

The Wire Connection

By Andrew Hartig

Who's Afraid of the Diatonic Cittern?

Of all the period wire-strung instruments I play or have played, my favorite by far is the Franco-Flemish 4-course diatonic cittern. However, it is an instrument that very few early music enthusiasts have taken up, and it is met with strange stares by musicians and early music enthusiasts alike more times than I care to recount. But what can one expect? Even the spell-check on my computer's word processor suggests *diabolic* as a correction for *diatonic*!

That said, the diatonic cittern's general neglect by the early music community today is decidedly undeserved. Diatonic fretting was not a passing fad or an archaism that was quickly replaced by chromatic fretting. Rather, the diatonic fretting pattern was used on citterns from the earliest decades of the 16th century through the end of the 18th—even though chromatic fretting was used on the

F G A B [C]. This is true for any major scale in any key, e.g. *F G A Bb C D E [F]*. Despite the flattening of the “*B*” in a F-major scale, each note name (*A* through *G*) is used only once or in one quality or form (natural, flat, or sharp). Furthermore, one is not limited to major keys: one could change the starting note of each scale and, using only the natural (white) keys of the piano, still have a diatonic scale—which is exactly how jazz gets its various modes. The important component here is that the notes of the scale are comprised of only one kind or quality of note per note name—in other words,

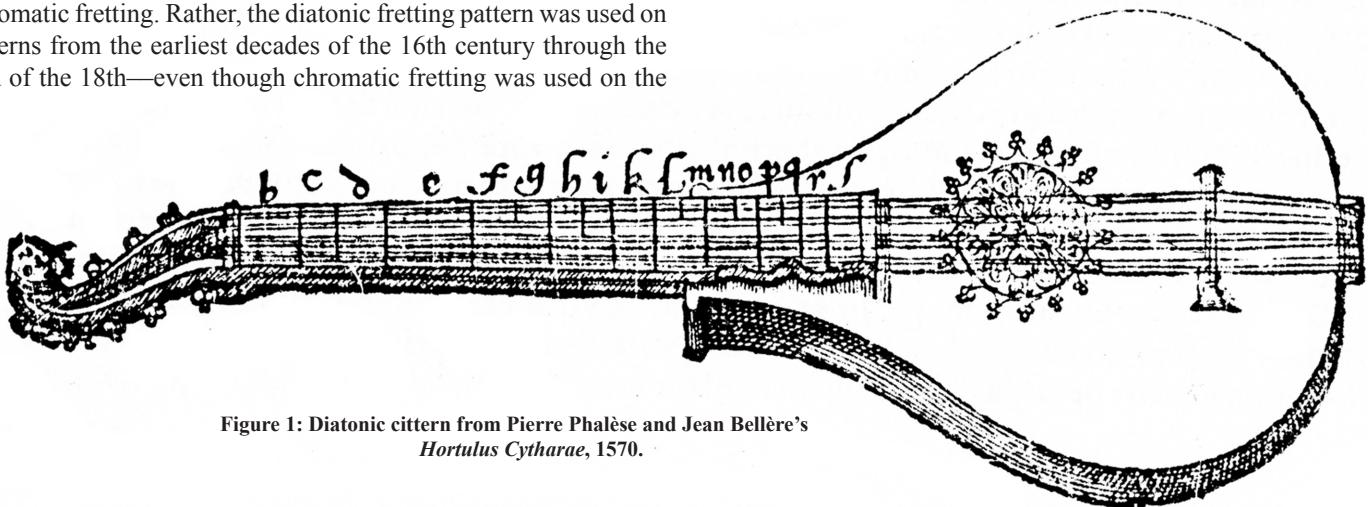


Figure 1: Diatonic cittern from Pierre Phalèse and Jean Bellère's *Hortulus Cytharae*, 1570.

cittern by at least the mid-16th century. In addition, when compared to its chromatic counterpart, the vast majority of surviving music for cittern is for the diatonic—not the chromatic—instrument.

So what are we missing? Why is an instrument that was used extensively throughout France, the Netherlands, Germany, Switzerland, Scandinavia, Scotland, and possibly England and Spain underutilized and misunderstood in today's early music scene? I suspect that it is a combination of the fretting, tuning, and tablature notation, along with an under-appreciation of its other features. What I hope to accomplish in the following article is to demystify this once common instrument by giving a basic overview of its features and how they contribute to the instrument's versatility and, by doing so, to inspire you to want to try one.

“Diatonic” vs. “Chromatic”: Some Definitions

The term “diatonic” comes from Greek and means roughly “between two tones” (of the same scale). In other words, a diatonic scale is that which is played with each of the note names, without repeating one with a different quality or form. An example of this would be the white keys on the piano for the C-major scale: *C D E*

one cannot have, for instance, *D#* and *D* in the same scale.

By contrast, a chromatic scale may have multiple forms of the same note. The word “chromatic” comes from Latin and Greek and means “colored.” This refers to the alteration (or “coloring”) one makes to a note by flattening or sharpening it. An example of a completely chromatic scale, starting on C, might look like *C C# D# D E# F# G# G# Ab A A# Bb B [C]*.¹ A chromatic fingerboard then is one in which any type of scale may be played since all of the “tone colors” are present, whereas a true diatonic fingerboard would only allow one to play a diatonic scale without chromatic alterations.

Don't Fret Over Diatonic Fretting

In many respects, referring to the Franco-Flemish cittern as being “diatonic” is a bit of a misnomer, as none of the historical citterns that survive is purely diatonic. (Examples of purely diatonic instruments, for instance, are the American Appalachian / mountain dulcimer or the French epinette.) Instead, what survives is a mostly diatonic fretting with partial frets to fill in useful chromatic notes (see Figure 1). While the “diatonic cittern” should more properly

be referred to as “partially diatonic” or “partially chromatic,” it is still referred to as “diatonic” because the complete frets represent a diatonic scale.

On the diatonic cittern fingerboard illustrated in Figure 1, the first seven complete frets—minus the first fret—provide the intervals to sound on the second course a Dorian scale: *D* (open) *E F G A B C [D]*.² So why is the first fret complete? At some point, players discovered that several very useful notes were available with a complete first fret, so it became a standard inclusion for diatonic fretting.³ According to iconographical evidence, the other partial frets for chromatic notes were added over time as they were found useful or as the demands for chromaticism grew. They were added first under the first course only, then eventually under the second (and sometimes third) course. However, it should be mentioned that despite music moving into a new chromatic direction with the *Seconda pratica* and *Nuove Musiche* of the 17th century, one still finds historical evidence of diatonic fretting being used for this same music.⁴

So why all the fuss to have partial or missing frets? Why not just have chromatic frets? One simple answer is that the partial fretting is a feature that actually helps to make playing the instrument easier because it allows the player to be less precise with his left hand. By not having an unnecessary chromatic fret, one may place the fingers of the left hand somewhat approximately and still yield correct notes on the instrument.

This imprecision not only made the instruments easier for amateur players, it was also exploited by professionals and facilitated the playing of chords given both the tight finger spacing and the long occasional stretches that result from having a small note range in few courses. Some examples of how this fingering imprecision works may be seen in Figure 2. Note the last chord in particular and how the wider spaces between the missing frets give one a greater shot at creating it quickly—something hard to do on a chromatic instrument.

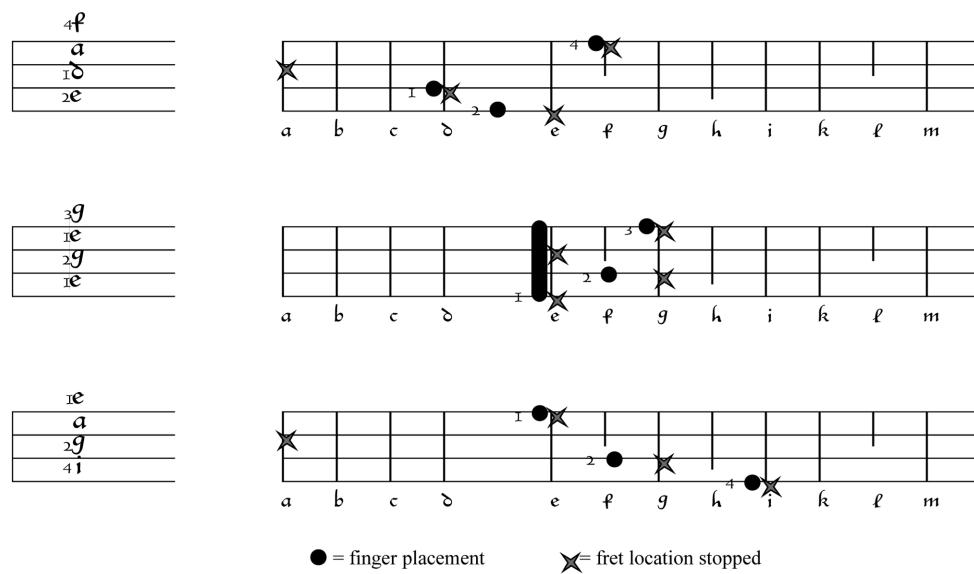


Figure 2: Examples of fingering imprecision allowed by diatonic fretting.

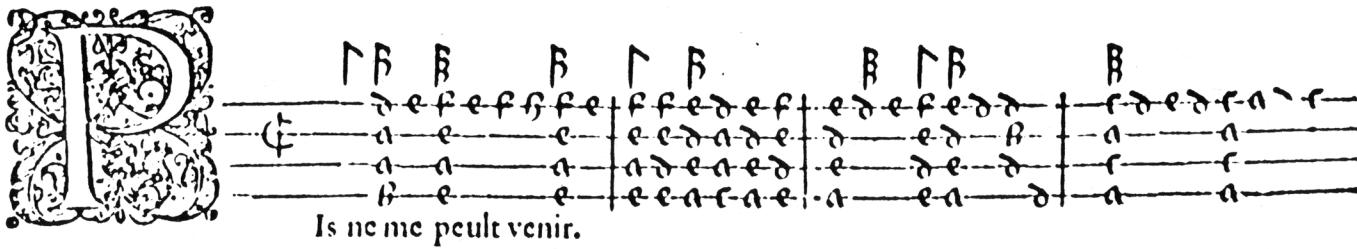


Figure 3a: The beginning of “Pis ne me peult venir” in diatonic tablature, from Pierre Phalèse and Jean Bellère’s *Hortulus Citharae*, 1582.

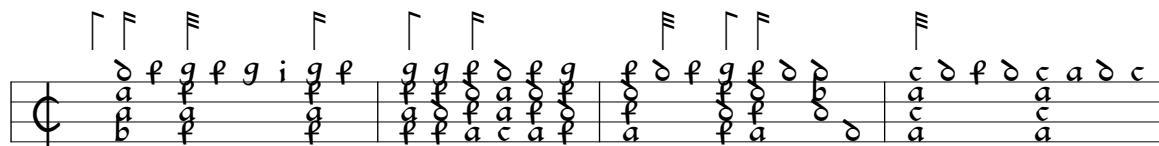


Figure 3b: The beginning of “Pis ne me peult venir” transcribed into chromatic tablature.

From Notes to Notations

Diatonic cittern tablature deals with the problem of missing and partial frets in various ways, much like German tablature adapted to the later addition of courses to the lute—though most of the solutions for cittern are much easier to comprehend than German tab! While there are a few different cittern tablature styles and types, most of the notation is of one type and is easy to understand. This is what one might call the “missing fourth fret” type. Since the fourth fret was completely absent on the majority of diatonically fretted cittersns, a cipher for it was simply not included in the tablature.⁵ Partial frets are still notated by their letter (or number), and the absence of part of a fret is not notated in the tablature any more than it would be when one doesn’t play a fret on the lute. What this means is that the tablature reads like chromatic tablature but “shifted” when it comes to notating the fifth fret and higher, i.e. fret 3 = *d*, but fret 5 = *e*, fret 6 = *f*, etc (see Figure 1).

As one can see from Figures 3a and 3b, reading this “missing fourth fret” tablature takes a little bit of practice but is not really all that hard. And playing with partial frets is again no different than playing a chromatic instrument; one doesn’t need to worry about which frets are partially absent since the tablature never calls for those locations.

The vast majority of printed and manuscript music for the 4-course diatonic is in French tab. However, just like for lute tablature there are some minor variations. One involves the replacing of letters with numbers without inverting the tab—so called “Spanish tab”—as used by Sixt Kargel (Figure 4). One also finds examples of Italian tablature, such as in the *Sammenhammer Manuscript* (Figure 5).⁶

Tuning: A (major) Second Opinion

Aside from the partial fretting, another feature that sometimes confuses players new to the cittern is the tuning. The 4-course diatonic cittern was set apart from other plucked-strung instruments of the Renaissance by its unique tuning, which is both re-entrant and contains two intervals of a major 2nd. While the basic intervals of the so-called “French” tuning is 2-5-2, octave stringing is typical on the fourth and third courses, as seen in Figure 6, giving one ten strings in 4 courses, nominally *aa'a'-gg'g'-d'd'-e'e'*.

Many lutenists I’ve introduced to the cittern are initially confounded by the concept of re-entrant tuning, and yet players of baroque guitar seem to have no trouble with the idea! More likely it is the “strange intervals” of the strings that confuse players, so let’s take a brief look at why the cittern is tuned the way it is.

The intervals of the “French tuned” diatonic cittern can actually be seen as two sets of 5ths: one set between the inner courses (*g* to *d'*) and one between the outer course (*a* to *e'*). This gives one the ability to play easy, movable chord shapes using only a couple of left-hand fingerings. One can see from the starred chords in Figure 7 how a “2-1-4” fingering allows one to quickly traverse the length of the fingerboard for a variety of chords while only shifting the location of the first finger. Another common fingering of “2-1-3” yields several more common chords. Put them together, and one finds how truly easy it is to play something like the piece in Figure 8. This greatly speeds up the learning curve and allows one to dive into satisfying and fairly complex music pretty quickly.

Open to Sonorous Possibilities

Because of the intervals of the tuning, one is able to play all four courses most of the time without having to result to barre chords. This not only simplifies technique, it also allows one to play on all of the courses the majority of the time, which increases both the ability to strum and increases the sonority of the instrument (don’t forget that we are talking about ten strings over four courses). Yet another feature of the tuning is the ability to use open strings as part of the chord voicing—even in the highest positions. The chords in Figure 7 are a representative sample of the kind of chord voicings one finds in the cittern repertoire. While open chords can be found in both the lute and guitar repertoires of the 16th century, open chords are found as part and parcel of the cittern repertoire (for example, see Figure 8) in all but a few of the sources and are hence an integral part of its sound.⁷ The use of open strings in cittern chords gives the chords a kind of ringing quality which, when paired with the wire strings, gives a very appealing timbre to the instrument.

Play it Up! Octave Stringing

As mentioned above, octave stringing was typical on the 4-course diatonic cittern. In fact, it can be considered to be one of the defining features of the Franco-Flemish diatonic. While the use of an octave string in a course is fairly well known to lutenists, it manifests itself differently on the cittern—both for different reasons and with different results. Fundamentally, it is the difference in physics between gut and wire strings that influences why an octave string is used.⁸

With gut stringing, octave strings become necessary on the lowest courses because the thickness of the gut changes the elasticity of the string and increases the inharmonicity of the string, creating a “duller” sound. The octave string helps to “brighten” the sound of bass string while still allowing one to hear the fundamental frequency of the bass note. (Incidentally, changing the structure of the string by creating a “roped” construction creates a more elastic string, thereby minimizing inharmonicity—the reason why NRI’s “catlines” or Gamut Music Inc.’s “Pistoy” strings sound brighter and can be used successfully without octave strings for some courses.)

On the other hand, because of the different physical properties of wire strings, low wire strings will sooner experience pitch distortion—bending out of tune when fretted—before they will experience inharmonicity. Adding an octave string to a wire-strung course will still brighten the sound, though as one can see, it does so somewhat unnecessarily as compared to gut strings. (To fix the pitch distortion problem, the lowest strings of cittersns, orpharions and bandoras utilize a “twisted,” “twined,” or “wreathed” construction in which the string is twisted back on itself in a rope-like manner in order to change its elasticity.)

For whatever historical reasons, octave strings were paired with the two lowest twisted courses of the Franco-Flemish cittern. Since one can rule out a physical sound necessity as with gut (though one is tempted to speculate that this was the original reason they were tried), one must come to view this stringing as a stylistic choice. Perhaps out of a desire to avoid sharp string ends, two octave strings were used in a course by taking a single wire and running it from one peg, down around the hitch pin, then back to another peg. (The twisted strings have their own naturally created loop.) All of this results in a prominent octave sound on the lower two courses. Aside

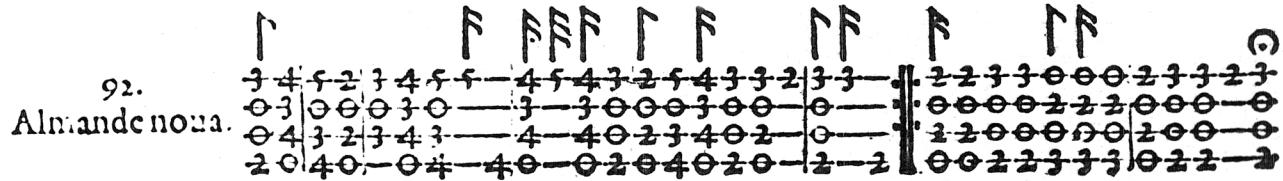


Figure 4: “Spanish” cittern tablature from Germany. “Almande nova,” from Sixt Kargel’s *Renovata Cythara*, 1578.



Figure 5: Italian cittern tablature. “Galliard,” from the *Sammenhammer MS*, c. 1590. Poland, Torun, Ksiaznica Miejska im. M. Kopernika, J.40.342-102682.

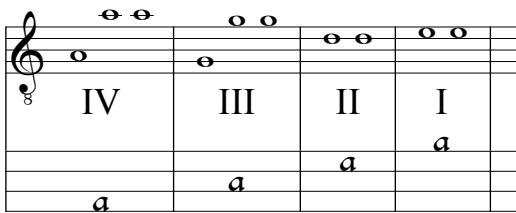


Figure 6: 4-course diatonic cittern tuning.

A	Bb	C	D	Dm	E	F	G
a 4e 3i 2c 1c 1g 1c 1c 2i a a a	4f g 18 2e	a a 3d 4h 1c 1e 1c 1e a a g g a a 41 21	2c 4e 1e 4k 1c 1c 2g 1g a a q q a a 41 21	1b 4n 2c 1k a m	a 3c 1d a	3e 1e 2e a	3d 4g 4g 2k 4p 4p 4p a a 2e a a m a a a a a m a 1c 1e 1e 1k 20 20 20
*	*	*	*	*	*	*	*

Figure 7: Common open-string chords.

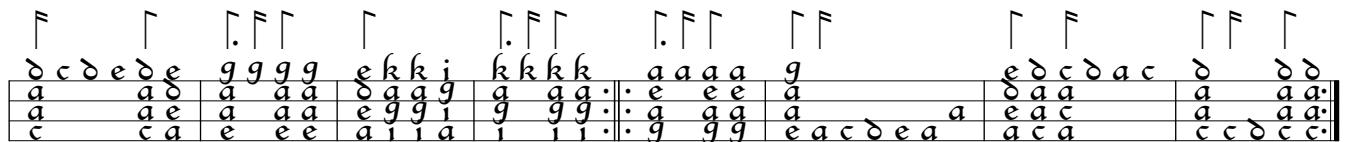


Figure 8: Exploitation of open-string sonority. “Allemande des Estudiantz,” from the *Rothschild MS*, Paris, Bibliothèque Nationale, Rothschild I 411.



Figure 9: Excerpt from “Chy passa” from Pierre Phalèse and Jean Bellère’s *Hortulus Citharae*, 1582.

from the increased sonority octave stringing creates, this feature was exploited by composers/arrangers of cittern music in a number of ways. One of these ways was to sound the melody on the octave strings of the lower courses, which eliminates or reduces position changes as can be seen from the bracketed notes in the brief passage in Figure 9. (The octave stringing also was used in more advanced playing technique, but that will be the topic of a future article.)

Conclusions

Hopefully one can see that the Franco-Flemish diatonic cittern is not some mysterious archaic holdout from bygone eras of the pre-renaissance, but rather a well thought-out instrument with intentional features that made it an equal with its chromatic counterpart for the better part of two and a half centuries. Like with so many things in early music, one learns the rationale of our musical forebears by having faith in their traditions and trying to recreate their performance practices. The 4-course diatonic cittern should be no exception to this rule, but unfortunately it has been underappreciated and underutilized, possibly due to musical bias for the English repertoire, which calls for the 4-course chromatic cittern. Ironically enough, it does not appear from the historical record that the chromatic was the cittern of choice in most regions, and the use of the chromatic cittern by today's early music ensembles may over-represent its prominence historically.

Lest one think I am overstating this claim, I would like to leave you with an interesting historical tidbit: Diatonic fretting was so significant to musicians and builders of the past, that the diatonic fret pattern was retained—visually—in many chromatically fretted wire-strung instruments by the use of “color-coding” in the wooden “wedges” that backed the brass frets. This same color-coding was used on the frets not only of chromatic cittersns, but is found in the fretting of numerous extant *cithrinchen* and the Palmer orpharion—despite their differences in tuning.

There is much we can learn in early music by reading, but we only really know through doing. I hope this article has given you the first steps to understand the diatonic cittern so that the next time you encounter one you won’t be afraid to pick it up and give it a try.

Sources and Additional Reading:

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Notes

¹ On an equally tempered instrument, the sharpened and flattened notes between tones (e.g. C#/Db) are considered enharmonic (i.e. the same), though this is not true for other temperaments or tuning systems. For more information on the sizes of semitones and the difference between chromatic and diatonic semitones, see Mark Lindley’s *Lutes, Viols and Temperaments*. Cambridge University Press (1984).

² One interesting fact that has not yet been satisfactorily explained is that the pattern of the frets repeats at the 5th rather than at the octave. This may tell us about how early musicians understood or practiced music theory in relation to instruments.

³ One notable exception to this is the earliest extant printed cittern source, Guillame Morlaye’s *Quatriesme Livre ... en Tabulature de Guyterne, & au jeu de la Cistre...* (Paris, 1552). Morlaye’s cittern tablature reflects that his cittern was not equipped with a first fret, but the next extant tablature (by Le Roy in 1564) and all subsequent tablatures do, giving us an idea of about when the first fret becomes standard on the diatonic instrument.

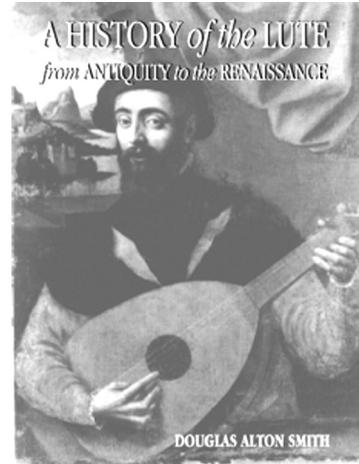
⁴ The manuscript Naples 7664 (Conservatorio di Musica S Pietro a Majella, Biblioteca) contains an intabulated accompaniment, for 6-course diatonic cittern, of “Udite udite amanti” from Caccini’s *Nuove Musiche*. For more information, see Victor Coelho’s “The Players of Florentine Monody in Context and in History, and a Newly Recognized Source for Le nuove musiche” in the *Journal of Seventeenth-Century Music*, available on-line at <http://www.sscm-jscm.org/v9/no1/coelho.html>.

⁵ Sebastian Vreedman’s *Nova Longeque Elegantissima Cithara Ludenda Carmina...* (Louvain, 1568) contains one piece, “Chorea Diana” by M. Simon Levart that calls for a fourth fret under at least the second course. Vreedman uses a slanted # symbol below the “e” cipher to indicate the added fret. The additional fret location was unusual enough to mark with a separate symbol rather than change to a chromatic tablature.

⁶ “Schone Psalm und Geistliche Lieder auf der Cither.” Poland, Torun, Ksiaznica Miejska im. M. Kopernika, J.40.342-102682. It should be noted that although the manuscript calls for French tuning, the tablature clearly indicates that it is for chromatic cittern, so the “4” in the tablature example here really does represent the fourth fret.

⁷ The works of Le Roy, for instance, make a much greater use of barre chords than open chords—a style that appears to be particular to him.

⁸ For a more complete discussion of the differences between the properties of gut and wire, see Ephraim Segerman’s *The Development of Western European Stringed Instruments* (2006). Available for purchase at <http://lulu.com>.



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