Cittern Belly Outlines

Frustrations and suggestions for the modern maker.

Cittern research has been limited by the small number of extant instruments, and particularly by the lack of correlation between them and the extant music. Almost certainly more exist in collections, but currently I know of only the following:

Italy.
19 traditional 'carved' instruments plus 1 ceterone and 1 possibly converted ceterone.
(1 Printed book of music plus 4 pages of ms., both for a 6 course diatonic instrument.)

Italy. (Brescia).
6 'constructed' instruments. (1 printed book of music for 6 and 7 course chromatic instruments)

Spain.
1 fingerboard, probably Spanish, perhaps Italian. (No music although both chromatic and diatonic instruments are known to have existed - Minguet y Yrol.)

The Low Countries, Germany and France can be considered together.
5 perhaps 7 instruments, plus parts of two from a Dutch shipwreck, 4 made for sculptural angels in Freiberg Dom, and some late (up to 1790) made by the Bochem family in Cologne. (Although there is only one possible instrument and perhaps two paintings from France, much of the music comes from Paris. Altogether, the largest printed repertoire. Mainly for a 4 course diatonic instrument, but also for a chromatic instrument, and 1 book for 6 courses)

England.
1 possible, perhaps German, dated 1679 or 1579. (Much music, for a 4 course chromatic instrument)

The repertoires being played today are mostly that from England, and to a less extent that from France and the Low Countries. Although various sizes of cittern were available throughout Europe, the commonest size for both repertoires had a top string at a nominal e', and hence a string length around 43 - 45 cm. The English repertoire is for a chromatically fretted cittern. The bulk of the repertoire from across the Channel is for a diatonic cittern - one with partial or missing frets. Ideally a maker could copy an extant cittern. In practice this is almost not possible - the one instrument that may be from England is of a smaller size, has been extensively 'restored', and uses a string arrangement from later in the 17th century. Two otherwise suitable Low Country instruments in Brussels (diatonically fretted) and Berlin (chromatically fretted) are over-elaborately built for the popular repertoire and neither have been published as plans. Much can be learnt just by comparing extant citterns and the published plans, but it seemed worthwhile to look at the geometry of the extant instruments for any 'rules' that might govern their design and making.

The most obvious shape exhibited is the belly outline and this was examined for all of the Brescian 'constructed' citterns, and all but one of those made north of the Alps. A

sheet of drafting film marked with concentric circles was placed over published plans and photographs. This showed that parts of circles rather than spirals or other curves had been used. Similar results were demonstrated for lutes some years ago by David Van Edwards, Kevin Coates and others. There is, of course, considerable opportunity for error. Photographs might not be exactly at right-angles to the belly surface. Drawings may not be exact - incorporating the draughtsman's ideas. Bellies and backs may have been removed and replaced. The method of working is less than optimal. For constructed instruments an unanswered question is whether it was the mould or the instrument shape which was designed?

It is possible to see that the Italian citterns from Brescia used a system different from citterns north of the Alps. (Brescian citterns were only produced for a limited time - perhaps the forty years between 1560 and 1600 - and currently no similar Italian instruments are known outside Brescia.) The lower part of the Brescian belly outlines are made with curves from three centres, the Northern citterns from five. The concave curves next to the neck seem always to be produced from one centre only, and are joined with the lower convex curve either directly, or via a short straight or perhaps a short curve produced by eye. (This area is a weak place on cittern sides and is usually reinforced by a pilaster supporting the upper belly bar.) The shorter radius to these upper curves used by Tilman, Brussels 1524 and the Bochem example produce apparently more rounded shapes than the Brescian citterns, although length to width ratios are similar. Where the five points of the Northern pattern approach one centre, as happens with V&A cittern 10/2, the outline becomes almost indistinguishable from that of the Brescian citterns. Very similar constructions can be seen in the c. 1586 designs for ship's frames in Matthew Baker's *'Fragments of Ancient English Shipwrightry'* in Pepys Library, Cambridge.

I had hoped that it might be possible to determine the place of manufacture of the treble cittern now in Vermillion. However its current outline is affected by its apparent back/sides joint where the sides wrap around the back (as is usual for citterns) from the neck-block, but only as far as the widest point, where they change abruptly to rest on the back, guitar-fashion. It has been suggested that this was an English idiosyncrasy, but it seems much more likely that it is the result of the softwood belly shrinking across its width more than the back, and a restorer who wished to retain the appearance of the back. The published drawing matches the Brescian outlines. So far it does not appear that the date of the instrument has been confirmed. A very indistinct label may read 1579, or 1679. 1579 could make it English and the instrument for which Holborne and Robinson wrote. But the zitterlein illustration in Praetorius and another in Robinson show instruments with nine pegs. The Vermillion cittern has only eight. Sir Peter Leycester writing in 1656, about the treble cittern, now called the gitterne, says *'It contayneth four Course of strings, as at this day we use it: each course being doubled, having two strings of one sound in each course: They are wire strings: and is a played upon with a little piece of a Quill..... '* This makes 1679 seem more likely, so that it might be the gittern of Playford for which books of music exist, or the 'discant' cittern described in the South German 'A.S.' ms. now in Edinburgh University Library. Music for a gittern-tuned instrument is in the Elias Walther autograph book in Dresden. (See Donald Gill, *'The 17th c. Gittern and the English Zitterlein'*, Lute Society Journal XXXV, 1995.)

Analyses of some carved Italian citterns do suggest how their outlines could have

been made, but not when this was done. The width of the lateral belly-curve would be considerably less, because of the sloping sides, if the outline had been inscribed on the flat surface of the original half-cylinder of a split-log, rather than on the intended curved surface of the sides ready to receive the belly.

Works referenced:
Minguet y Yrol, *'Reglas y Advertencias Generales.....'*, Madrid 1754.
David Van Edwards, *'A Geometrical Construction for a Lute Profile'*, LSJ 1973.
Kevin Coates, *'Geometry, Proportion and the Art of Lutherie'*, Oxford 1985.
Peter Forrester, *'Italian Citterns in the Museum of the Paris Conservatoire'*, LSJ 1991.
Ephraim Segerman, *'Violins, citterns and viols in the Edinburgh 'A.S.' ms'*, FoMRHI quarterly 91, comm. 1576.

A list of extant citterns can be found on Andrew Hartig's website:
cittern.theaterofmusic.com/articles/provisional_list.html
To this should be added the following:

Italy: Traditional
Rossi, made in Urbino. Current whereabouts unknown, 42 cm, diatonic.
E46, Paris. May be a cut-down ceterone. Constructed, 62.5 cm, partially diatonic.

Low Countries
D32026, Paris. Made in France or the Low Countries, 54.2 cm, diatonic.
Anon, Lisbon, no information.

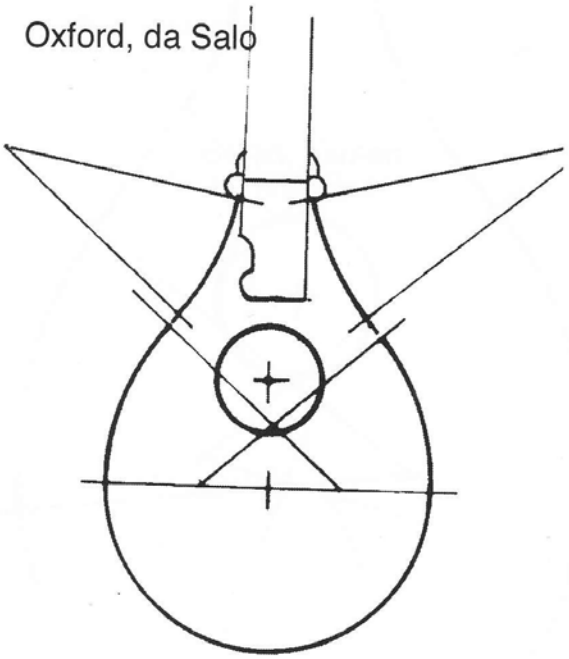
Germany
Anon, V&A 10/2 should be listed here, as probably made in Cologne. Originally diatonic, 39.4 cm.
Michael Bochem, Oxford. c.1720, 45.7 cm, diatonic.
Several more citterns by the Bochem family are extant, in Paris and elsewhere.

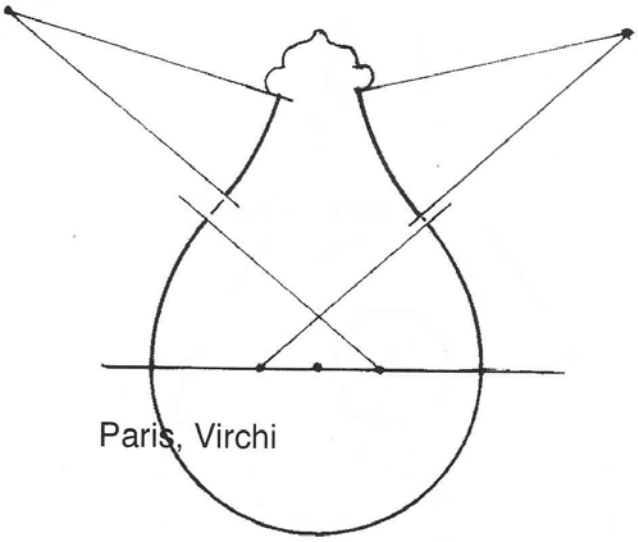
England or Germany?
Petrus Raitta? Vermillion, 34.2 cm, chromatic.

Some ratios had been noted in Coates' analysis of the design for the Paris Virchi(?) but, perhaps due to the small number of accurate drawings available, little was found that is common to several citterns. However, a 3:2 ratio for body length:width is almost exact for the Petrus Raitta and Brussels citterns, with the length slightly longer for four examined from Brescia. Also, for the same citterns, the division of the string length by the bridge is 4:1, with the working length slightly longer in Brescia.

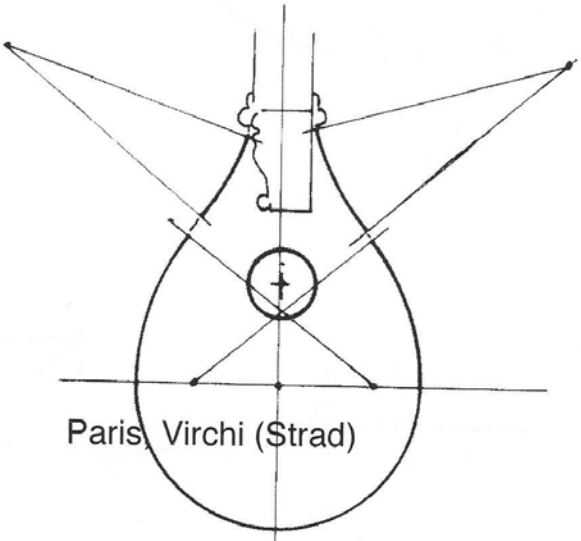
The drawings are not to scale.

Oxford, da Salo

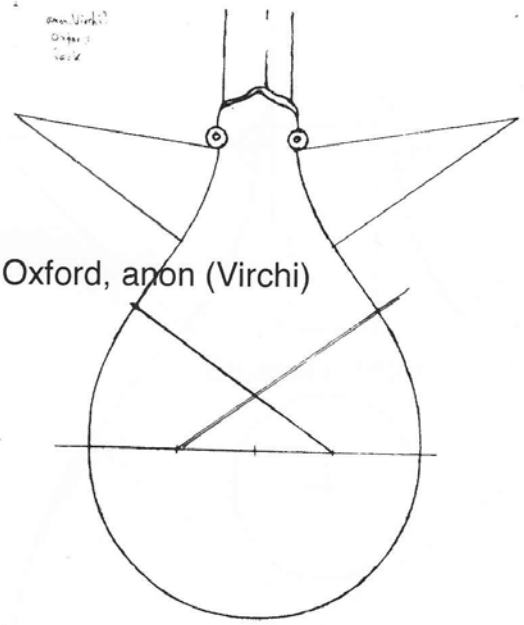




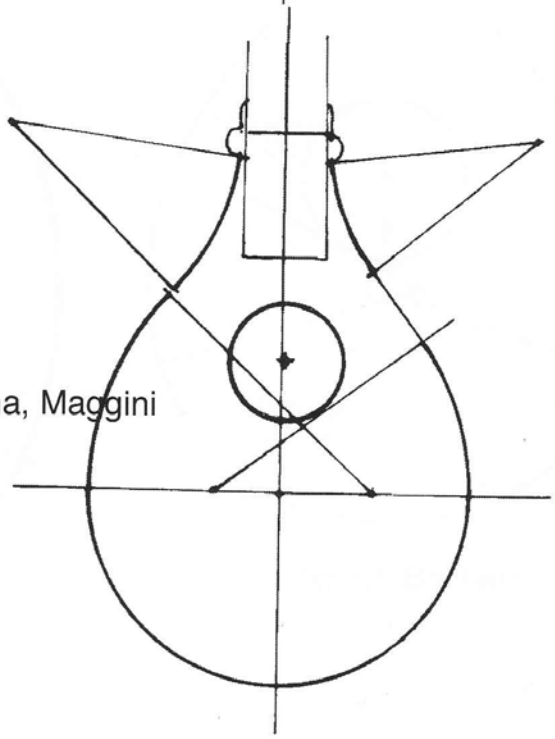
Paris, Virchi



Paris, Virchi (Strad)

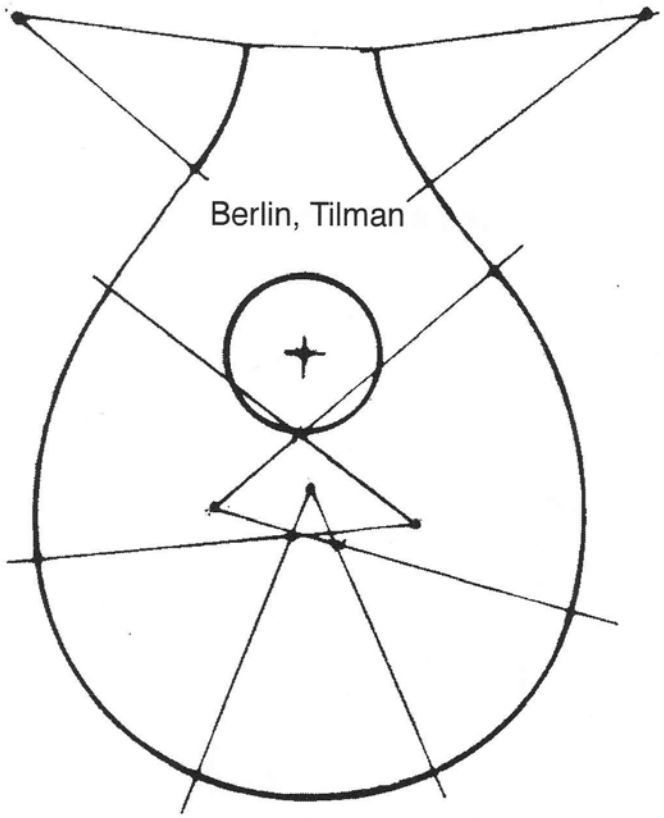


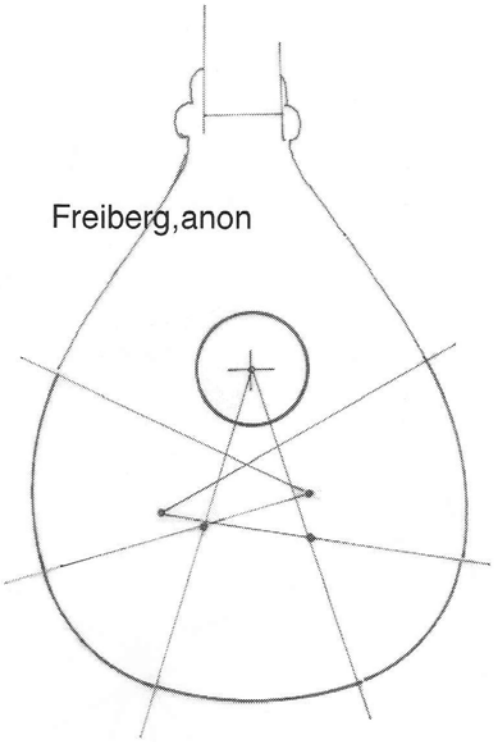
Oxford, anon (Virchi)

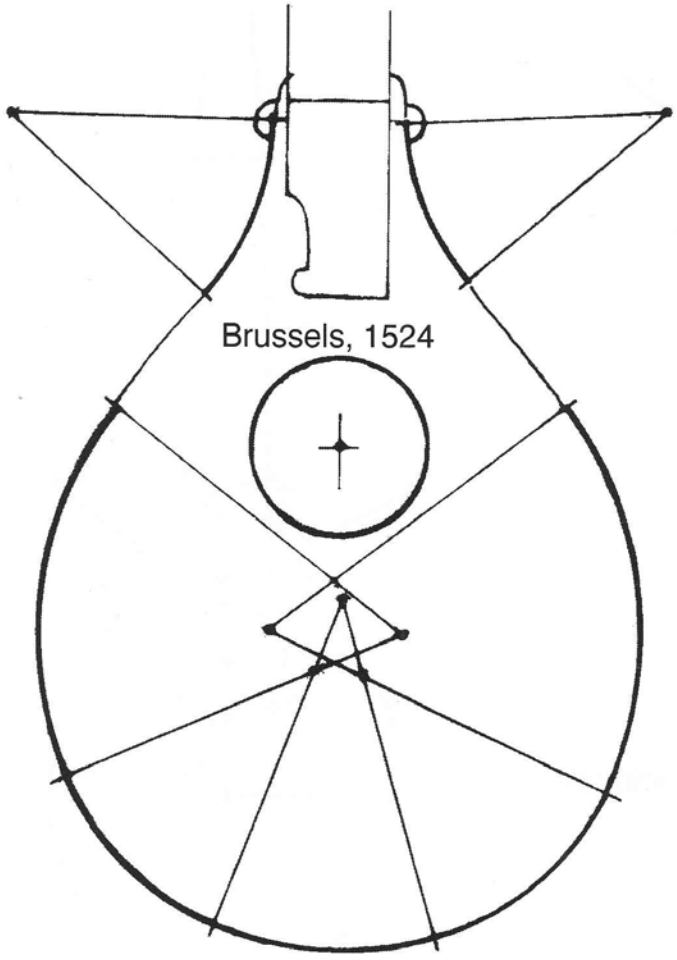


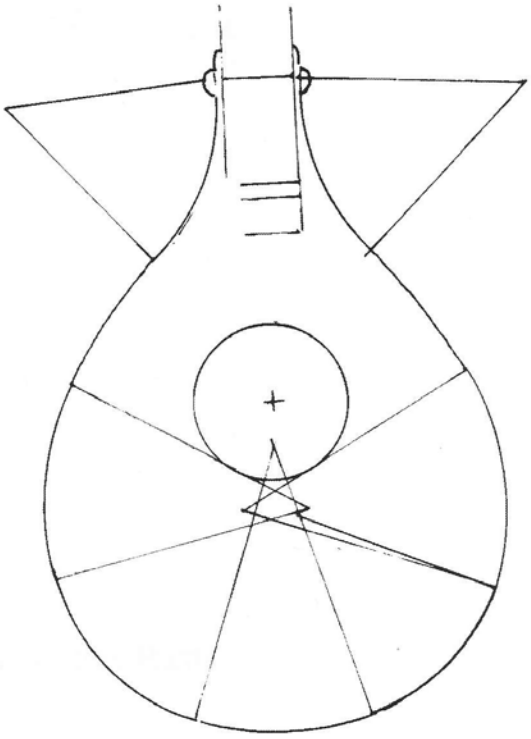
Vienna, Maggini

Brescian Citterns





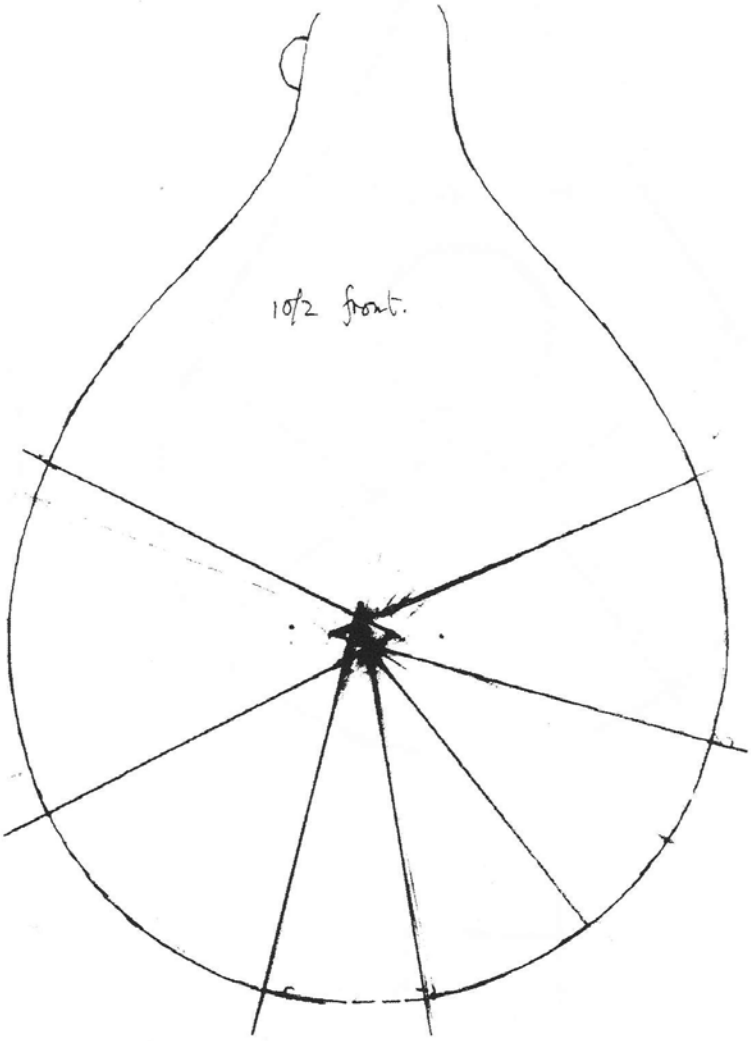


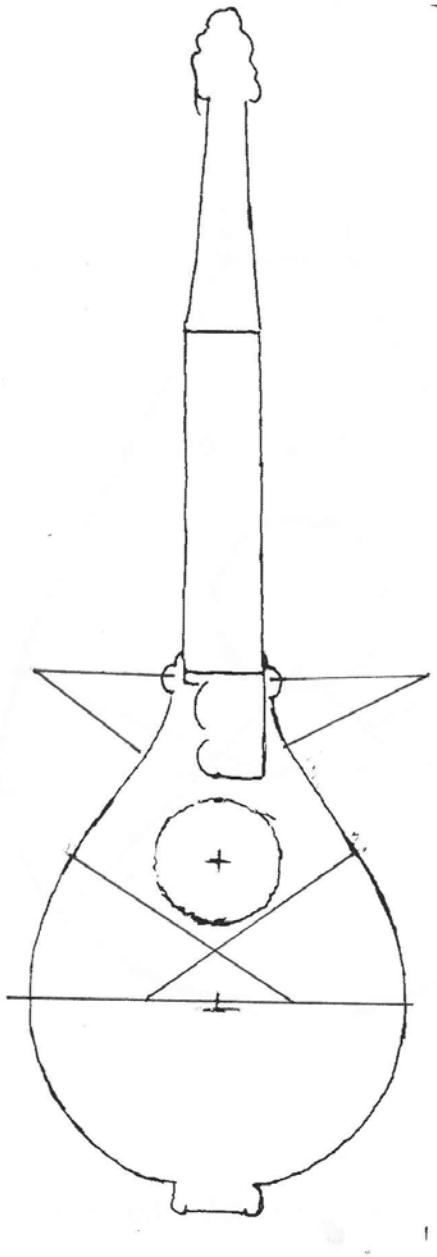


Oxford, Bochem

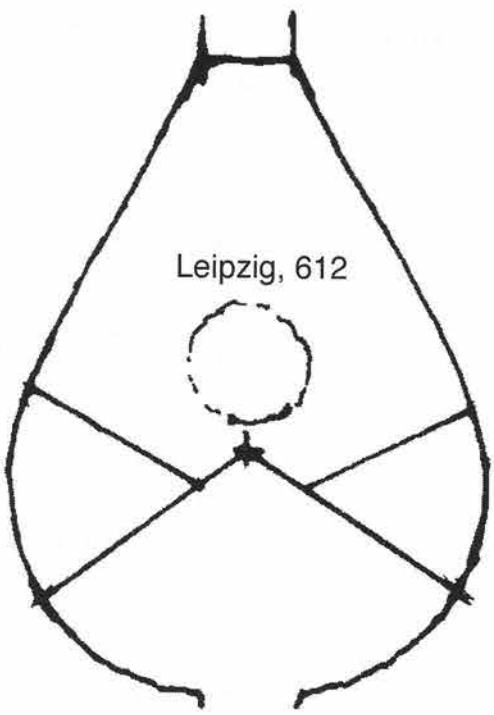
North European Citterns

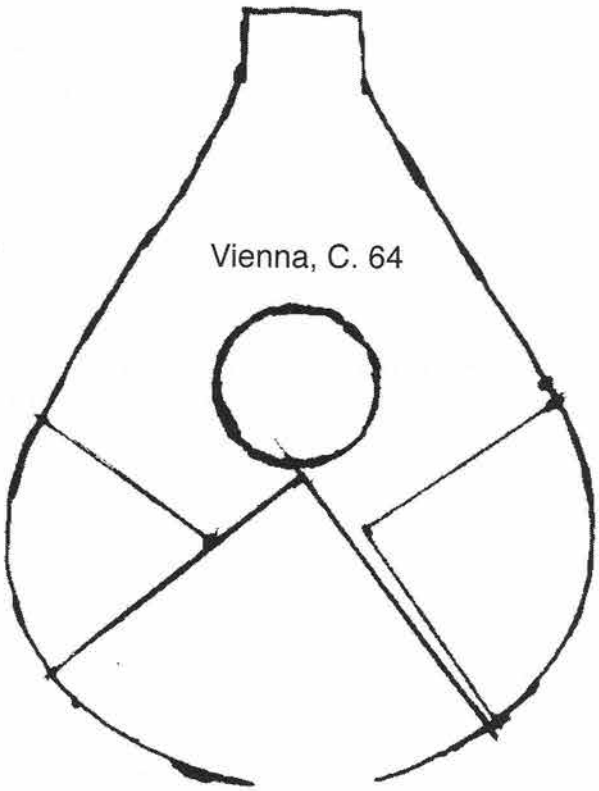
London, V&A 10/2

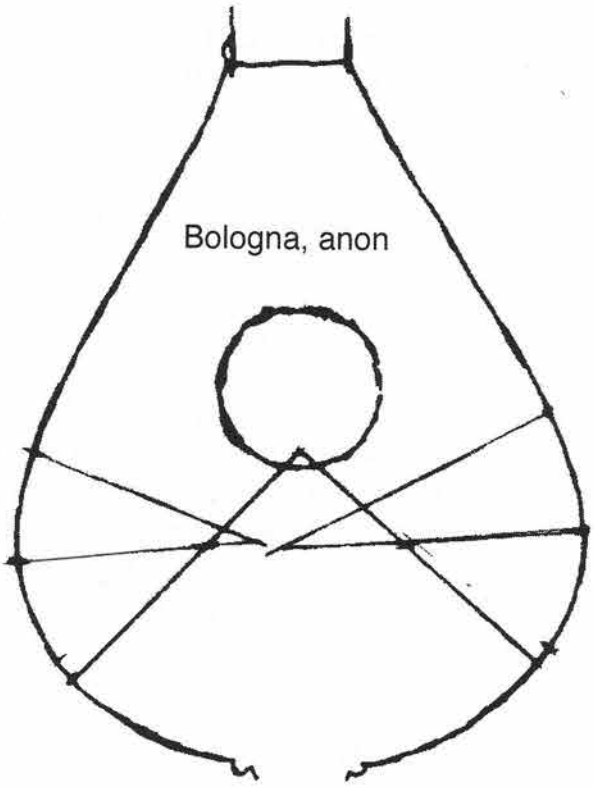


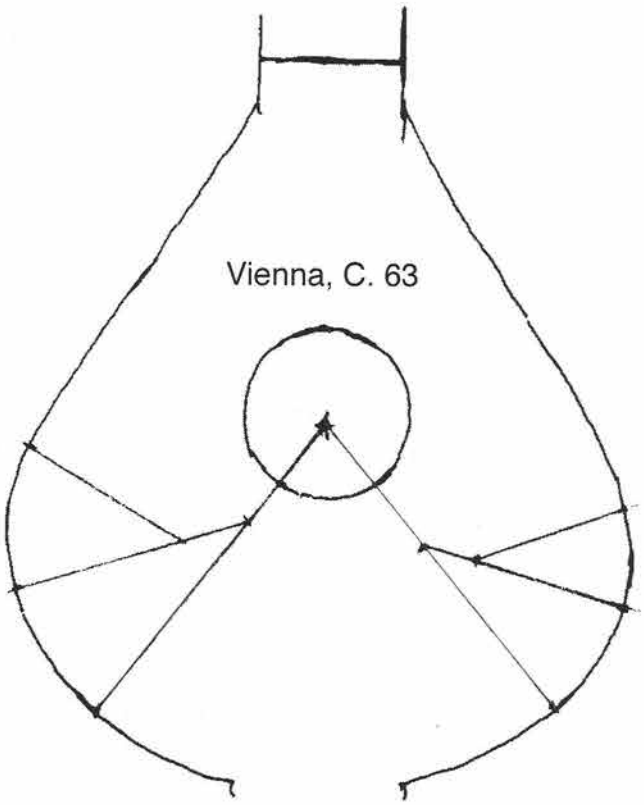


Vermillion, Petrus Raitta?









Carved Italian Citterns