving citole, and the oldest, most intact European necked chordophone to survive through centuries of human

6. See Appendix 2 for a discussion of citoles in iconography and a list of thumbhole citoles.

7. The combination of citole and fiddle occurs frequently in the Queen Mary Psalter of the early fourteenth century (British Library Royal MS 2 B. vii, fols. 3v, 174r, 203r, 282r, 303v).

8. The best evidence for the date of the British Museum citole comes from comparing its decoration to that of other surviving medieval art. The strongest parallels are found in East Anglian art from the early fourteenth century, including the many manuscripts produced there and carvings such as the Winchester Choir Stalls, made by a Norfolk craftsman in 1309. This subject is explored more fully in the author's master's thesis: Kathryn Buehler, "Retelling the Story of the English Gittern in the British Museum: An Organological Study, ca. 1300–Present" (master's thesis, University of Minnesota, 2002).

FIGURE 2. Citole and fiddle carvings, Norwich Cathedral, cloister vault boss, ca. 1326–36; photograph by Alice Margerum, 2006.

contact.[9] The walls of this remarkable instrument are covered in ornate, small-scale carvings in high relief. It currently bears a violin soundboard, fingerboard, tailpiece, bridge, and other fittings. A silver plate with the royal coat of arms covering the pegbox and a lion's head stud securing the tailgut, the stud's anchoring mount engraved with "IP 1578" (see fig. 8), link the instrument to Queen Elizabeth I and provide a date for some of the alterations.[10]

Although the anachronistic violin top draws much attention to itself, it really constitutes a fairly innocuous alteration to the instrument. This

9. Frederick Crane, *Extant Medieval Musical Instruments* (Iowa City: University of Iowa Press, 1972), 14–15.

10. The silver pegbox cover is engraved with the Tudor coat of arms and the bear and ragged staff used by Robert Dudley, Earl of Leicester, Elizabeth's court favorite. Although no records exist to confirm that the instrument was connected with Elizabeth and Dudley, experts at the British Museum have examined the silverwork and found it to be appropriate for the time. The pegbox suggests an initial conversion into an early three-string violin, which would also have been appropriate for the Tudor court at this time (see Appendix 3). The social history of Elizabeth's court, into which this instrument could have fit, is explored in Buehler, "Retelling the Story of the English Gittern in the British Museum."

is in part due to the original structure of the instrument. As was common for European string instruments in the Middle Ages, the body of the British Museum citole was carved out of one piece of wood: back, sides, neck, and peg area are a single piece of boxwood, with minor exceptions, which will be noted below. The soundboard, fingerboard, bridge, and other medieval fittings were attached to the body. For the most part, it is only these additions that have been replaced and altered through the centuries; the original body remains remarkably intact. Consequently, the changes that have been made to the body, for instance at the peg area, are most informative in creating a chronology for the instrument and determining its original configuration.

The British Museum citole has a complicated form (fig. 3). From the front, it is approximately the same size and shape as a violin: it is 61 cm long and 18.6 cm wide at the lower bouts. It has rounded lower bouts, but lacks C bouts, and its shoulders are angled into the neck. The tailpiece end has an extension in the shape of a trefoil, or three-lobed finial. From the side, however, the citole is very unlike a violin, for it is a wedge shape that is narrowest at the tailpiece end (3 cm) and widest at the nut (14.7 cm). The deep expanse of the neck is pierced by the thumbhole. The sides of the instrument, from the narrow strips near the trefoil to the large surfaces on the shoulders and surrounding the thumbhole, are carved with figures and foliage. The peg end is surmounted by a magnificent dragon with bared teeth and large, bat-like wings. The back has an intriguing shape, with a central ridge extending from the base of the trefoil up to the back of the neck, gaining prominence and height as it goes (fig. 4). This keel-shaped back is undecorated, with the exception of a small patch of carving at the base of the neck that tastefully relates it to the rest of the instrument.

The British Museum citole has often been condemned as a musical instrument for qualities attributed to its construction and ornate decoration. In his description of 1776, John Hawkins wrote: "Notwithstanding the exquisite workmanship of it, the instrument produces but a close and sluggish tone, which considering the profusion of ornament, and the quantity of wood with which it is encumbered, is not to be wondered at."[11] Modern writers have continued to question whether the citole

11. John Hawkins, *A General History of the Science and Practice of Music* (London: T. Payne and Son, 1776), 2:687. Hawkins thought the instrument to be an unusual early violin, and did not realize it was originally a plucked instrument. Galpin, writing in 1910, agreed with

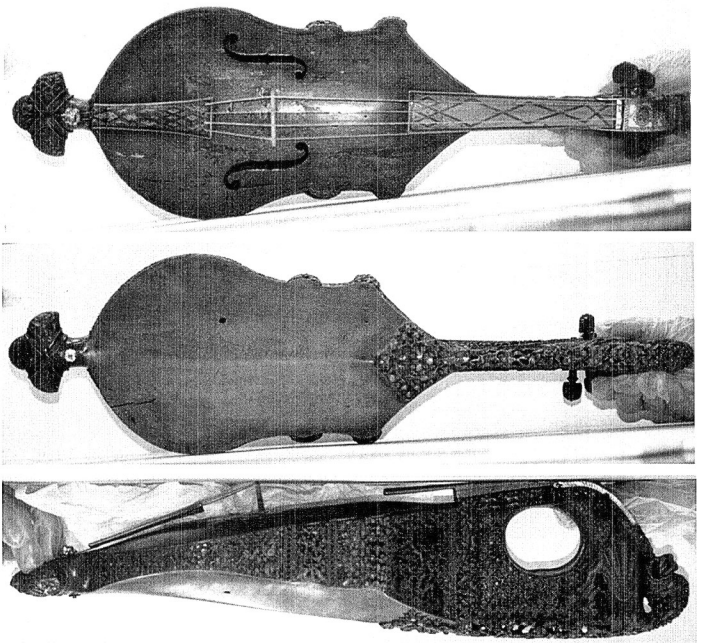

FIGURE 3. Front, back, and profile of the British Museum citole; photographs reproduced by kind permission of the British Museum (photographs by Lewis Jones and Alice Margerum).

could have been successful as a musical instrument, or whether such an instrument was even intended for musical use. However, X-ray images attest to the remarkable care that has been taken to create an instrument both stunning in appearance and refined in construction.[12]

Hawkins, but added that if played with a plectrum "it was pleasant to hear": *Old English Instruments*, 23.

12. The British Museum took numerous X rays of the instrument in August 2006. I was able to study them in February 2007, but unfortunately they were not ready for publication at the time this article went to print. They will be published in a forthcoming report by the British Museum.

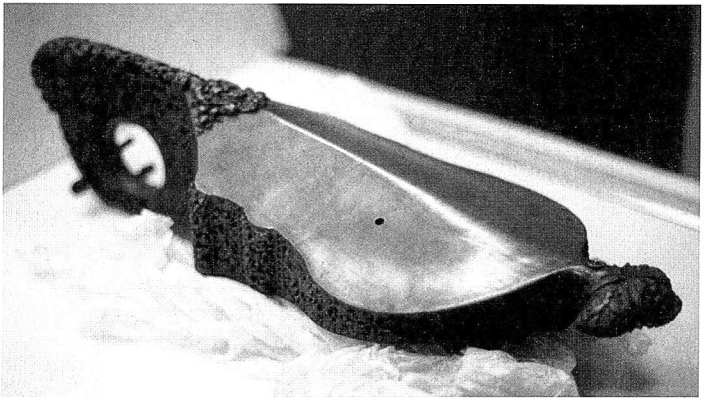

FIGURE 4. Keel-shaped back of the British Museum citole; photograph reproduced by kind permission of the British Museum (photograph by Lewis Jones and Alice Margerum).

Despite the decorative carving, the walls of the instrument are remarkably thin and uniform. The relief carvings are consistently about 3 mm deep, and the solid wall behind them is also about 3 mm thick, resulting in a total wall thickness of about 6–7 mm. Considerable effort has been made to reduce the weight of the carvings: the four bumps along the instrument's outline are largely undercut, in actuality more air than wood. The lower two bumps, at the waist of the instrument, have been scooped out from the inside as well, minimizing the amount of wood there. Remarkably little allowance has been made for end grain; the walls at the shoulders and approaching the trefoil, which are on the end grain, are essentially as thin as anywhere else. The interior walls of the instrument show remarkable grace and elegance in their shape and continuity; the X rays reveal that they are clean and smooth, and generally parallel to the outside surface.

The thickness of the back is harder to gauge from the X rays; however, there are indications that it is very thin. A hole, 5 mm in diameter, has been drilled though the back.[13] The thickness of the wood at the edge of

13. The hole is about a third of the way up the back of the instrument, and is in approximately the same place as a soundpost in a violin. It is unknown whether this hole is original, or a later modification. Some iconographic instruments have curious holes in their side, such as a citole carving on the Collegiate Church in Toro, west portal, Elder 18.

this hole appears to be slightly less than 2 mm. Close examination of the X ray reveals that the spine of the keel-shaped back is slightly thicker than the wood around it, and that the thickness of the wood at the hole is representative of the remainder of the back.

Indeed, the only parts of the citole that actually consist of thick, solid wood are the trefoil extension and the dragon. The area between the thumbhole and the back edge of the neck (the area shown in fig. 10) is deceptively thin, only about 11 mm across. The back edge of the neck appears thick, but is mostly hollow. The area underneath the fingerboard has been hollowed out. The body cavity is brought to a point as it meets the neck, again minimizing the weight of the entire neck. Only the dragon's head, wings, and body as it curls toward the fingerboard are thick (25–35 mm) and solid.[14] This solidity is necessary to provide the pegs with a good mount and to support the tension of the strings. The trefoil acts as a counterbalance and provides a solid mount for the other end of the strings.

The construction of the citole is well thought out, combining the strength and lightness required in a good instrument. Solid masses at both ends provide support for the strings, and the thicker ridge down the spine of the back connects them. The rest of the back is thin and undecorated, allowing for good resonance. The walls, or ribs, are decorated, but of consistent thickness. On instruments such as this, the acoustical function of the ribs is to carry the vibrations from the front to the back; the ribs do not provide significant resonance themselves. However, on this instrument the two largest sections of the walls, the shoulders, are constructed with a plain wall, with carvings that are not attached (this is discussed further below); this may be a device to allow them to vibrate unhindered. The builder was careful to reduce the amount of material throughout the citole, minimizing its weight and maximizing its resonance. This implies that the British Museum citole is the product of a master instrument builder, and represents a highly developed instrument.

Study of the British Museum citole is of course complicated by the alterations made to it since its construction, some intentional, and some accidental. A valuable tool in considering these changes is an electrotype

14. The pegbox is a later alteration. See Appendix 3.

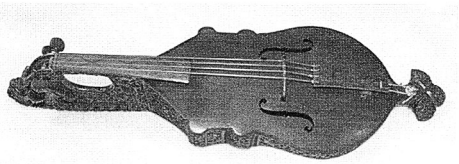

FIGURE 5. Electrotype copy of the British Museum citole, the Victoria and Albert Museum, inventory no. '69-66; photograph reproduced by kind permission of the Victoria and Albert Museum (photograph by the author).

copy made in 1869 (fig. 5).[15] It is a remarkable three-dimensional copy of the citole, made apparently by pressing soft wax onto the carvings and submitting the wax to an electrical process to create an exact replica in brass. The makers of the electrotype were clearly most interested in the medieval carvings, which are duplicated with an astonishing degree of detail. Unfortunately, in the effort to make the electrotype resemble the original instrument, it was painted brown, ironically disguising some of the fine surface detail. The top and back of the instrument are merely approximated in the electrotype. The electrotype is fitted with a curious bridge carved to resemble a stone arch bridge covered with ivy (fig. 6). This bridge was probably made to complement the carvings on the body of the citole, but not intended to be functional.[16] The electrotype provides a valuable bookmark in the citole's history because it records the state of the instrument in 1869. Remarkably, much of the damage to the instrument has happened since then.

15. The electrotype (V&A inventory no. '69-66) was made for the South Kensington Museum, now the Victoria and Albert Museum, and is currently kept in storage. Many thanks to James Yorke, curator, for allowing me to examine it.

16. The electrotype's bridge, made from the same material as the electrotype, is a puzzle in itself. At 64 mm wide and 25 mm tall, with an arched top with seven string nicks of various sizes and placement, it is unlike any violin bridge, and of unsuitable proportions for the British Museum citole in its current form. There are no particular marks on the British Museum citole's current soundboard to indicate that a bridge like this was ever on it for an extended period of time. It has been suggested that the bridge copied for the electrotype was the original citole bridge, but its highly arched top and the near impossibility that a bridge could have survived with the instrument for centuries after all of the fittings had been replaced override this theory. The bridge was possibly taken from another instrument, such as a *lira da braccio*.

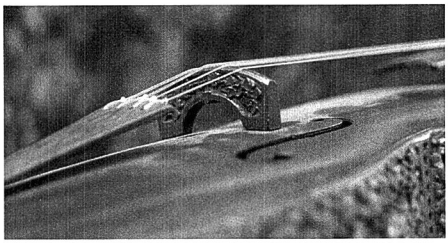

FIGURE 6. Detail of the bridge on the electrotype copy; photograph reproduced by kind permission of the Victoria and Albert Museum (photograph by the author).

Examples of this modern damage can be seen on the shoulders (fig. 7). These are the exception to the one-piece construction of the instrument, for the decoration there, rather than being carved directly into the wood of the body, is carved on a separate panel of wood for each shoulder, which is set against an integral wall. A small frame around each panel, hidden behind the carvings, is glued to the inner wall. One reason for this construction could be that since these two large panels occur on end grain, the carver chose to insert slab-cut panels to retain a unity of appearance throughout the instrument. Another reason could be to give the shoulders greater resonance, as stated above. The fragility of the carving here is evident: several bits have broken off, some of which have been glued back on. The panels are undamaged on the electrotype, and one large piece currently missing from the right shoulder of the citole is present in a photo from 1903.[17]

The walls behind the shoulder carvings are covered with gilding composed of brass paint on paper, which currently has a greenish, wrinkled appearance.[18] John Hawkins, writing in 1776, described the carvings on these two panels and noted that "under the carving is a foil of tinsel or silver gilt."[19] This appearance of gilt is maintained on the electrotype, where the shoulders were cast as separate pieces, painted brown, and set

17. Countess of Warwick, *Warwick Castle and its Earls* (London: Hutchinson & Co., 1903), 353.

18. Susan La Niece, scientist at the British Museum (personal correspondence, February 2007).

19. Hawkins, *General History*, 2:687.

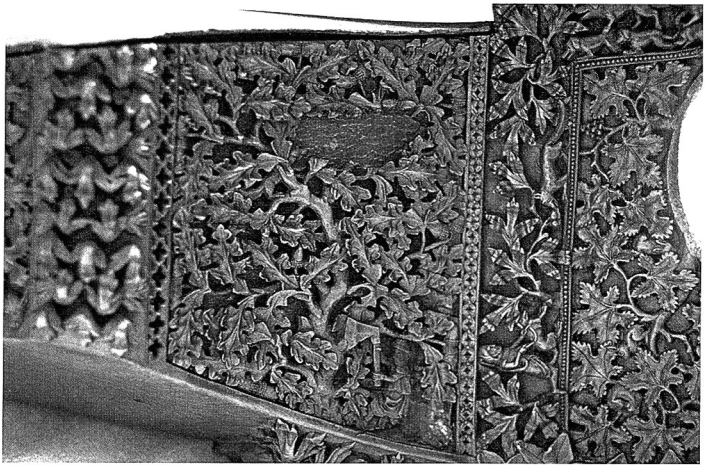

FIGURE 7. Right shoulder of the British Museum citole; photograph reproduced by kind permission of the British Museum (photograph by the author).

against a gold-painted wall. How old the gilt is, and why it should be apparent in 1776 and 1869, but be completely tarnished now, is unclear. No traces of gilt or other polychromy survive elsewhere on the instrument, so these panels are the only places highlighted in this way.[20] The gilding could have been renewed (or applied) in the sixteenth century when a new soundboard was made, by removing and replacing the panels. It could be that the process of making the electrotype caused the gilding to tarnish.

Another part of the citole that has been damaged and repaired is the endmost knob of the trefoil (fig. 8). This knob is missing in the engraving that accompanies Hawkins's description of the instrument,[21] and is

20. Examples of medieval pierced carving backed with gilding can be found on two fourteenth-century carved caskets, pictured in Michael Camille, *The Medieval Art of Love* (London: Calmann & King, 1998), 67, 107. Many thanks to John Cherry for bringing these to my attention.

21. The detailed engraving appears only in the original 1776 edition; it is reproduced in Remnant and Marks, "A Medieval 'Gittern,' " pl. 75. In the second edition (1853), portraits that had been included within the text of the original edition were relegated to a

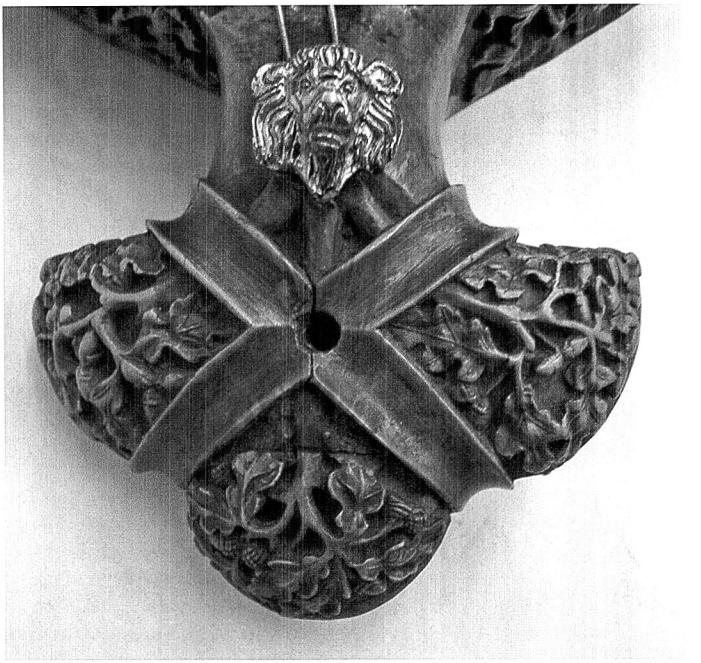

FIGURE 8. Front and back of the trefoil of the British Museum citole; photographs reproduced by kind permission of the British Museum (photographs by the author).

present in its current, repaired, form on the electrotype. The high quality of the carving on the knob has led to the assumption that it is the original piece, which was reaffixed.[22] However, the X rays clearly show that the current knob is a replacement. The joint between this knob and the rest of the trefoil is set at an angle impossible to cut, angling into the trefoil in a cone shape. Also, the two side knobs of the trefoil are very

separate volume. The 1963 reprint of the second edition (American Musicological Society Music Library Association Reprint Series [New York: Dover]) does not include this extra volume of pictures, and contains merely a small, rather inaccurate diagram of the citole.

22. For example, Mary Remnant and Richard Marks, in "A Medieval 'Gittern,' " 97.

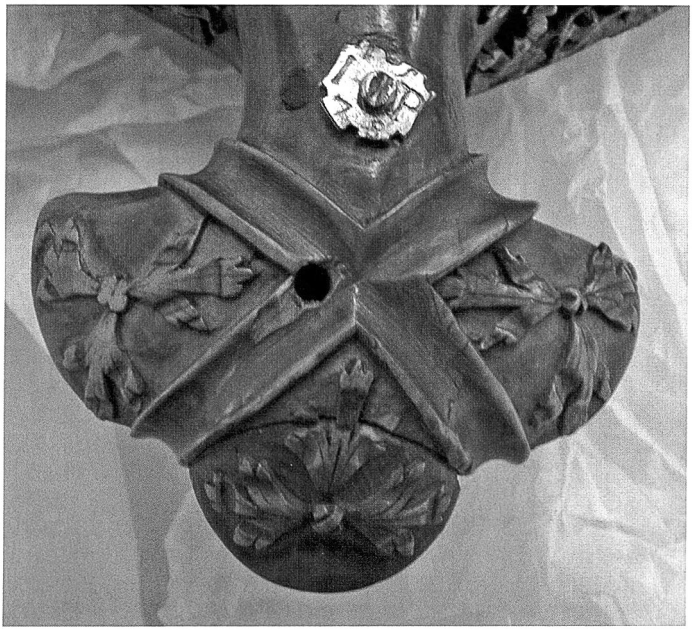

FIGURE 8. *continued*

worn, front and back, while this knob is not. This all suggests that the original knob was broken off and lost at an early date, and that sometime later the broken wood was removed and a replacement piece carved and fitted. Perhaps this was done in preparation for making the electrotype and displaying the instrument in the mid-nineteenth century. The very skilled carver who made the carefully matched replacement piece might also have made the decorated bridge that was copied for the electrotype.

One of the most gratifying results of my study has been the recognition of a lost owl's rightful place on the citole. The British Museum has in its collection a small, three-dimensional carved owl (fig. 9), which they have assumed belonged in some way with the citole. Comparison to the electrotype reveals that the owl once inhabited the hollow space surrounded by vines of ivy at the back of the citole's neck (fig. 10). The

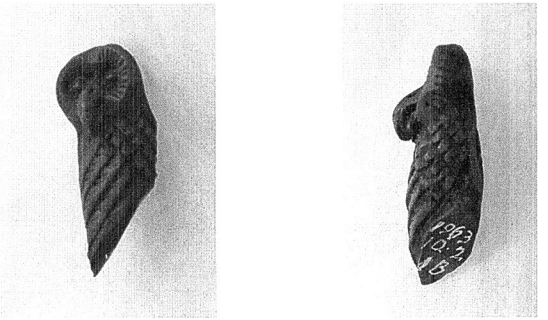

FIGURE 9. Front and side of the owl; photographs reproduced by kind permission of the British Museum (photographs by the author).

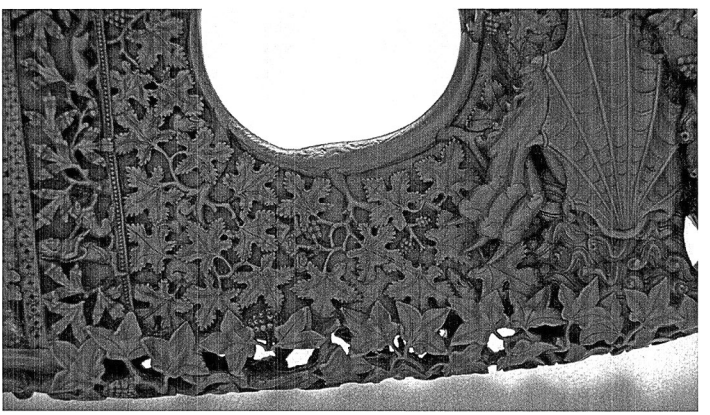

FIGURE 10. Detail of the British Museum citole neck from the right side, showing hollow cylinder decorated with vines; photograph reproduced by kind permission of the British Museum (photograph by the author).

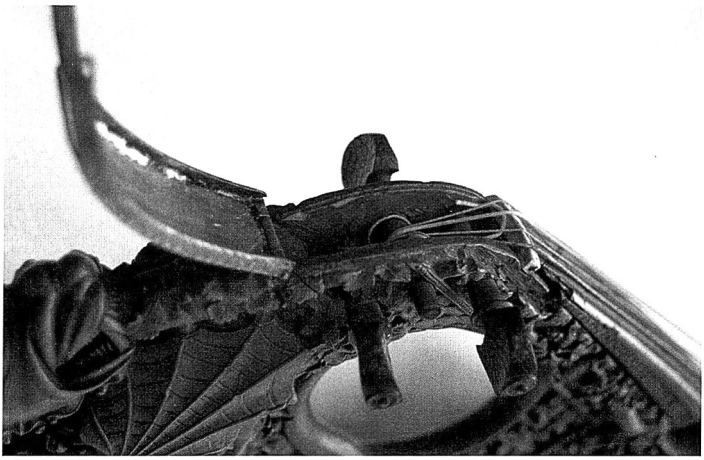

FIGURE 11. Pegbox of the British Museum citole; photograph reproduced by kind permission of the British Museum (photograph by the author).

owl's front and sides are decorated to the citole carver's typical level of detail, but its back is not. It was probably recessed within the vines so that it could be seen from different angles as a close observer peered through the leaves. Again, the craftsmanship is astounding.

The changes to the British Museum citole discussed hitherto can be characterized as accidental damage, which in some cases has been repaired to preserve the medieval relic. The following, more substantial, alterations were made intentionally to modify the citole into a violin and maintain it in a playable condition as such. Although some may deem these efforts misguided, they were at least made in a systematic way, and can thus be traced back to reveal the original form of the citole.

The most significant changes to the citole have been made at the pegbox area. Currently, the citole has four pegs inserted laterally as on a violin (fig. 11). The front surface of the pegbox is covered by a silver lid engraved with the arms of Elizabeth I and Robert Dudley. A small hinge attaches the silver plate at the upper edge, and two arms extend down the edges of the fingerboard on either side of the nut. In addition to the four holes with pegs in them, there are two additional holes for pegs.

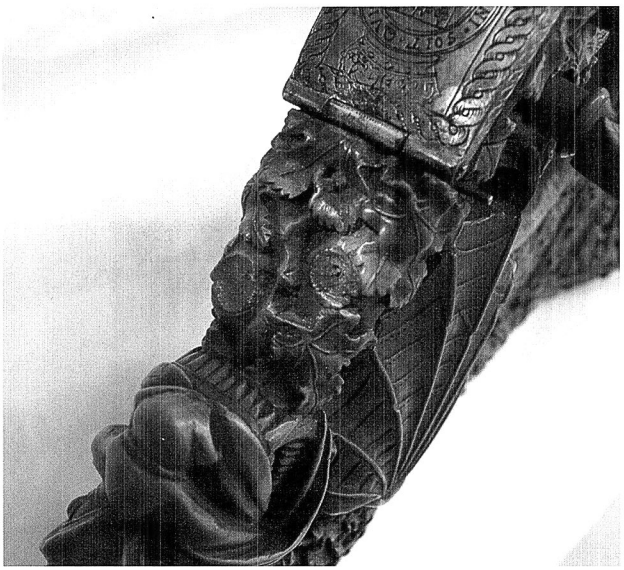

FIGURE 12. Detail of the peg area showing the plugged citole peg holes; photograph reproduced by kind permission of the British Museum (photograph by the author).

These holes were plugged, although the wooden filler has fallen out of one of them due to the crack in the pegbox wall.[23]

It is evident that the pegbox and the peg holes that lie beneath it are alterations to the medieval citole. The original builder took great care to arrange the carvings into logical and complete segments, but these peg holes and the silver plate cut mercilessly through the carvings, piercing leaves and dragon scales, and slicing away the back of a man. However, on the front surface of the peg area, between the dragon's mouth and the top of the silver plate, are two round depressions filled with a rough material (fig. 12). These are accommodated by the carving: grape vines and leaves are positioned to curl around them. The X-ray images confirm that these are peg holes, and thus that the entire pegbox is a later

23. For a discussion of the pegbox and what it reveals about the transformation into a violin, see Appendix 3.

FIGURE 13a. Citole carving, Strasbourg Cathedral, ca. 1290; photograph by Crawford Young and Richard Earle.

modification. Although on the surface the two holes are close both to each other and to the outside edge of the citole, they were drilled at an angle so that each peg leaned out, leaving ample room to turn it. On thumbhole citoles, the pegs pierce the peg block from the front surface, and the large expanse of material behind the neck provides a secure mount. This arrangement can be seen clearly in iconography, for instance in the carvings in the Exeter Cathedral Minstrels' Gallery, at Strasbourg Cathedral (fig. 13), and on the west portal of the Toro Collegiate Church. Pegs splayed out at seemingly haphazard angles are evident in some two-dimensional depictions, such as the citole in the Avranches manuscript (Avranches, Bibliothèque Municipale MS 222, fol. 9).[24] All other traces of the original citole pegs are unfortunately lost, having been destroyed when the pegbox was excavated.

However, the spacing and the angle of these two holes provide clues about the others. The placement of the two holes far back near the

24. Reproduced in Remnant and Marks, "A Medieval 'Gittern,' " fig. 70.

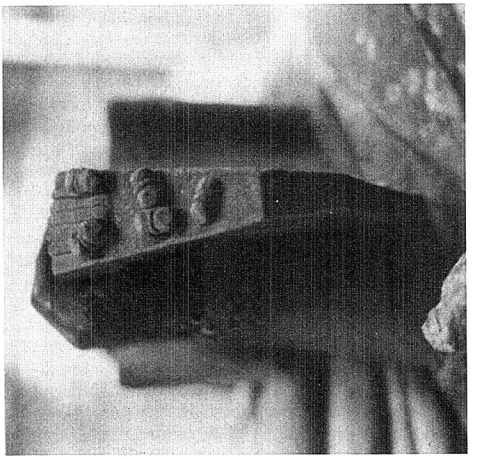

FIGURE 13b. Detail of citole pegs, Strasbourg Cathedral, ca. 1290; photograph by Crawford Young and Richard Earle.

dragon's mouth suggests that the builder wanted to use all the available space, which would allow for a total of six pegs. Since the neck seems too slender to have accommodated six individual strings, these were probably arranged in courses. Two citoles on the Toro west portal (Elders 1 and 18) show five pegs but only three strings, suggesting that the five strings were grouped into three courses.[25]

The angle of the two old peg holes suggests that some additional alterations may have been made to the peg area. The holes are not perpendicular to the surface through which they are drilled, but parallel to the fingerboard. This is curious, because if the other original peg holes were drilled at the same angle, there would not be enough material for them near the nut to fit securely. However, if some wood has been removed and originally there was a distinct angle between the fingerboard and the peg area, the pegs would fit admirably (fig. 14). The citole carving in

25. A reproduction of Elder 18 appears as fig. 5 in Pepe Rey, "Cordophones pincés et styles musicaux," in *Instruments à cordes du Moyen Age,* ed. Christian Rault (Grâne: Editions Créaphis, 1999), 95–113.

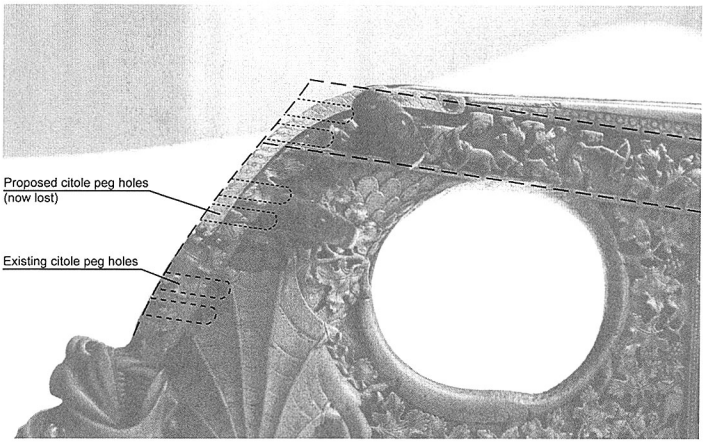

FIGURE 14. Diagram showing the proposed configuration of the peg area.

Strasbourg clearly shows this arrangement (see fig. 13), and others such as the Norwich Cathedral and Cley-next-the-Sea examples (figs. 2 and 15) have a distinct angle at the nut, rather than the slope suggested by the current arrangement of the British Museum citole. This configuration would move the nut back about 2 cm, increasing the string length, and causing the index finger to rest comfortably in first position with the hand resting against the back edge of the thumbhole.

Consideration of the British Museum citole with this extra material at the peg end explains some other small puzzles. Currently, the hollow neck extends into the pegbox, and a rough plug under the nut separates the two open spaces. If the citole had originally been built with the nut further back, there would be plenty of room to end the hollow neck and leave solid wood under the end of the fingerboard. The decorative carving also supports this reconstruction, for the longer neck would allow the scene beneath the fingerboard to end at a clean angle, and provide enough space to finish the tree of which only a stump remains.

Additional alterations have been made to the top edges of the neck and the walls of the citole in the process of fitting new fingerboard(s) and soundboard(s). Fortunately, by studying the carving on the neck

FIGURE 15. Citole carving, Cley-next-the-Sea, Norfolk, Church of St. Margaret, label stop, ca. 1320–30; photograph by Alice Margerum, 2006.

and walls, the original height of each can be reestablished. Throughout the decorative program on the citole, the carver has arranged the subject matter carefully to fit within well-defined bounds. Friezes of quatrefoils or other banding divide the carvings into sections that coincide with features in the overall shape of the instrument. For example, each shoulder bears one complete vignette, and the carving on the lower bouts is continuous until it reaches the first of the protruding bumps, where a band of quatrefoils separates it from the next section of carving. Each section is further defined by containing a specific type of foliage: oak trees on the shoulders and maple on the lower bouts, to name a few. In

each section, the subject matter is arranged carefully to fit within its prescribed space; leaves always bend to fit rather than being cut off.[26] This characteristic is critical in understanding the upper edge of the carving, and thus the original rib line of the citole.

Another critical feature is that the decorative banding occurs between segments of carving, but never on the outer edges of the instrument. The bottom edge of the ribs as they meet the back is consistently undecorated, and this is obviously original since the ribs and back are one piece of wood. A ridge of wood is necessary along the bottom edge of each shoulder to secure the panel. However, this ridge is not decorated, maintaining a similar appearance to the bottom edge of the rest of the side carvings.

The lower bouts present a clear example of unaltered ribs (fig. 16). The ribs here are voluted, or scooped out. A constructional technique used in carved-body instruments, voluted ribs allow the maker to thin the walls of the instrument from the outside, while leaving plenty of surface area on the top edge of the ribs to secure the soundboard. Surviving *lire da braccio* from the sixteenth century,[27] as well as medieval carvings such as the fiddle in the Lincoln Cathedral Angel Choir, have this feature. The maker of the British Museum citole used this technique on the lower bouts, where the ribs are short, but did not attempt to volute the taller ribs of the shoulders; as these are hidden behind the carvings, there was no need to volute them for the sake of a unified appearance. Both the top and bottom edges of the ribs on the lower bouts as they leave the trefoil are clearly defined by the voluting and the placement of the decoration. One exception may be some leaf tips that appear to have been trimmed off, on the second and third trees around from the trefoil on the right side. This will be pertinent when considering the original rib line. As the lower bouts curve in toward the waist of the instrument, more significant trimming has occurred on both sides of the instrument (figs. 17 and 18). The voluting has flattened out, but more substantial parts of leaves have been cut away. This trimming was continued over the protruding bumps and up to the shoulder panels.

Due to their special construction, the shoulder panels themselves provide their own clues. Here the carvings are pierced through the wood

26. The only exception to this is where a few leaves and feet stick out over the banding that defines the bottom of the hunt scenes on either side of the neck (figs. 23 and 24).

27. See, for example, the *lira da braccio* by Francesco Linarol, 1563, in the National Music Museum, the University of South Dakota (NMM 4203).

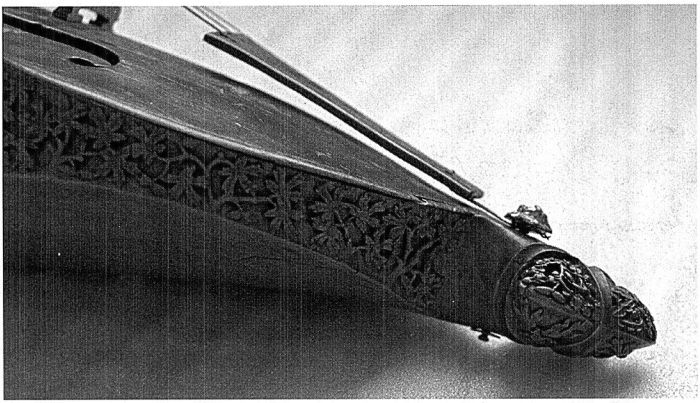

FIGURE 16. Left lower bouts and trefoil of the British Museum citole; photograph reproduced by kind permission of the British Museum (photograph by the author).

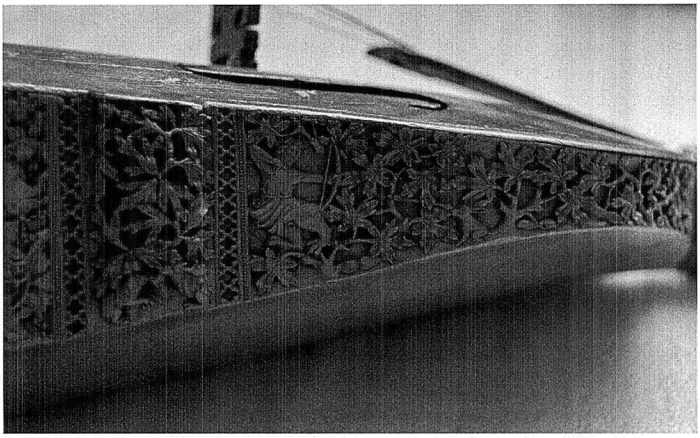

FIGURE 17. Left side of the British Museum citole; photograph reproduced by kind permission of the British Museum (photograph by the author).

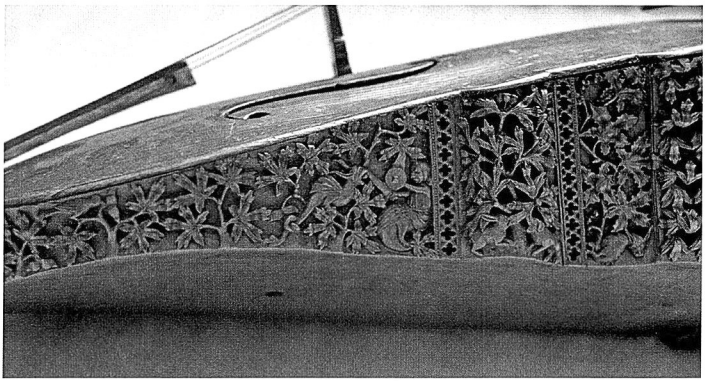

FIGURE 18. Right side of the British Museum citole; photograph reproduced by kind permission of the British Museum (photograph by the author).

panels, but the outer edges of each panel are supported by a solid frame. This frame is subtly hidden behind the carvings; it is most visible on the left shoulder panel among the pig's feet on the bottom edge and the oak leaves in the upper right corner (fig. 19). Its presence helps define the upper edge of the shoulders as the original rib line.

While our understanding of the original rib line is assisted by the decorative carving, it is hampered by the presence of the vaulted violin soundboard, which covers the rib line and also confuses the eye with its many curved lines. However, until such time as additional scientific investigation can be made, we must use the clues we have. I propose that, rather than the vaulted type of soundboard the citole currently has, it was originally fitted with a bent soundboard, and that all of the alterations to the rib line can be explained by the difference between these two kinds of soundboard. A bent soundboard is made from a thin, flat piece of wood bent into a gentle arch; such a bend introduced into a flat piece of wood adds significantly to its structural strength. Conversely, a vaulted soundboard is made by carving a thick piece of wood into a thin, domed shape.

The shape of the rib line is completely different for a bent top than for a vaulted top. With a vaulted soundboard, the rib line occurs in one plane: set a violin soundboard on a flat surface, and all of its edges will

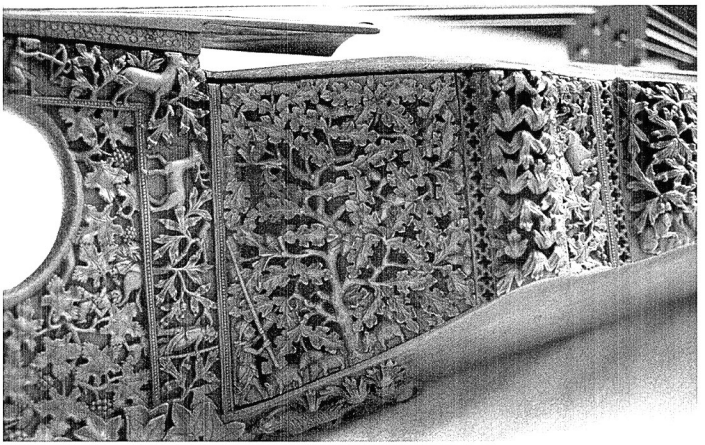

FIGURE 19. Left shoulder of the British Museum citole; photograph reproduced by kind permission of the British Museum (photograph by the author).

lie flat while its belly arches away from the surface. With a bent soundboard, the rib line dips according to its distance away from the centerline of the instrument (fig. 20). Where the ribs move quickly in or out from the centerline, the dip of the rib line will be most apparent, whereas the portions of the ribs that are more or less parallel to the centerline will have a flat rib line. On the British Museum citole, the places where the rib line would dip the most are on the shoulders, the bottoms of the lower bouts, and as the lower bouts curve into the waist. These are the places where a maker trying to fit a vaulted soundboard would have the most trouble. We have seen that the rib line of the citole has been lowered as the lower bouts curve into the waist, and possibly as they approach the trefoil (fig. 21). As the shoulders approach the neck, the soundboard has lifted completely away from the ribs, suggesting that the rib line is not flat. It has also pulled away from the ribs at other points.[28] The imperfect fit of the present soundboard and the subtle alterations

28. Conservators at the British Museum re-glued the soundboard to the body in January 2007.

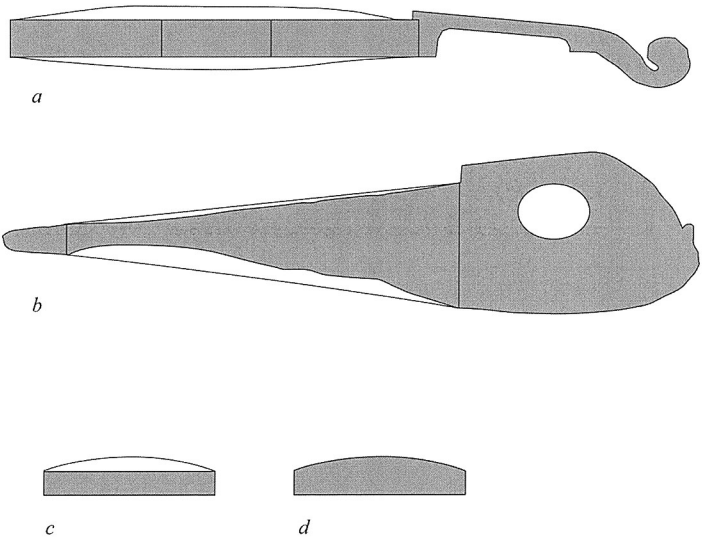

FIGURE 20. Profiles of vaulted and bent soundboards. (a) A standard violin with a vaulted soundboard. (b) The British Museum citole with a bent soundboard. (c) End view of a vaulted soundboard. (d) End view of a bent soundboard.

to the rib line are exactly what one would encounter in attempting to fit a vaulted soundboard onto a rib line shaped for a bent soundboard.

Citoles and other similar medieval instruments have traditionally been assumed to have had flat soundboards. This is in accordance with the recognized development of the vaulted top in the late fifteenth century, leading to the development of the violin. In iconographic sources, an arched top can be indicated by shading, as on Gaudenzio Ferrari's famous "Paradiso" fresco in the Sanctuary of La Beata Vergine dei Miracoli, Saronno (1534–36).[29] However, without this shading, it is impossible to tell in a painting what kind of subtle shape a soundboard has. Likewise, this kind of subtlety can be lost on a sculpture, unless the sculptor intended to reproduce the instrument exactly and the soundboard is

29. Color reproductions can be viewed at www.santuariodisaronno.it/GFerrari.html.

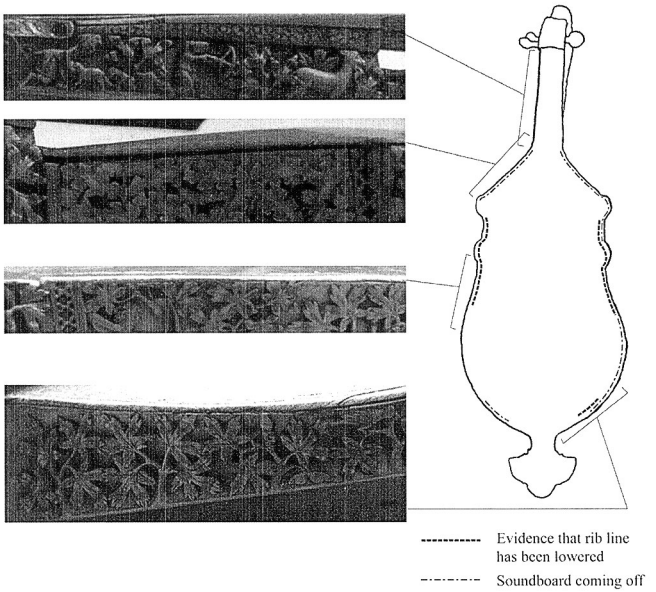

FIGURE 21. Diagram illustrating the condition of the rib line of the British Museum citole.

not obscured by the player's hand. Even so, the observer may not be able to confirm this intricacy without close critical examination, perhaps by holding a flat edge to the carving to confirm the soundboard's shape.[30] The bend in the top I am proposing for the British Museum citole is very slight, perhaps dipping 8 mm at the widest portion of the lower bouts. Such a feature would be hard to establish in the iconographic record, and is precisely the kind of information that makes the study of surviving instruments so valuable.

With the condition of the rib line established, the relationship between it and the neck becomes apparent. There is a distinct step up from the rib line at the shoulders to the neck under the fingerboard, implying

30. This lucky combination occurs in Toro, Elder 18 on the west portal, where a shallow bend is perceivable in the soundboard. Thanks to Alice Margerum for discovering this.

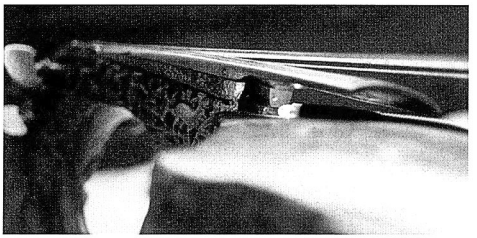

FIGURE 22. Detail of the hollow neck of the British Museum citole; photograph reproduced by kind permission of the British Museum (photograph by the author).

that the fingerboard was raised off the soundboard, and resulting in a higher bridge than we normally associate with plucked string instruments.[31] It is worth noting that the edges of the neck are walls themselves, like the ribs, because the neck has been hollowed out (fig. 22).

The walls of the neck have been lowered since their original construction, for significant portions of the carving have been lost (figs. 23 and 24). Presuming that the line of banding underneath the carved hunt scene was parallel to the original top of the neck, as it is to the shoulder when it turns downward, the neck has been lowered fairly uniformly. The missing bits from heads and leaves, and perhaps the antlers on the deer on the left side of the neck, suggest that the original edge was 2–4 mm higher. Restoring this amount to the height of the neck and fitting the ribs with a bent soundboard would create a bridge about 3 cm tall, although the precise height would depend on bridge placement and the angle and height of the fingerboard, both of which are lost to us now. A significant number of iconographic sources show a large, thick bridge (see, for example, fig. 2).

Some iconographic citoles have tailpieces, while the strings of others converge to a point at the base of the trefoil. The British Museum citole

31. Since the top of the rib line is so clear on the lower bouts, it is extremely unlikely that any other portion of the rib line could have been altered as significantly as would be necessary to create a new clear rib line—for example, by the removal of an entire line of banding. Such an alteration would have required a step in the soundboard, which does, in fact, occur on the violeta of Saint Caterina de'Vigri and is depicted on a citole carving in Beverley Minster, but which does not comply with the other evidence on the British Museum citole. For this reason, I believe the step between rib line and neck on the citole to be original. For a discussion of instruments with double-level soundboards, see Jeremy Montagu, *Minstrels and Angels* (Berkeley, CA: Fallen Leaf Press, 1998), 29–30, 43.

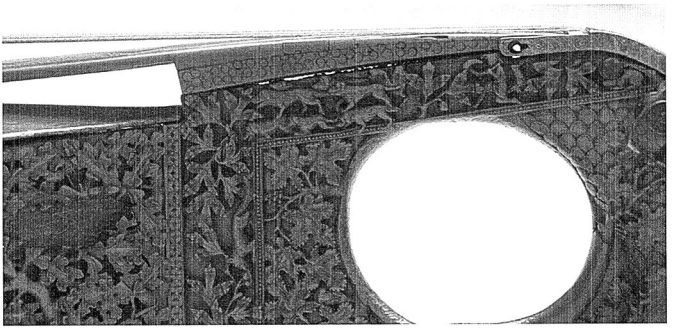

FIGURE 23. Detail of the neck of the British Museum citole from the right side; photograph reproduced by kind permission of the British Museum (photograph by the author).

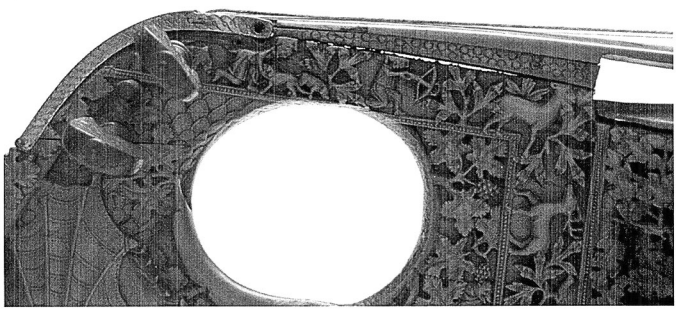

FIGURE 24. Detail of the neck of the British Museum citole from the left side; photograph reproduced by kind permission of the British Museum (photograph by the author).

has several holes through its trefoil (see fig. 8). One hole, 3.7 mm wide, pierces the trefoil at its center, where the carved ribbons intersect. The top surface of this hole is centered while the back is slightly askew. Another hole, drilled straight through the trefoil stem, secures the silver lion's head on the front surface and a small shield with the date 1578 on

the back surface. An earlier hole through the stem has since been plugged (see fig. 8; visible on the back, to the left of the shield); the wood of the plug has a reddish hue, similar to the plugs in the pegbox. This hole was steeply tapered, being 7.9 mm on the front surface and 5.0 mm on the back, and, like the hole where the carved ribbons intersect, was drilled at an angle. The tapered hole, and perhaps the hole where the ribbons intersect, may have been used to secure the strings in some manner. A peg inserted into the tapered hole could have secured the tailgut in a manner similar to the present arrangement. Alternatively, if there was no tailpiece, all of the strings could have been attached directly to a ring or thong on this peg.

Another setup feature about which the British Museum citole is frustratingly silent is frets. Many manuscript drawings of citoles show frets, usually as parallel double lines. Due to the nature of the British Museum citole's neck, it could not have accommodated gut frets tied around the fingerboard and neck, as on a lute, so it is probable that it had glued-on wooden frets.[32] These could have been small and narrow, in essence very similar to tied gut frets.[33] Alternatively, they could have been wider wooden frets, as on citoles depicted in the Parma Baptistry and the church of St. Francis of Assisi. A carved citole in Valencia shows curious wide, flat frets with small voids between them (fig. 25).[34]

Thus, even though the original fittings of the British Museum citole have been lost, clues left behind on the instrument can tell us things about them. First, the citole's pegs were originally inserted from the front, rather than laterally, as they now are. The spacing of the surviving peg holes suggests that the instrument originally had six pegs, and the slenderness of the neck suggests that the six strings were grouped in courses. The shape and condition of the rib line indicate that the citole originally had a flat soundboard, bent to shape. The step between the rib line and the neck demonstrates that the fingerboard was raised above the level of the soundboard. This, together with the bent soundboard, suggests that the bridge was high. The tapered hole in the trefoil stem

32. Theoretically, it would be possible to drill holes through the back of the fingerboard and thread gut frets through these holes. There is no evidence for this, however.

33. Alice Margerum has proposed that the frequent depictions of citole frets as double lines could represent the use of a Pythagorean tuning of 24 pitches per octave (correspondence, March 2007).

34. A gittern near this citole has clearly depicted tied gut frets. Many thanks to Alice Margerum for bringing this to my attention. Crawford Young briefly addresses issues of frets and tuning of medieval plucked instruments in "Lute, Gittern, and Citole."

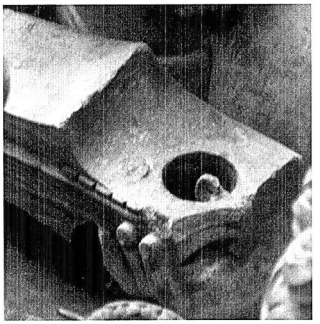

FIGURE 25. Detail of the frets on a citole carving on Valencia Cathedral, south door, ca. 1400; photograph by Alice Margerum, 2006.

suggests that the strings were affixed there, either by means of a tailpiece or by some other method. Other details of the setup, such as frets, bridge height and placement, string material, and tuning are unfortunately unknown. However, the citole provides enough clues for enterprising builders to start addressing these issues.

Finally, there is a legitimate question as to whether instruments that are highly decorated can be considered representative of their kind. The high survival rate of decorated instruments can be more easily ascribed to artistic qualities than to musical value, and the British Museum citole's remarkable preservation can of course be attributed to its beauty as a work of art. However, I believe that it was created to be a performing instrument, or at least that it was built by a craftsman who was a master citole builder as well as a master carver. Granted, this was probably an extraordinarily ornate instrument, intended for a special patron, but that need not detract from its musical value. Wear marks on the neck and trefoil indicate that it was played, although that does not necessarily mean that it had a favorable sound. Features such as the thin, undecorated back and the voluted lower bouts indicate that the builder knew how musical instruments worked. Also, careful attention was given to the balance of the instrument. Even though it is somewhat heavy (certainly not like the featherweight lute), it rides comfortably in the arms. The hollow neck and the thinness of the wood around the thumbhole suggest that the craftsman made adjustments to allow the instrument to balance comfortably. The refined quality of the interior indicates that the citole was not merely a showpiece. And finally, the overall beauty and elegance of

design bespeaks a refined instrument representing the height of its development. As such, it provides an invaluable example of the work of a skilled medieval instrument maker, so distant to us today.

APPENDIX 1:

Provenance of the British Museum Citole

The first known record of the British Museum citole's existence is a detailed description of the instrument by Sir John Hawkins in his *History of Music,* published in 1776.[35] Assuming it to be an early and strange violin dating from the sixteenth century, Hawkins describes some of the carving and provides a detailed engraving of the instrument. He comments that it was purchased at the "sale by auction of the late duke of Dorset's effects,"[36] likely referring to an auction that took place at the death of Charles Sackville in 1769. The Sackville family was known for collecting royal castoffs, and a possible scenario is that Thomas Sackville, Lord High Treasurer to Elizabeth I, acquired the instrument at her death in 1603.

Charles Burney also mentions the citole, in the third volume of his *History of Music,* published in 1789.[37] He notes that the instrument was then the property of Mr. Bremner, who owned a music publishing and instrument business in the Strand. The publisher Robert Bremner (ca. 1713–1789), who had moved his business from Edinburgh to London in 1762, also owned the Fitzwilliam Virginal Book for some years.[38] In 1803, the citole was sold at the sale of the Honourable Smith-Barry's effects by Christie's for 30 guineas.[39]

In 1806, the citole appeared in an inventory of Warwick Castle as "Queen Elizabeth's violin."[40] It remained in the Warwick collection until 1963, when the British Museum acquired the instrument. In the 1860s, the 4th Earl of Warwick, George Guy Greville, was approached by Henry Cole of the South Kensington Museum (now the Victoria and Albert Museum) regarding his collection. This resulted in the making of an electrotype copy of the instrument in 1869 by Messrs.

35. Hawkins, *General History,* 2:687.

36. Ibid.

37. Charles Burney, *A General History of Music from the Earliest Stages to the Present* (London: printed for the author, 1776–89), 3:15.

38. *The New Grove Dictionary of Music and Musicians,* 2nd ed., s.v. "Bremner, Robert," by David Johnson.

39. *An Illustrated Catalogue of the Music Loan Exhibition held at Fishmongers' Hall, June and July 1904* (London: Novello, 1909), 153.

40. The 1806 inventory lists a "Violin & Case" in the upper room of the Garden Tower (Warwickshire County Record Office, CR 1886/TN1053). An annotated copy of this inventory from 1809 further describes the instrument (in the same room) as "Queen Elizabeth's Violin" (Warwickshire County Record Office, CR 1886, Box 466).

Franchi and Son, and the displaying of the instrument in 1872 at an exhibition of musical instruments at the South Kensington Museum. The citole was subsequently shown at the 1904 exhibition at Fishmongers' Hall, in Eastbury Manor House, Barking, in 1935, at the 1951 Galpin exhibition, at an exhibition in Jamestown, Virginia, in 1957, and at an exhibition in Paris in 1967.[41]

APPENDIX 2:

Thumbhole Citoles in Iconography

The study of citoles in iconography is problematic. First, the normal caveats apply: Did the artist know the instrument and care about depicting it accurately? Was the artist working from a pattern book, a description, a memory of an existing instrument, or a real instrument? Does symbolism play a role in the depiction, and, if so, how? How do the limitations of the artistic medium hamper the accurate depiction of a musical instrument? This last issue applies most specifically to the thumbhole citole: most two-dimensional depictions show the instrument directly from the front, and reveal nothing about the depth of the back or the presence of a thumbhole. When viewing a thumbhole citole from the front, the actual thumbhole and unusual neck are completely hidden (fig. 26). Additionally, due to the instrument's keel-shaped back, the visible depth at the edges of the British Museum citole is significantly less than the full depth at the thumbhole. This means that even a citole depiction that shows a second line giving an impression of the depth of the body (as in the Robert de Lisle Psalter) could represent an instrument with an overall wedge shape.

A few two-dimensional depictions do portray the thumbhole, although the thumbholes swing far to one side in organologically improbable arrangements (Robert de Lisle Psalter, Tickhill Psalter). Others clearly depict a simple neck with a pegdisc on the end (fig. 27). Most other two-dimensional depictions are ambiguous, depicting a fingerboard that ends without any indication of pegging, or an unusual bent head that curls toward the player, usually terminating in a dragon's head (both of these can be found in the Queen Mary Psalter). Either of these could, in fact, represent a thumbhole citole. In the first case, the artist merely drew what was visible from the front and ignored the complicated hodgepodge of wood and pegs beneath the fingerboard. In the second case, the artist was intrigued by the dragon's head curling around the top of the instrument, and drew it in a way that was artistically pleasing, though organologically improbable. It is noteworthy that the forward-bent, curved neck does not occur in three-dimensional media.

Citoles in sculpture have their own advantages and disadvantages for the researcher. Since they occur in three dimensions, the carver can represent the sides of the instrument as well as the front. However, circumstances may have dictated that the instrument be carved in less detail than we could wish, so what appears

41. Object file, British Museum, Department of Prehistory and Europe, 1963, 10-2, 1.

FIGURE 26. The author playing her reconstruction of the British Museum citole.

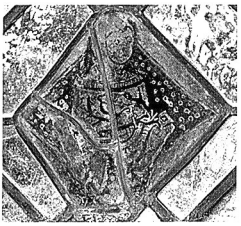

FIGURE 27. A citole with a clearly visible pegdisc, Warham, Norfolk, Church of St. Mary, stained glass, ca. 1320–30; photograph by the author.

to be a deep body could simply be a case where the carver neglected to remove excess stone. However, as with two-dimensional depictions, there are clear examples of both simple-necked citoles (Lincoln Cathedral Angel Choir) and thumbhole citoles (figs. 2, 13, 15, and 25). Others have characteristics of a thumbhole citole, such as a wedge-shaped body or pegs inserted from the front of the peg block, but the area where the thumbhole would be is obscured. Iconographic examples of indisputable thumbhole citoles and indisputable simple-necked instruments that have been called citoles are listed below.

Thumbhole citoles

Norwich Cathedral, cloister vault boss (fig. 2)
Cley-next-the-Sea, Norfolk, Church of St. Margaret, label stop (fig. 15)
Robert de Lisle Psalter (London, British Library, Arundel 83, II, fol. 134v) (R&M fig. 57, www.bl.uk/catalogues/illuminatedmanuscripts)
Tickhill Psalter (New York Public Library, Spencer Collection, MS 26, fol. 17) (R&M fig. 71)
Lincoln Cathedral, stained glass
Beverley Minster, nave label stop (JM pl. 79)
Psalter-Hours (New York, Pierpont Morgan Library MS M.183, fol. 141v) (CY fig. 15, corsair.morganlibrary.org)
Petites Heures de Jean de Berry, (Paris, Bibliothèque Nationale, Lat. MS. 18014, fol. 53)
Toro Collegiate Church, west portal, Elder 18 (PR fig. 5)
Valencia Cathedral, south door (fig. 25)
Pamplona Cathedral, cloisters
Rheims Cathedral, west façade
Strasbourg Cathedral (fig. 13)

Simple-necked citoles

Parma, Baptistry, stone carving (R&M fig. 53)
Lincoln Cathedral, Angel Choir (R&M fig. 54)
Gloucester Cathedral, vault boss (R&M fig. 63)
Assisi, St. Francis of Assisi lower church, fresco with Elders (CY figs. 7–11)
Book of Hours (London, British Library, Egerton MS 1151, fol. 47) (R&M fig. 68, www.bl.uk/catalogues/illuminatedmanuscripts)
Warham, Norfolk, Church of St. Mary, stained glass (fig. 27)
Yorkshire Museum & Gardens, stained glass (Age of Chivalry no. 562)

Abbreviations

R&M	Mary Remnant and Richard Marks, "A Medieval 'Gittern,' " in *Music and Civilisation,* ed. T. C. Mitchell, *British Museum Yearbook* 4 (1980): 83–134.
JM	Jeremy Montagu, *Minstrels and Angels* (Berkeley, CA: Fallen Leaf Press, 1998).
CY	Crawford Young, "Zur Klassifikation und Ikonographischen Interpretation Mittelalterlicher Zupfinstrumente," *Basler Jahrbuch für historische Musikpraxis* 8 (1984): 67–103.

PR	Pepe Rey, "Cordophones pincés et styles musicaux," in *Instruments à cordes du Moyen Age,* ed. Christian Rault (Grâne: Editions Créaphis, 1999), 95–113.
Age of Chivalry	Jonathan Alexander and Paul Binski, eds., *Age of Chivalry: Art in Plantagenet England, 1200–1400* (London: Royal Academy of Arts in association with Weidenfeld and Nicolson, 1987).

APPENDIX 3:

Transforming the Citole into a Violin

The alterations to the British Museum citole to transform it into a violin shed light on the place of violins in Tudor England. Setting aside the date of the current fittings, consideration of the pegbox indicates that the instrument was first transformed into a three-string violin, then upgraded to a four-string violin. There are currently holes for six laterally placed pegs beneath the silver plate; four of the holes have pegs, and the other two have been plugged (figs. 28 and 29). I will call the current four peg holes A, B, C, and D, and the plugged holes E and F (fig. 30). The pegbox of the three-string violin ended after F, which fits neatly beneath the silver plate, but it was later excavated more deeply to accommodate holes C and D. The plugged holes are smaller than the current pegs (fig. 31), and are comparable in size to those on the famous instrument made by John Rose ca. 1580 (identified variously as *cymbalum decachordon,* a bandora or an orpharion). It is evident from the direction in which the peg holes were reamed that the pegbox was originally built to accommodate only three pegs: E and F together with B, originally reamed the other way. The reamed direction of A would exclude it from this setup. The orientation of the three pegs, with the peg head closest to the nut extending out on the thumb side, is consistent with other instruments that have pegboxes and three strings.[42]

The size of the original pegbox is defined by the silver plate, which, along with the silver lion's head stud and date, links the instrument to Elizabeth I and Robert Dudley and the year 1578. I propose that the citole was found in its original form shortly before 1578 and modified into a three-string violin. Shortly thereafter, it was modernized again into a four-string violin by deepening the pegbox, re-reaming hole B, and drilling holes A, C, and D. Because the silver plate carried significance and beauty, the second modifier was careful to hide his work underneath it.

Daunting as it appears when considering violin playing position, the British Museum citole can be played as a violin if a low Renaissance orientation is used. The trefoil rests easily on the shoulder without the use of the chin. The thumbhole is large enough for a violinist's hand, and even allows for some shifting in lower positions.

42. For example, the Venus rebec in Vienna, Kunsthistorisches Museum, Sammlung alter Musikinstrumente (Inv. No. 433).

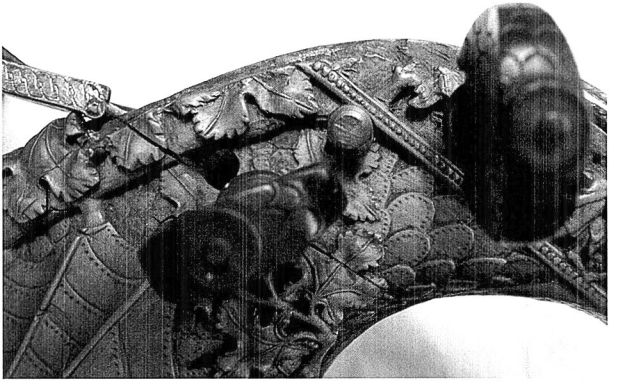

FIGURE 28. Detail of the exterior of the pegbox on the British Museum citole; photograph reproduced by kind permission of the British Museum (photograph by the author).

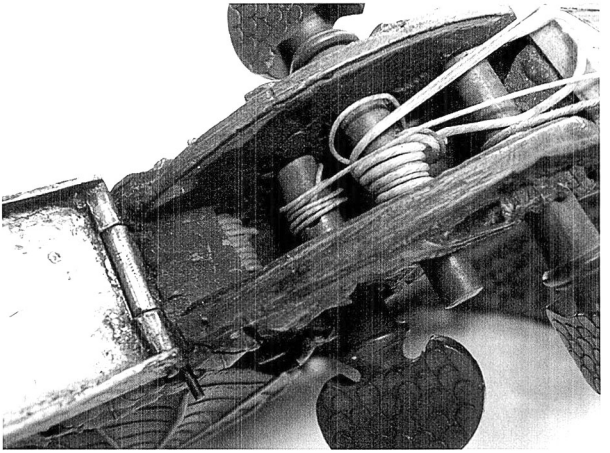

FIGURE 29. Detail of the interior of the pegbox on the British Museum citole; photograph reproduced by kind permission of the British Museum (photograph by the author).

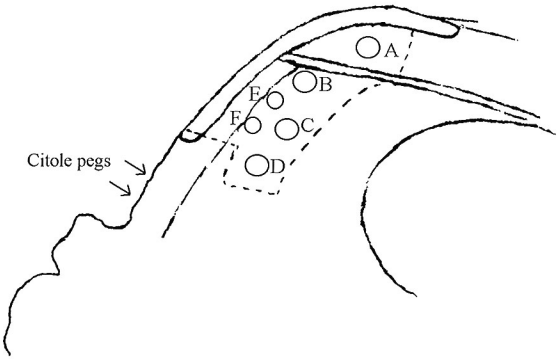

FIGURE 30. Diagram of the location of the peg holes on the British Museum citole.

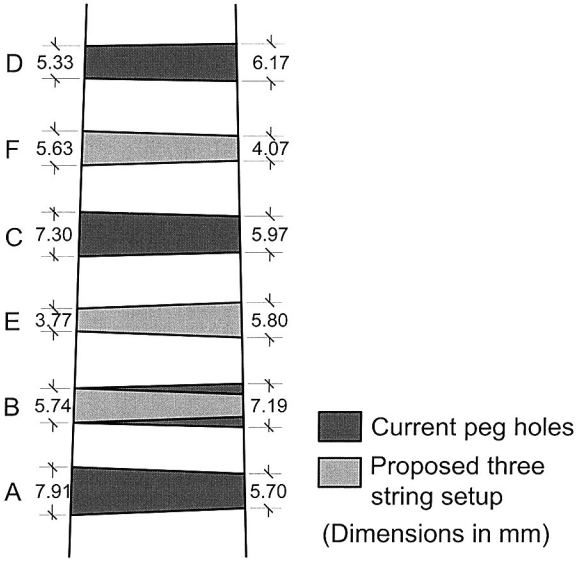

FIGURE 31. Diagram showing the size and direction of the peg holes on the British Museum citole.