

Athanasius Kircher, *Musurgia universalis*, 1650

Special Collections featured item for November 2004
by Tim Eggington, former Rare Books Librarian

Kircher, Athanasius, 1602-1680. *Musurgia universalis sive ars magna consoni et dissoni in X. libros digesta*. Romae : Ex typographia Haeredum Francisci. Corbelletti, 1650.

Item held in the Henley Parish Collection , University of Reading Library Special Collections

Athanasius Kircher was a German Jesuit scholar who published around 40 works on a wide variety of subjects including Egyptology, geology, music theory, oriental studies, geology and medicine. Sometimes referred to as "the last Renaissance man" the wide range of Kircher's interests typifies an era predating the strict boundaries maintained between different disciplines today. In particular, Kircher is noted for being ahead of his time in proposing that the plague was caused by an infectious microorganism and in suggesting effective measures to prevent the spread of the disease.

In his musical encyclopedia *Musurgia Universalis* (1650) Kircher produced not only one of the most important musical texts of the 17th century, but a testament to wider philosophies indicative of how the world was understood in his day. Not a musician himself, Kircher held the essentially medieval view that the cosmos was revealed in musical ratios and that musical harmony mirrored God's harmony. In this approach Kircher drew upon scholasticism of ancients such as Pythagoras albeit in accordance with Catholic orthodoxy. In *Musurgia Universalis* Kircher's learning is conveyed with the assistance of a sophisticated utilisation of diagrams, tables, allegorical engravings and other visual material. In Reading's copy a number of the illustrations have been coloured by a former owner.





In this frontispiece Kircher presents a cosmic scheme embodying Catholic doctrine and revealing his philosophical standpoint. The triangle at the top represents the Trinity. It is surrounded by nine choirs of angels, each choir singing in four parts. Together they are singing a complex canon (or part song) in a total of 36 parts (shown in more detail later in this work). It was thought that through the art of singing in parts (known as polyphony) man had imitated cosmic harmony. Such polyphony manifested the relationships between the six planetary ratios and the six basic intervals in music. In the bottom left hand corner of the page sits Pythagoras, who according to legend discovered the secret of the mathematical basis of harmony after comparing the pitches made by hammers on a blacksmith's forge (see bottom centre). This same secret was believed to underpin the very workings of the entire Universe.

In Book I Kircher focuses upon sound and voice as found in 'nature'. This illustration shows the anatomy of the human ear. In the box at the bottom Kircher compares the inner workings of the ears of different species. Along side that of the human ear are shown those of the cow, horse, dog, leopard, cat, rat, pig, sheep and goose.

[Tomus I, opposite p. 14]





Here Kircher claims that the sloth (a type of ape) “perfectly intones the first elements of music” by which he meant the musical scale. Alongside can be seen the scale of six notes believed to be sung by this ape. For Kircher the notion that an animal could do this confirmed the naturalness of music and thus his belief that music enshrined elements central to the creation of the universe and the ‘sound of nature’ itself.

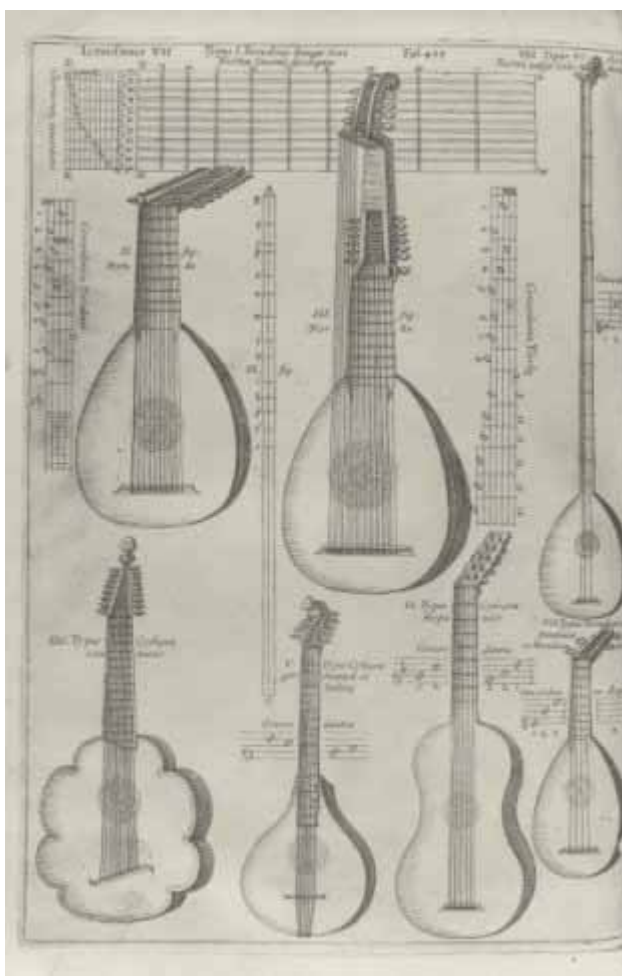
[Tomus I, top half of p. 27]

A selection of domestic birds and their song realised in musical notation. In their birdsong, birds were also seen to reveal links between music and nature. The parrot however is shown to be imitating humans. It says ‘hello’ (in Greek!). [Tomus I, opposite p. 30]

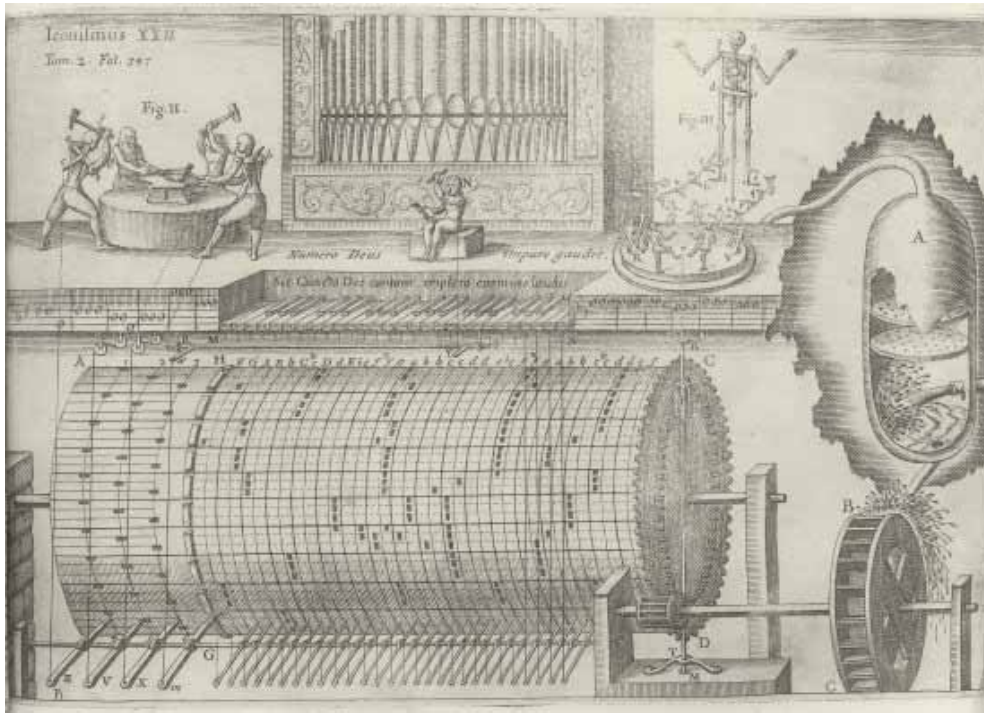


In book IV Kircher provides details of the various families of musical instruments. This is a diagram of plucked instruments, many of which are little known today. [Tomus I. opposite p. 477]

II is a 'Testudo' (tortoise), a type of twelve-string lute; III is a 'Theorba' or bass lute; IV is a 'Common Guitar' although it has 17 strings; V is a 'German or Italian Guitar'; VI is a 'Type of Spanish Guitar'; VII is a 'Combination of Tortoise and Mandora'; VIII is a 'Type of Turkish Trichord commonly known as a Colachon'.

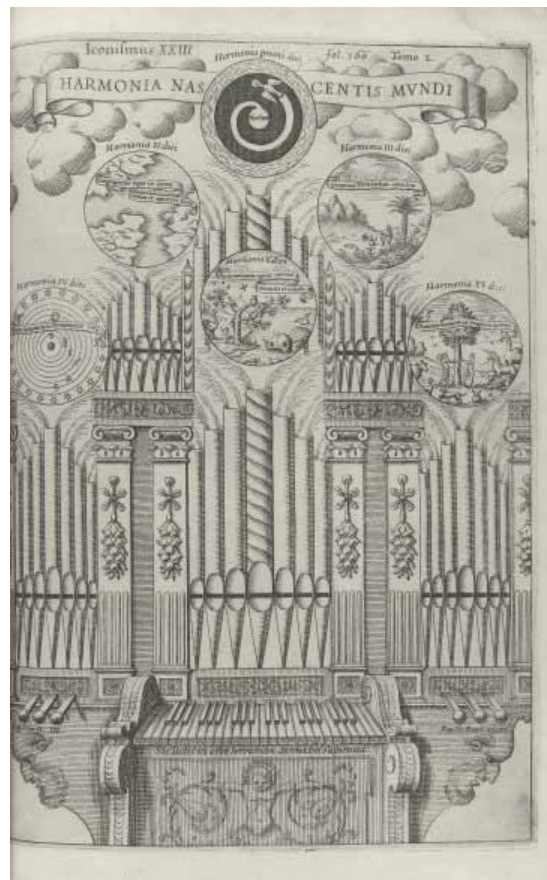


Speaking statues. Kircher alongside many others in the 17th century was fascinated by the material basis of sound. Here he shows statues which seem to talk, as if miraculously. Street noise is conveyed through walls and out of the statues' mouths by means of horns and tubing. [Tomus II. opposite p. 303]



Kircher supplied accounts of unusual musical instruments that relied upon hidden sources of power. This is his diagram of the automatic organ at the Quirinal Palace in Rome. Built in 1598 this includes a mechanical representation of the legend in which Pythagoras visited the blacksmith's forge and discovered the laws governing musical pitch. [Tomus II. opposite p. 346]

'The Harmony of the Birth of the World'. Here Kircher portrays the creation of the world in terms of an organ. Each of the six days of creation described in Genesis corresponds to a stop on the organ. The six scenes thus show the creation of the seas, earth, plants, planets, animals and man. Below its keyboard is written "Thus God's eternal wisdom plays in the sphere of the worlds". [Tomus II. opposite p. 366]



References

- 'Athanasius Kircher' [www.wordiq.com/definition/Athanasius_Kircher] [Accessed 02/11/04]
- Athanasius Kircher Image Gallery [kircher.stanford.edu/gallery/][Accessed 02/11/04]
- Athanasius Kircher's Magnetic Clock [www.stanford.edu/%7Emgorman/kircher/intro.html] [Accessed 02/11/04]
- Buelow, George J.: 'Kircher, Athanasius', Grove Music Online ed. L. Macy [Accessed 02/11/04]
- Clarke, Suzannah and Alexandre Rehding, *Music Theory and Natural Order from the Renaissance to the Early Twentieth Century*, 2001
- Gouke, Penelope, *Music, Science and Natural Magic in Seventeenth-Century England*, 1999
- Westfall, Richard S. 'Kircher, Athanasius' [galileo.rice.edu/Catalog/NewFiles/kircher.html] in *Galileo Project* [Accessed 02/11/04]