Reprinted from "The Lute Society Journal", Volume XV, 1973

ROBERT FLUDD ON THE LUTE AND PANDORA

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The short instructions and descriptions which are our subject are in no way comparable with those contained in works such as Thomas Robinson's *The School of Musicke* (1603) and Thomas Mace's *Musick's Monument* (1676). Neither can we truly call them an "English Lute Treatise", since they were written in Latin and published in Oppenheim (in 1618). But their author was English, lived in London where he practised as a physician, and his writings were certainly known in his own country. His chapters on the Lute and Pandora, moreover, are with the above works and the Dowlands' *Varietie of Lute Lessons* (1610) the only technical writings on the subject produced by an Englishman in the seventeenth century.

The philosophy of Robert Fludd (1574-1637)[1] was at odds with the temper of the age following his death, and for a long time he was ignored by all but a few specialists in such recondite subjects as Alchemy and the Rosicrucians. In recent years, however, he has been recognized by Allen G. Debus, Frances Yates, and other serious scholars as a fascinating and important figure, comparable to other "universal" minds of his time such as Marin Mersenne and Athanasius Kircher, to mention two others who also wrote on musical matters. Fludd's published writings are many and exceedingly various, displaying a bias towards occult philosophy and medicine but also touching on subjects as diverse as meteorology, the Kabbala, and military fortification. He lived somewhat later than the period when it was possible for one man's mind to encompass the whole world of learning, yet he had an astonishing grasp of what makes this world go round, and many ideas on the next.

Music was symbol as well as sound for Fludd. He held to the Boëthian conception of the three musics: *mundana* (of the heavens or spheres), *humana* (of the human constitution), and *instrumentalis* (of voices and instruments), and he went to great lengths in his explanation of all three, with their correlations. For this purpose he used as a combining

1 For details of Fludd's life and works, see the article on him in the *Dictionary of National Biography*. A more complete version by Allen G. Debus, together with a list of recent writings about him, is to appear in the *Dictionary of Scientific Biography* (N.Y. 1966-).

symbol, the monochord, the instrument of Greek and medieval theory: indeed, one of his works (part of a controversy with the astronomer Johannes Kepler) is entitled *Monochordum Mundi* ('The Monochord of the World'). This is no place for an exposition of his theories on music taken as a whole, but some idea of their scope will be useful to put our present subject in perspective.[2]

Fludd's largest work bears the unwieldy title *Utriusque Cosmi Maioris scilicet et Minoris Metaphysica, Physica Atque Technica Historia* ('Metaphysical, physical and technical History of both the greater and the lesser Cosmos'). This was published at Oppenheim in sections as follows:

(a) *Utriusque Cosmi* . . . Tomus Primus *De Macrocosmi Historia*, Tractatus Primus *De Metaphysico Macrocosmi* . . . (1617)

(b) Tractatus Secundus *De Naturae Simia* . . . (1618)

(c) Tomus Secundus *De Supernaturali* . . . *Microcosmi historia, in Tractatus tres distributa* . . . (1619)

(d) Tomi Secundi Tractatus Primi Sectio Secunda, *De technica Microcosmi historia* . . . (1620)

(e) Tomi Secundi Tractatus Secundus; *De Praeternaturali* . . . (1621)[3]

The third tractate of the second volume never appeared.

The volume of 1618 consists of eleven *Partes* on various subjects of human (as opposed to Divine) invention, including the divisions of the Quadrivium. The section on music, entitled *De Templo Musicae*, occupies pp. 159-258: about one-eighth of the volume. The section is in its turn divided into seven *Libri*: on music in general, on scales, intervals, rhythm, composition, and instruments. The sixth of these contains the matters now concerning us. It is headed *De Instrumentis Musicis vulgariter notis* ('Of musical instruments commonly known'), and its six chapters treat of the Lute (invariably called *Barbiton*, after the Greek term for lyre), the Pandora and Orpharion, the Viol, the

2 For such an exposition, with many illustrations, see Peter J. Amman on 'The Musical Theory and Philosophy of Robert Fludd' in *Journal of the Warburg and Courtauld Institutes* XXX (1967) pp. 198-227. See also my 'Instruments in Robert Fludd's *Utriusque Cosmi* . . . *Historia*', in *Galpin Society Journal*, XXVI (1973), pp. 2-14.

3 For a complete account of Fludd's complex bibliography, see the soutces cited in our first note, and also J. B. Craven, *Doctor Robert Fludd* (Kirkwall 1902; reprinted 1969).

Cittern (*Cistrona*), Wind Instruments, a "newly invented" Xylophone and Carillon, and a Mechanical Psaltery or Harp of Fludd's own invention. Chapters 3, 4, 5, and 6 are cursory in the extreme and very disappointing to the reader: Fludd gives a few details of only one size of viol, and no tuning for the cittern, while of the wind instruments we learn only that they are various, and that the organ and regal are difficult to play, before Fludd hurries on to what is evidently his major enthusiasm, described in the seventh book.

The place of the lute and pandora in Fludd's works is thus minute: twelve pages in all. We give here a summary of them, with some portions translated (printed in small type). A full translation would be redundant, since Fludd will happily spend half a page enumerating, for example, every note on every fret of the lute—and then show an engraving which makes the whole thing perfectly clear without any necessity for verbiage. The page numbers in the 1618 volume are given.

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Chapter I

On the Lute (*De Barbito*)

Since the Lute is, as it were, the prince of all musical instruments, we deem it fitting to give it first place in this book; for no other invention, ancient or modern, is more seemly for consorts nor more desirable for symphonies, nor more admirable to the ears of listeners. Time destroys not the sweetness of its sounds, neithet do fickle inventions seduce men's affections from it, however rare, unusual, and more easily learnt these may be. Among these are other instruments fashioned like the Lute: Theorboes, which give forth lower sounds and are strung with gut; the Orpharion and Pandora, whose sounds proceed from brass and steel[4] strings; and the Cistrona, which has only four double strings of brass and steel. We shall say more of all these instruments in their turn. Modern musicians sometimes add a seventh string to the Lute, and sometimes an eighth and a ninth, all of which being duplicated total eighteen (for they add three double strings sounding the double octave below the rest, as we shall show).[5]

4 *cupreis et ferreis*—literally "copper and iron", the nearest equivalents available in Latin.

5 Fludd was familiar with the common name for the top string: *Canterella* (p. 230), *Chanterella* (p. 231), but apparently does not think of it as being a single course. In this he is supported by Thomas Robinson (*op. cit.* p. 71) and John Dowland (*Varietie of Lute Lessons*, sig. D.v.). Fludd's actual description of the bourdons is as follows: " . . . *tres nervos duplicatos addiderunt, ut caeteris sonarent Bisdiapason, ut infra demonstrabitur.*" *Bisdiapason* would seem to indicate a distance of *two* octaves: but perhaps Fludd means it in the sense of 'contra-octave', being preoccupied with the Monochord and remembering that there the lower octave is, in a way, twice the upper one. Cf. 'Double bass' etc.

(Engraving of the Lute—our fig. 1)

Note that Fludd, unlike all the other English writers, numbers the lute strings from the bottom. This is illogical, because the number of strings, as even he admits, is variable.

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Lesson I

By what interval does any string of the lute differ from the one adjacent to it?

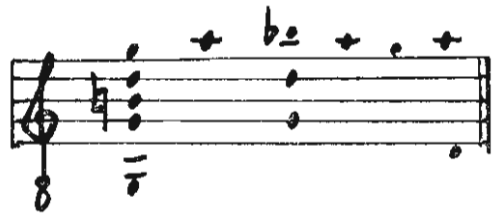
The tuning which emerges from this and the next Lesson is: C D F G c f a d′ g′, with the proviso that the tunings of the two lowest strings are variable.

Lesson II

Of the different positions on the lute, and how the keys and letters are shown upon it

[The letter tablature is explained.] Some people use arithmetical figures in place of letters to represent these spaces [between the frets]: they put 0 for a, 1 for b . . . [etc.] This system is mainly in use among the Italians.

Here we shall describe the system of keys and letters, as expressed in the positions on the lute. Position a on the fourth string denotes the low G [here, as elsewhere, Fludd uses Γ for G]; b on the same gives A-flat . . . On the fifth string the d space [misprint for a] signifies low c . . . [The description continues for every fret up to k on the top string, giving e″].
No. 1. [Engraving of this phrase, in both French and Italian notation, both with the top line representing the highest string.]



[There were at least two printings of Fludd's book, differing in minor details. Some of the tablatures from which my examples are transcribed were re-engraved and corrected (or, in a couple of cases, provided with new errors). By comparing the two printings it is possible to arrive at a 'best' version, given here.]

No. 2. [Engraving of the fingerboard with note names in the appropriate fret spaces from G upwards; also pitches of strings 3-9, and letters and numbers of frets up to k/8.]

p. 229. The first three strings serve in music for the sake of euphony, sounding in the octave below the other strings of the Lute. Thus the first string sounds an octave to a on the fifth string; the second string an octave below c on the same . . . the third string is an octave below a on the sixth, and so forth.

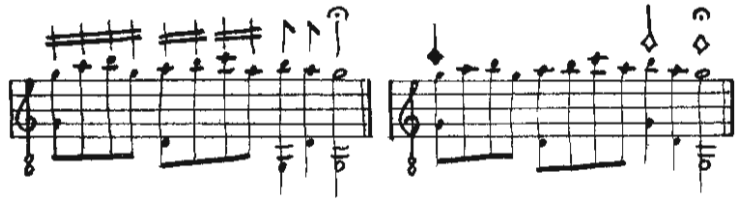
Lesson III

How the measured rhythms of music are expressed upon the Lute

The rhythms of music are described either by characters especially invented for stringed instruments of this kind (Lute, Pandora, Orpharion, Lyra, Cistrona, and others), or else by the common signs of musical melody . . . but actual notes, such as are used in vocal music, are often employed nowadays by the French and Italians, who in place of connected signs use but a single note, the following notes being understood to be similar until another symbol of a different kind intervenes. Thereupon that value becomes current . . .

No. 1 [Woodcut of the two varieties of rhythmic signs]

No. 2 [Woodcut of this phrase][6]



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Lesson IV

How several melodies together may be transferred to the Lute

Several melodies can easily be arranged together for the Lute, if the positions on the strings are written as the following diagram shows:

[Engraving of fingerboard with correlations to staff—see our fig. 2.]

6 During Fludd's time the most common rhythmic notation was a combination of the symbols of the first with the system of the second example shown here. The first example illustrates the notation used more often in manuscript.

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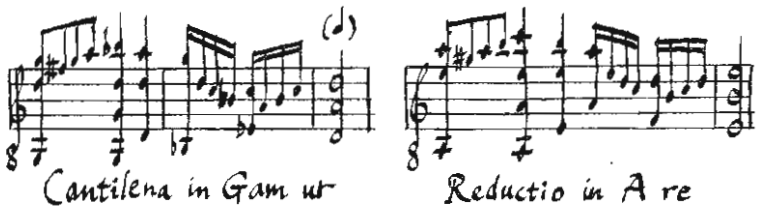
Lesson V

On the transposition of a piece with its parts
from one key into any other, as taught
by the Circle following

If a piece is written for the Lute in G (Γ ut), and we wish to transpose it into A (A re) or B (B mi), or to harder or softer sounds, we must first note that the arithmetical figures in the concentric rings denote the strings of the lute . . .

The letters, similarly, denote the positions on the strings as shown above. Therefore, to transpose a song in G into A, one will look for the given symbols in the G ring, and substitute for each of them the symbols appearing directly below them (along the radius of the Circle) in the A ring—or in the ring of any other key to which transposition is desired.

[Woodcut showing these phrases, followed by an explanation of how transposition was effected by means of the Circle.]



p. 232 (Engraving of the Circle—our fig. 3)[7]

Lesson VI

How the proportions of the Triangle
of Intervals may be matched with
the frets of the Lute, by
the same system

The Triangle of Intervals was a visual aid for polyphonic composition, described and explained on pp. 211-221 of this treatise, which enables

7 William Barley, in the preface to *A New Book of Tablature* (1596), promises "Tables plainely showing the true use of the Scale or Gamut, and also how to set any Lesson higher or lower at your pleasure", but these do not appear in the book.

one to see which notes are consonant above any given diatonic tone. Here Fludd merely says that the outer ring of the Circle can be matched with the Triangle, and the appropriate frets found for consonant notes

. . . and it will not be hard to compose a symphony from diverse melodies—and this even extempore, the Bass melody alone being given: but dexterity in this will not be achieved without assiduous work.

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Chapter II

On the Instruments called Orpharion and Pandora
(*De instrumentis dictis Orpharion & Pandora*)

The musical instrument called the Orpharion has the same fret positions, and the same tunings and distances of the strings. It differs from the Lute only in that its strings are of brass, either single or duplicated. From this it follows, therefore, that the same system obtains as on the Lute, with the same frets for the high and low keys; and everything that can be played on the Lute is possible also on this instrument . . .

[Engraving of Orpharion—our fig. 4.][8]

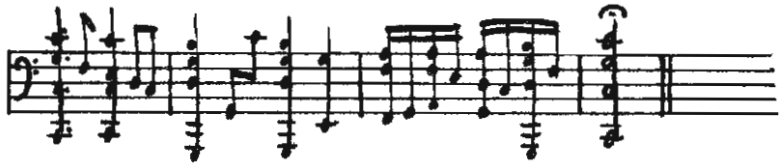
The Pandora differs from the Orpharion only in the tuning of its strings; but here the difference from the tuning of the Lute is considerable.

The Pandora is used mostly in that species of symphony where instruments of various kinds are employed. Here it is found to be useful because in consorts (as they call them) it can make the Bass part pleasantly audible together with the Tenor and Contratenor . . .

p. 234 Full-page engraving of the fingerboard with tunings of the strings and pitches of the frets of strings 4-6 up to fret e, string 7 up to fret k—giving f′-sharp—and fret letters given up to n, beyond which three further frets are drawn.

p. 235 The tuning which emerges from this and the various diagrams is: G′ C D G c e a.

[Woodcut of the following phrase in letter-tablature]



The Musical System of the Pandora

8 The frets of these instruments appear to have been oblique, terminating in an angled bridge, so as to allow a greater length for the lower strings. Fludd and William Barley (*op. cit.*) are alone in depicting parallel frets. For copious information on these instruments, see Donald Gill, "The Orpharion and Bandora", *The Galpin Society Journal*, XIII (1960) pp. 14-25, and "An Orpharion by John Rose", *LSJ*, II (1960) pp. 33-40.

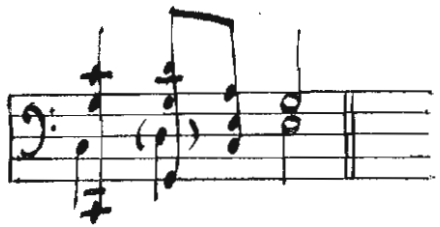
This begins with an introduction to the visual aid presented on the next page.

p. 236 Engraving similar to our fig. 2, showing correlation of staff and fingerboard with frets up to i; the lowest string omitted. Here the third string is tuned not to G but to F.

Rule I

By means of this [diagram], the Bass part can be arranged for the Pandora, or else a Bass composed according to the will of the artist . . .

[Woodcut of the following phrase]



This appears, from the explanation following it, to be a harmonization of the Bass line marked in our transcription by downward stems. The lower d in the second chord, mentioned as such in the text, is misprinted in the example as f.

p. 237 Fludd explains how this was written with the help of the previous diagram

. . . all the Diapasons, found on the largest strings, are of the same nature as notes on the smaller strings; and for the sake of cuphony some use them on the Pandora, just as on the Viol. [This seems to suggest that they can be used to double the Bass line at the octave.]

Rule II

The other parts may be written for the Pandora according to the same system.

Rule III

A Circle of Transposition might have been provided for the Pandora, as for the Lute; but the reader can construct his own, based on the previous example.

* * * * *

It is quite obvious from this summary that Fludd was no lutenist. He may have played at the instrument in his Oxford days during the 1590s (when, as he says elsewhere, most of this treatise was composed);

but this seems to be the work of one who is remembering what he could about the subject, and not of a regular practitioner. There are no words on construction or technique, and the bias is theoretical in a rather eccentric way: Fludd has hit upon a good idea in his "Circle of Transposition"—a most unusual thing for its time, since it considers all keys, in effect, as equally valid—and much of the text centres around this figure and the neat device for entabulation shown in our fig. 2. But that Fludd did not have the time or opportunity to check the proofs is evident from the misprints which may be seen in our musical examples (where all inconsistencies should be understood *sic*): and in this one sees the mark not of a musical pedagogue but of a universal scholar obliged as much by custom as by interest to pay token respect to *Musica Practica*.

Fludd's engraver, who was possibly his publisher Theodor de Bry but more likely an assistant, draws the fingerboards of the instruments in perspective, but the bellies full-face, which accounts for the rather curious look of the lute and orpharion (his engraving of a Viol in the next chapter is patently not made from life) In the illustrations the lute has, variously, nine and six strings; in the four engravings which show the fingerboard, the frets number 16, 6, 9 and 11. The orpharion has nine, and the pandora seven or six strings with fifteen or eight frets: and so on. Obviously, one must go elsewhere for precise iconographical evidence. We would doubt that Fludd had any of the professional lute tutors[9] at hand as he wrote.

Nevertheless, we find the treatise of interest for the following reason: it shows what an English gentleman, brought up in the Elizabethan era, knew about the lute. One reads much of the musicality of amateurs and of the universal popularity of the lute during the period. Here is a writer who has once studied musical theory in considerable depth, and whose mind is devoted to philosophy as he follows his vocation as a Doctor of Medicine. This treatise contains what he thought important in practical music, and what he considered useful contributions to it. His words are less eloquent than his lacunae.

9 The works of Barley, Robinson, and the Dowlands, as cited, together with Adrian Le Roy's tutors: *A Briefe and Easye Instrution* [sic] (1568) translated by J. Alford, and *A Brief and Plaine Instruction* (1574), translated by "F. Ke." Robinson's work is available in facsimile as Vol. II of William S. Casey's *Printed English Lute Instruction Books*, 1568-1610 (University of Michigan dissertation, 1960), and, in facsimile with transcription and commentary, ed. D. Lumsden (CNRS, Paris, 1971).

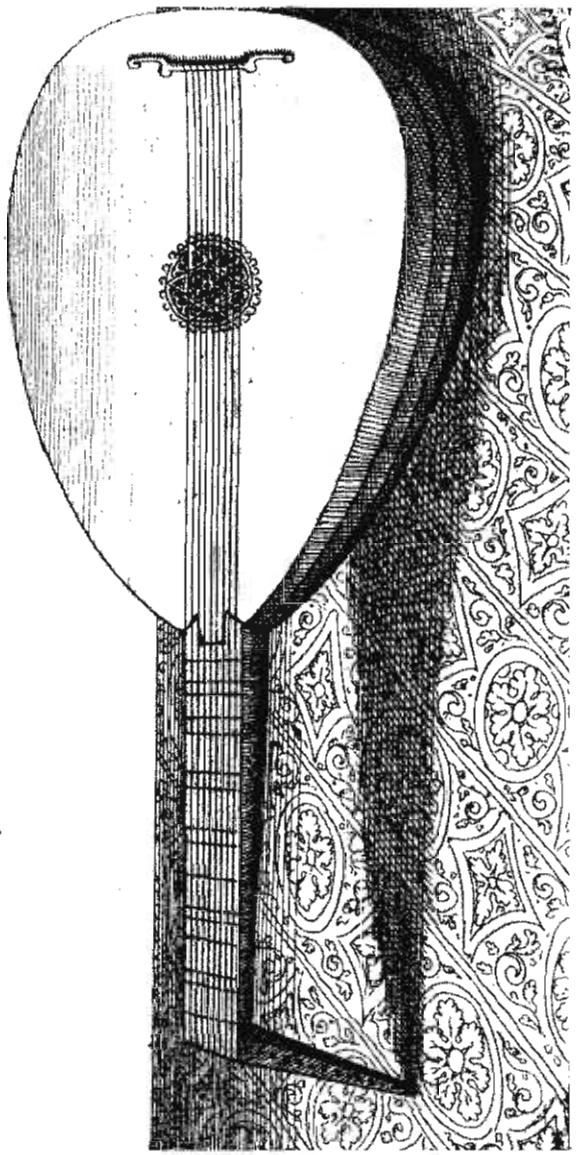


Figure 1

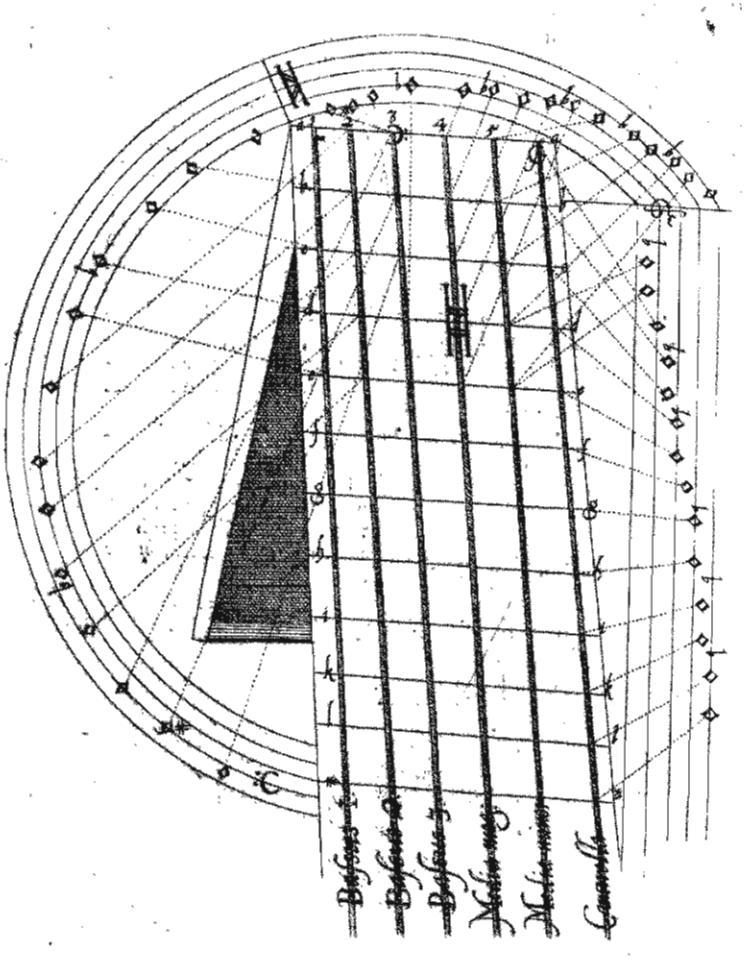


Figure 2

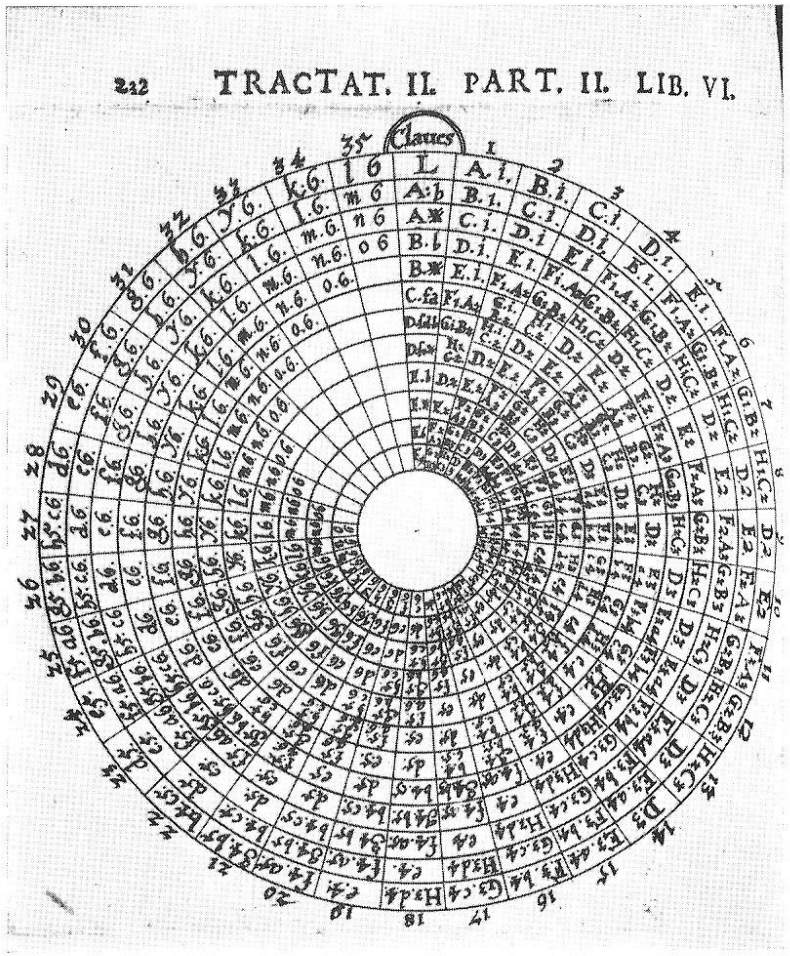


Figure 3

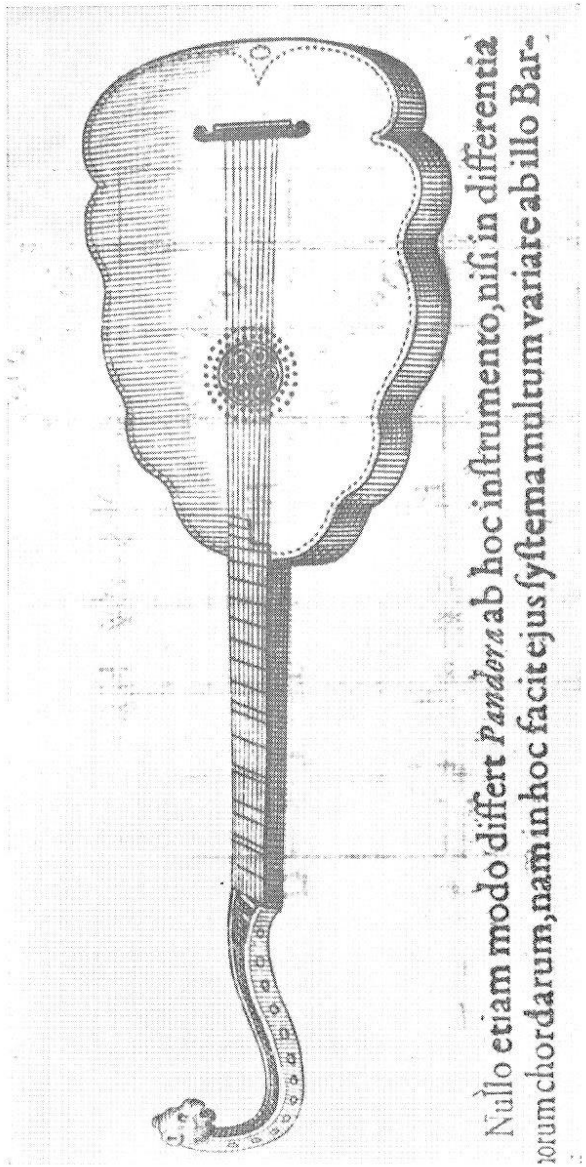


Figure 4

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