50. Vihuela
John Griffiths
Belchior Dias, Lisbon, 1581
Back of kingwood(?), front veneered with brazilwood(?) with decorations of ebony and boxwood, neck and top-block of ebony, 77.1 (length) x 19.9 (width) cm
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An object of elegant simplicity, this vihuela (or guitar) is one of the few Iberian plucked instruments surviving from the sixteenth century, built in Lisbon in 1581 by Belchior Dias. It is the epitome of grace and elegance in Renaissance instrument building, but in recent times it has also been the centre of considerable controversy. The dispute concerns a seemingly innocent matter of names, the vexing question of whether this instrument should be considered a vihuela or a guitar. The matter of its identity erupted into an acrimonious argument as a result of an observation around 2006 by luthier Alexander Batov that the instrument, previously considered a guitar, had an additional eleventh hole reamed in its pegbox, thus raising the possibility that it was, in fact, a vihuela.

Resolving the quandary requires perspective. As an artefact, this instrument owes its survival to having been preserved in a museum. By their nature, museums encourage us to regard objects historically, usually looking backwards from the present into the past. Unsurprisingly, scholarly research usually proceeds in the same direction, with the same retrospective vision. An alternative approach, sometimes more illuminating, is to remove the artefact from its museum and allow it to run free in its natural habitat, like a captive animal returned to the wild. This emancipation opens up the possibility of apprehending the object of study from the opposite direction, looking from its past towards its future, often with astonishing clarity. This is the case regarding the guitar and vihuela.

Thousands of vihuelas and guitars similar to the Dias instrument were built on the Iberian peninsula during the sixteenth century (Griffiths 2009, 355; Griffiths 1999). Early in the century many appear to have been built in the old way, with a shallow body hollowed out from a single block of wood. With the importation of expensive woods from the Americas, *violeros* invented the new technique of building instruments with separate back and sides,

the method still used today for making guitars. Belchior Dias' instrument represents a further stage of development in construction style that has not previously been delineated and that appears to have been introduced in the 1570s or 1580s. Its essential feature is the arched back of fluted ribs. Other vihuelas described in inventories from the same period corroborate this new fashion. A 1580 post-mortem inventory of the belongings of Count Rodrigo Sarmiento de Villandrado, for example, lists a "vihuela de ébano alaudada," that is, an ebony "luted" vihuela (Archivo Histórico Provincial de Valladolid, Protocolos, legajo 386, fol. 587). Instruments of this type were an expensive luxury due to the intricacy of their construction. To make such a back, Dias would first have had to cut thin flat ribs of 2 mm or less, and then wet, heat and bend them around a cylindrical tube as many times as necessary. Once fluted, the ribs had to be bent gradually backwards onto a mould of the instrument's body. This requires consummate skill, and results in instruments that are not only wondrous feats of joinery, but also remarkably rigid and light, requiring no further reinforcement. The only other surviving late sixteenth-century vihuela—an anonymous instrument at the Musée de la Musique, Paris—also features a vaulted back built of fluted ribs. This new body design added bass resonance by increasing the internal air volume air in the sound box and reducing the total weight of the instrument. Even though this style of construction did not become standard practice, it persisted throughout the seventeenth and eighteenth centuries in the wire-strung Italian *chitarra battente*, and is still preserved today in a similar type of guitar used in traditional music in southern Italy.

To resolve the issue of names, let us return to fifteenth-century Spain where the bowed *vihuela* (fiddle) was being transformed into a larger multi-purpose instrument played either with a bow or plucked, usually with a quill. It was not until the last decade of the century that it was separated into distinct bowed and plucked instruments, the *vihuela de arco* and the *vihuela de mano* (*viola da mão* in Portuguese) respectively. Each now had its distinct design and stringing in function of its playing technique, for the first time allowing them to be used as solo instruments. In contrast, the fifteenth-century *guitarra* (gittern) was a small lute played throughout Europe, notably as the discant instrument of the lute-gittern duo for which players such as the Italian Pietrobono "detto il chitarrino" were renowned. In Spain, however, it seems that small figure-of-eight shaped *vihuelas de mano* usurped the role of the *guitarra*, including its name, becoming known as *guitarra* due to its function rather than its morphology (Rey and Navarro 1993, 43-44). The sixteenth-century guitarra was thus nothing but a small version of the vihuela with four courses of strings

rather than six, built by the same makers, made by the same craftsmen using the same tools, construction techniques, and processes, finished with the same varnish, and strung with the same strings. This contrasts with the more usual explanation of the difference between the vihuela and guitar that comes from retrospective approach that separates the two instruments on the basis of the style of their music, without considering constructional and other similarities. In the sixteenth century, the guitar is clearly a subset of vihuela and the dispute about names is reduced to a storm in a teacup.

In its present state, it is not possible to determine exactly whether the Belchior Dias was initially built as a four-course *guitarra* or a six-course *vihuela*, although the evidence tends to support the latter. Modifications to the original instrument are the main obstacle, especially the new sound soundboard, moustached bridge and nut that were added around 1730, allowing it to be used as a contemporary five-course guitar. For this reason, the number of holes in the pegbox is crucial evidence: five holes along each side and an extra hole in the centre of the pegbox close to the nut. This rules out the possibility of having been built as a four-course guitar, but admits the possibility that it originated as a five-course vihuela of the kind for which Miguel de Fuenllana composed ten pieces (Fuenllana 1554, fols. 90, 158-162). If the eleventh hole were to be for an additional tuning peg, then the instrument may well have been originally built as a small six-course vihuela with a single *prima* and then five double courses (Batov 2006-2017). Given its 55.4 cm string length it is likely to have been tuned in A (A–d–g–b–e'–a'), rather than the standard G tuning, a tone lower, to which Bermudo referred as the "common vihuela" (Bermudo 1555, fol. 28).

Resistance to the Dias instrument being called a vihuela is not just a matter of the number of strings, but also of size. Among the small number of surviving vihuelas, this one is by far the smallest, but should not be excluded on this ground. I have long argued the likelihood that smaller six-course vihuelas like the Dias instrument became common in the mid and late sixteenth century. Anyone who has attempted to play the music of Miguel de Fuenllana and Esteban Daza published in the 1550s and 1570s will be familiar with the technical complexities that arise from the music's dense polyphony (Fuenllana 1554; Daza 1576). This music is much better suited to small instruments with a shorter string length and narrow neck that, in combination, make it easier for the player to define the linearity of each polyphonic voice.

The Dias vihuela is one of the most beautiful guitar-shaped instruments to survive from the sixteenth century. Its exquisite elegance and balance are no accident. Renaissance instrument makers, like others of their time, understood the Pythagorean conception of music as the perceptible embodiment of the harmony of the spheres and the natural order of the world. Just as contemporary musicians tried to mirror the harmony of the universe in their compositions, makers believed that their instruments should itself also embody the same proportion and balance. While the earliest records of the guilds of *violeros* in Seville (1527), Granada (1552), Lisbon (1572), and Madrid (1578) do not go into esoteric detail, more can be derived from the ordinances promulgated in Toledo in 1617, which detail the examination of apprentices (Romanillos and Winspear 2002, Appendix). To become a master craftsman, an apprentice was required to build a vihuela, a harp, and a violin, within a span of six months, in the workshop of one of the examiners (González 2007, 175). In making the vihuela, the apprentice was not allowed to use preexisting designs, but had to work from scratch using only ruler, compass, set square, and knife—tools that strongly suggest the role of geometry in designing an instrument.

With the apprentice's workbench in mind, we can attempt to reverse-engineer the Dias vihuela, uncovering—hypothetically at least—the geometrical plan followed by the *violero* (fig. 50.1). Dias may have started by drawing a square the width of the lower bout (19.9 cm, shown in blue), then a second square above it forming a ratio of 5:6 with the width of the first. This established the proportional ratio of the upper bout to the lower bout, and the length of the body to the bouts, and also determined the position of the lower edge of the sound hole. The division of the lower square into three, both horizontally and vertically, would serve to position the bridge and would establish the diameter of the curves of the upper and lower bouts (the green circles). A larger circle (red) whose radius was equal to the length of the large initial square gave the curve for the lower end of the sound box; and a further two circles of the same diameter were drawn, centred upon the widest point of the lower bouts. These contribute to tracing the perimeter of the sound box, and are completed by a further two larger circles (magenta). This analysis shows how nearly every aspect of the design, including the length of the neck and pegbox, could all derive from the same starting point and form part of the same set of proportional relationships. Thus, not only through the technical and tonal affordances of its design, but also through the harmony of its proportions, Belchior Dias built a vihuela that would satisfy both the eye, ear, and mind of the most discerning Renaissance musician.