

Aldrovandi's Musical Legacy: not just Aristoxenus. Towards New Research Horizons*

Donatella Restani

Università di Bologna

donatella.restani@unibo.it

/ Abstract

Aldrovandi's focus on music as culture, as a means of understanding the world and its inhabitants, as irreplaceable nourishment for the scientist's intellectual curiosity, is a page yet to be written in the history of the relationship between music and science in the 16th and early 17th century. Focusing on the printed edition of the Latin translation of Aristoxenus' musical treatise in his library, this article outlines some further directions of a research project on Aldrovandi's musical legacy that intends to explore ancient and contemporary musical treatises, as well as the sounds and music of the natives, as narrated by travellers and explorers of the "New World".

L'interesse di Aldrovandi per la musica come cultura, come mezzo per comprendere il mondo e i suoi abitanti, come nutrimento insostituibile per la curiosità intellettuale dello scienziato, è una pagina ancora da scrivere nella storia dei rapporti tra musica e scienza, nel XVI e nel primo XVII secolo. Concentrandosi sull'edizione a stampa della traduzione latina del trattato musicale di Aristosseno presente nella sua biblioteca, questo articolo delinea alcune altre direzioni di un progetto di ricerca sull'eredità musicale di Aldrovandi che esplorerà i trattati musicali antichi e contemporanei, nonché i suoni e la musica dei nativi trasmessi nelle narrazioni dei viaggiatori ed esploratori del Nuovo Mondo.

/ Keywords

Musical legacy; History of music; History of science; Anthropology.

* This paper is the result of the work I have done reprocessing the ideas I presented at two different conferences, which were an opportunity for me to bring together two complementary parts of a single reflection. First, I would like to thank Natacha Fabbri and Ferdinando Abbri for inviting me to deliver the paper *Musica per uno scienziato: Aristosseno tra le carte di Vincenzo Galilei*, at the international conference *Vincenzo Galilei. The Renaissance Dialogue between Music and Science* (Florence, Villa I Tatti, 6–7 October 2022). It was in that context that I began my research project on music books in scientists' libraries, which would later allow me to accept the invitation of my colleagues Fiammetta Sabba and Luca Ciancabilla to deliver the paper *La musica nei libri di Ulisse Aldrovandi: primi spunti per una ricerca* at the conference *Spigolature bibliografiche aldrovandiane. Per amor di Bibliografia, e per amore d'Ulisse* (University of Bologna, Department of Cultural Heritage, 5 April 2023). I would also like to thank Martina Caroli, of the Bologna University Library, for her prompt care in finding the manuscripts and prints. Last but not least, I thank Annamaria Biavasco, with whose invaluable and skilful help this text was translated into English.

In the 16th century, the musical thought of Antiquity had an important role in the construction of a European cultural identity. D.P. Walker,¹ Claude V. Palisca,² and F. Alberto Gallo³ were the first to study this topic as pioneers, followed by other eminent musicologists, like Thomas J. Mathiesen,⁴ and now by scholars involved in the study of music and the politics of memory.⁵ The above-mentioned studies are fundamental for any further research on the relationship between scientific and musical thought before the 17th century “Scientific Revolution”. Nowadays, “standing on the shoulders of giants” we can systematically explore the influences of musical thought on naturalists, physicians, mathematicians and astronomers – in a modern word, scientists.

In this history of Ancient musical legacy among scientists there is a chapter still to be written: ancient Greek music in Ulisse Aldrovandi's library. One of Aldrovandi's 3900 printed books was the first Latin translation of Aristoxenus' *Elementa Harmonica*, edited by Antonius Gogava and published by Vincent Vaugris in Venice (1562).⁶ This book contains a handwritten note of ownership: *Ulixis Aldrovandi et amicorum* (Fig. 1). This example of circulation of Aristoxenus' *Elementa Harmonica* in Latin emphasizes the impact of Latin translations of Greek musical treatises in the transmission of the musical knowledge of Antiquity. The presence of the book in Aldrovandi's library can lead to two paths of research.

The first path implies an exhaustive and systematic research for Greek musical treatises translated into Latin in the libraries of physicians, astronomers, naturalists, mathematicians, architects and other men (and women) of science. 15th and 16th century scientists generally knew Latin because it was a staple in their educational system.⁷ A new specific study on the

¹ Daniel Pickering Walker, *Studies in musical science in the late Renaissance* (London: Warburg, 1978).

² Claude Vincent Palisca, *Humanism in Italian Renaissance Musical Thought* (New Haven/London: Yale University Press, 1985).

³ Franco Alberto Gallo, “Le traduzioni dal greco per Franchino Gaffurio”, *Acta Musicologica* 35 (1963): 172–174; Ferdinand Edward Cranz and Paul Oskar Kristeller (ed.), “Musici scriptores graeci”, in *Catalogus translationum et commentariorum: Mediaeval and Renaissance Latin Translations and Commentaries*, III (Washington: The Catholic University of America Press, 1976), 64–73; Ferdinand Edward Cranz and Paul Oskar Kristeller (ed.), “La trattatistica musicale”, in *Storia della cultura veneta*, 3.3, *Dal primo Quattrocento al Concilio di Trento* (Vicenza: Neri Pozza, 1981), 297–314; Ferdinand Edward Cranz and Paul Oskar Kristeller (ed.), “Die Kenntnis der griechischen Theoretikerquellen in der italienische Renaissance”, in *Italienische Musiktheorie im 16. und 17. Jahrhundert, Geschichte der Musiktheorie* 7 (Darmstadt: Wissenschaftliche Buchgesellschaft, 1989), 7–38.

⁴ Thomas J. Mathiesen, *Apollo's lyre: Greek music and music theory in antiquity and the Middle Ages* (Lincoln: University of Nebraska Press, 1999).

⁵ Christine Guillebaud, Sibylle Emerit and Julien Jugand (ed.), *Orchestrer le passé. Singing the past* (Nanterre: Presses Universitaires de Paris Nanterre, 2023).

⁶ Bologna, University Library (BUB), A.IV.Q.VIII.59.

⁷ For the Veneto context, see: Letterio Mauro, “La musica nei commenti ai Problemi: Pietro d'Abano e Évrart de Conty”, in *La musica nel pensiero medievale*, a cura di Letterio Mauro (Ravenna: Longo, 2001), 31–69; Id., “Filosofia e musica all'Università di Padova e dintorni nel secolo XV”, *Musica e Storia* 3 (1994): 189–226; Id., “La ‘musica del polso’ in alcuni trattati del Quattrocento”, in *Anima e corpo nella cultura medievale*, a cura di Carla Casagrande e Silvana Vecchio (Firenze: SISMEL-Edizioni del Galluzzo, 1999), 235–257.

geographical distribution of printed Latin translations of Greek music treatises should be added to the census of *Ancient Greek Music Theory* manuscripts by Mathiesen.⁸ This path of research should involve library catalogues and book inventories, and should relate volumes to their owners – and readers – wherever possible, through notes of ownership, stamps and marginal scholia. In particular, it would be interesting to locate copies of Aristoxenus translated by Gogava, to help us to identify the milieu where Gogava's printed Latin translations were read in the 16th century, with special focus to the forty copies in Italy.

The second path of research regards those readers who could not read Greek and could access ideas contained in Greek musical treatises only thanks to the Latin translations and later vulgarizations. It was the case of musicians, as evidenced by studies on Glareanus' library⁹ and Gioseffo Zarlino's books.¹⁰ Among the few books attributed to Zarlino's library there was one copy of the 1543 edition of *De revolutionibus orbium coelestium* by Nicolaus Copernicus, in the miscellaneous volume: Venice, Biblioteca Nazionale Marciana, 132 D. Copernicus' edition contained some handwritten notes by Zarlino, which were read by Owen Gingerich in the Eighties.¹¹ Unfortunately, that copy of Copernicus' treatise has been lost in the mean-

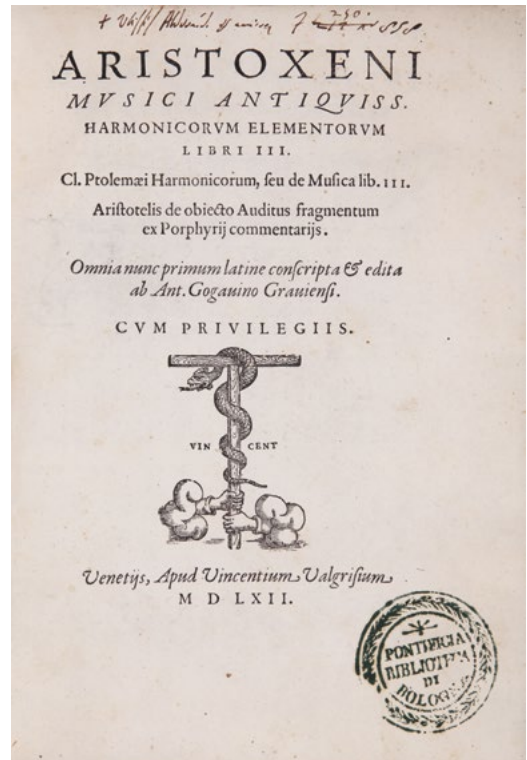


Fig. 1. Aristoxeni *Harmonicorum elementorum libri 3*, Cl. Ptolemæi *Harmonicorum, seu De musica libri 3*, Aristotelis *De obiecto auditus fragmentum ex Porphyrij commentarijs*, omnia nunc primum Latine conscripta & edita ab Ant. Gogauino Grauiensi (Venezia: Vincenzo Valgrisi, 1562), frontispiece, available at BUB, A.IV.Q.VIII.59. All images courtesy of Alma Mater Studiorum Università di Bologna – Biblioteca Universitaria di Bologna.

⁸ Thomas J. Mathiesen (ed.), *Ancient Greek Music Theory*, Répertoire International des Sources Musicales B XI (München: Henle, 1988).

⁹ Iain Fenlon and Inge Mai Groote (ed.), *Heinrich Glareanus's Books. The Intellectual World of a Sixteenth-Century Musical Humanist* (Cambridge: Cambridge University Press, 2013).

¹⁰ Orsola Braides, "Tracce di una biblioteca", in *Musico perfetto: Gioseffo Zarlino, 1517–1590 – La teoria musicale a stampa nel Cinquecento*, a cura di Luisa Zanoncelli (Venezia: Biblioteca Marciana – Fondazione Ugo e Olga Levi, 2017), 67–72.

¹¹ Owen Gingerich, *An Annotated Census of Copernicus' De revolutionibus (Nuremberg, 1543 and Basel, 1566)* (Leiden: Brill, 2002): 133 where Gingerich reported: "1.116 Venice 1. Biblioteca Nazionale Marciana.

time. In addition to *De revolutionibus orbium coelestium* by Copernicus, printed in Nürnberg (1543) by Petreius, the miscellaneous volume included: *On Arithmetic* by Boethius, printed in Paris (1521) by Colines; and the *De abditis rerum causis* by Jean Fernel, printed in Paris (1548) by Wechsel. Fernel was a professor of medicine in Paris and his work would become a seminal text in the curriculum of medical schools. Fernel's aim was to blend medical theory and philosophy, reinterpreting Plato, Aristotle and Galenus with a Christian approach.¹² The presence of these works among Zarlino's books testimonies the musician's variety of interests, ranging from philosophy to medicine.

To put in context the presence of Aristoxenus' *Elementa harmonica* in Aldrovandi's library, we should retrace the itineraries of the transmission, study and reception of Aristoxenus' *Elementa harmonica*, from Constantinople to Venice and to Bologna, from the end of the 15th to the end of the 16th century.

1. From Constantinople to Venice

Bessarion received the news that Constantinople was in the hands of the Ottomans in early July 1453, when he was in Bologna.¹³ He had been in Italy for fifteen years, during which he had become well known among Italian scholars. Being a foreigner himself, he helped foreign scholars in various fields, including literature, mathematics, and astronomy. They met regularly to discuss issues related to astronomy, astrology, and music, thanks to the Latin translations of the main ancient Greek treatises, from Ptolemy on. Johannes Müller, called Regiomontanus (1436–1476), was one of them. He had studied with Georg Peurbach (1423–1461), whom the Cardinal Bessarion had met in Wien. In his *Oratio introductoria in omnes scientias mathematicas*, a lecture held in Padua, where he taught in 1463–64, Regiomontanus mentioned music as a mathematical discipline and expressed the unrealised card. Nicolaus Cusanus's wish to translate Ptolemy's *Harmonica*.¹⁴ Regiomontanus and his mentor Peurbach had already translated into Latin Ptolemy's *Mathematiké Syntaxis*, with the title *Almagestum* – an Arabic word, indicating that this age requires a global

1543 132.0.31. Vellum over heavy cardboard, front cover and flyleaves detached, spine missing, traces of two ties, XVI. 267 x 197-mm (full width). Bound between Boethius, *Arithmetica* (Paris, S. Colines, 1521) and Johannes Fernelius, *De abditis rerum causis* (Paris, 1548). Provenance: 1. (fl) Anno Christi nativitatis 1556 die Septima mensis Decembris Venetiis L 1 0; (tp) P. Iosephii Zarlirii. Giuseppe Zarlino (tl590), choirmaster at the San Marco cathedral, distinguished music theoretician, possessor of a large library and author of some small tracts on calendrical problems. The library went to a nephew and was dispersed over the years, with many volumes passing to the Dominican Convent of SS. Giovanni and Paolo". E-book published 20 May 2022.

¹² Hiro Hirai, *Medical Humanism and Natural Philosophy: Renaissance Debates on Matter, Life and the Soul* (Leiden: Brill, 2011), 46–79. E-book.

¹³ Lotte Labowsky, s.v. "Bessarione", in *Dizionario Biografico degli Italiani*, 9 (1967).

¹⁴ Mauro, "Filosofia e Musica", 207. Furthermore see: James Steven Byrne, "A Humanist History of Mathematics? Regiomontanus's Padua Oration in Context", *Journal of the History of Ideas* 67, no. 1 (2006): 41–61.

perspective – and an *Epithomy*, published in 1496.¹⁵ Ptolemy's *Tetrabiblos* was translated later as *Quadripartitum*: the first two books were translated by a German scholar, Joachim Camerarius senior, and published in 1535; the last two books were translated in 1548 by Antonius Gogava, coming from Liège and professor of medicine in Padua and later in Madrid. Camerarius' and Gogava's translations show that to translate a treatise of astronomy from Greek into Latin, in the 16th century, scholars were supposed to have the same skills which were necessary for the translation of a music theory treatise. In some cases, the skills acquired in translating astronomical treatises became useful for the later translation of music theory treatises. This regarded, for example, a musical diagram in Camerarius' edition of Macrobius' *Commentarii in Somnium Scipionis*, published in Basel in 1535, the same year as Ptolemy's *Quadripartitum*.¹⁶

Fifteen years after translating the third and fourth books of Ptolemy's *Quadripartitum*, Gogava translated the last Greek music theory treatise still to be translated: Aristoxenus' *Elementa Harmonica*. As a physician, Gogava was part of a long tradition of physicians and philosophers who from the early 14th century translated books and passages about Greek musical theory. This tradition began in Veneto, an area which had always been very close to the Byzantine culture. Pietro d'Abano and Giorgio Valla were two of the most outstanding examples. The former, professor of medicine in Padua, had written *Expositio problematum Aristoteli* and the *Conciliator*, discussing musical pulse quoting Greek authors and Galen in particular.¹⁷ The latter, Giorgio Valla, was the first translator of Cleonides' *Harmonicum introductorium* published in 1497 and of pseudo-Euclides' *Sectio canonis*, printed in Venice in 1498.¹⁸ Four years before, in 1494, Gianfrancesco Burana, physician in Venice and professor in Padua, had translated Aristides Quintilianus, Anonyma Bellermanniana and Bryennius for Franchino Gaffurio, who intended to quote them in his last treatise *De harmonia musicorum instrumentorum*. Gaffurio had commissioned another translation, Ptolemy's *Harmonica*, to Nicolò Leonicensi, who completed it in 1499. Leonicensi, born in Vicenza, graduated in Padua, professor of medicine in Ferrara, was a pioneer in the translation of ancient medical texts from Greek and Arabic

¹⁵ Ornella Pompeo Faracovi, "Con Tolomeo e con Copernico. L'astrologia nella prima età moderna", *Bruniana & Campanelliana* 18, no. 2 (2012): 669.

¹⁶ Donatella Restani, "Ricerche sulle immagini musicali nelle prime edizioni del *Commento al Sogno di Scipione* di Macrobio", in *Polidoro. Studi offerti ad Antonio Carile*, a cura di Giorgio Vespignani (Spoleto: Fondazione "Centro italiano di studi sull'alto Medioevo"), 919–928, plates I–IV.

¹⁷ Gallo, *Die Kenntnis*, 13–18.

¹⁸ On Valla's edition of the *Harmonicum introductorium* of Cleonides, cfr. International Short Title Catalogue <https://data.cerl.org/istc/ic00742000>, accessed May 08, 2024; on this collection of translations, published in 1498, cfr. International Short Title Catalogue <https://data.cerl.org/istc/in00044000>, accessed May 08, 2024. On Valla's programme of translations, see: Amedeo A. Raschieri, "Cicero in the Encyclopaedia of Giorgio Valla", *Ciceroniana online* 4 no. 2 (2020): 317–335, in particular 320.

and collaborated to the *editio princeps* of Aristotle's works, in 1495–98, and of Galen's works in 1525.¹⁹

Such strong translating effort was part of the result of the Scuola di Rialto, which had been active in Venice since 15th century. This “university” of the Venetian Republic was one of the first to include ancient Greek in its curriculum and Marcus Musurus, Janus Lascaris' disciple, was one of the professors.²⁰ One of the most impressive heritage of that School's faculty was the translation into Latin of Aristotle's *Mechanica* by Vettor Fausto, who made this seminal work accessible to the West.²¹ Philosophical and scientific subjects were crucial at the Rialto School as they were at the University of Padua, where they had already been most important for a century. They included music theory too, as a quadrivial discipline.

Back to Bessarion and his library,²² donated to the Venetian Republic's Senate, the 1468 inventory records three treatises of Greek musical theory and the 1474 inventory records the huge manuscript (now Venice, Biblioteca Nazionale Marciana, ms. Z. gr. 332 /=711) which included the first Aristoxenus musical treatise ever arrived in Italy. Among the three copies of Aristoxenus' *Elementa harmonica* commissioned by the cardinal, the one by Iohannes Rhosus, a Venetian from Crete, was identified in the ms. Venetus Marcianus graecus 322,²³ which contains the cardinal Bessarion's *ex libris*. Based on the missing passages, Rhosus' copy was identified by Rosetta da Rios in 1954²⁴ as the manuscript most likely used by Gogava for his Latin translation. Gogava's Latin translation was printed in Venice in 1562 by Vincent Vaugris (Charly, 1490 ca. – post 1572) in the same volume as Ptolemy's *Harmonica*, in three books, accompanied by Porphyry's *Commentary* and the Aristotelian fragment *De obiecto auditus*.²⁵

2. From Venice to Bologna

Being the last Greek musical treatise to be translated into Latin, as Palisca pointed out,²⁶ Aristoxenus was read, studied and disseminated later. But how did Aldrovandi meet Aristoxenus and why did he decided to buy it?

We know that Aldrovandi had in his library some other musical treatises. The short list

¹⁹ Hirai, *Medical Humanism*, 19–45.

²⁰ See Venice State Archive (ASVe), Senato Terra, reg. 17, fol. 118r.

²¹ Federica Ciccolella, Luigi Silvano, *Teachers, Students, and Schools of Greek in the Renaissance* (Leiden: Brill, 2017).

²² Gallo, *Die Kenntnis*, 15–16.

²³ Mathiesen (ed.), *Ancient Greek Music Theory*, no. 264: 693–699.

²⁴ Rosetta Da Rios, “Prolegomena”, in *Aristoxeni Elementa Harmonica* (Romae: typis Publicae officinae polygraphicae 1954).

²⁵ *Aristoxeni musici antiquiss. Harmonicorum elementorum libri 3. Cl Ptolemaei Harmonicorum, seu De musica lib. 3. Aristotelis De obiecto auditus fragmentum ex Porphyrij commentarijs Omnia nunc primum Latine conscripta & edita ab. Ant. Gogauino Grauiensi* (Venetijs: apud Vincentium Valgrisium, 1562).

²⁶ Claude Vincent Palisca, “Aristoxenus Redeemed in the Renaissance”, *Revista de Musicologia* 16 (1993): 1283–1293.

includes, in printing order: *De musica in De fugiendis et expetendis rebus* by Giorgio Valla (posthumous, 1501);²⁷ *De rythmis vulgaribus* by Antonio da Tempo (1509);²⁸ the first edition of *Istitutioni harmoniche* (1558) by Gioseffo Zarlino²⁹ and the edition of his *opera omnia* (1589), including *Istitutioni harmoniche*,³⁰ *Dimostrazioni harmoniche* and *Sopplimenti musicali*.³¹ These books were all printed in Venice, the capital of printing in the 16th century,³² where Aldrovandi bought a large amount of his books. Among them only Zarlino's treatises have Aldrovandi's handwritten notes, in particular his 1558 edition of *Istitutioni harmoniche* and *Tavole* in the *opera omnia*. Did Aldrovandi discover Aristoxenus because it was quoted in Zarlino's treatises? We do not know. What we do know is that he personally knew the printer of Aristoxenus: Vincent Vaugris.

Born in Lyon, Vaugris was active as a printer and bookseller in Venice between 1539 and 1573, with the name Vincenzo Valgrisi. He was found to be very close to Aldrovandi, who frequented the printer's shop in Bologna, managed by Giovanni Alessi, which sported Erasmus' head as its sign. From 1571 to 1572, Aldrovandi ordered 17 just-printed books as shown by a list kept in his library.³³ Aldrovandi kept a correspondence with Valgrisi and hosted him and his brother Guglielmo in his home in Bologna.³⁴ Most likely Aldrovandi bought Aristoxenus' Latin translation because of his friendship with its printer. It has been known that Aldrovandi read mostly Greek and Latin classics, as evidenced by thousands of pages of quotations, summaries and comments from Aristotle, Hippocrates, Galen and Plinius, in his miscellaneous manuscripts.³⁵ However, the fact that he bought music treatises and read at least some of them is just a recent discovery.³⁶ As a scientist, his background regarded mainly disciplines as biology, medicine, botanics, zoology, and geology – the main subjects of his

²⁷ Giorgio Valla, *De expetendis et fugiendis rebus opus* (Venezia: Aldo Manuzio, 1501), available at BUB, A.V. B.XI. 3/1.

²⁸ Antonio Da Tempo, *De ritimis vulgaribus* (Venezia: Simone da Lovere, 1509), available at BUB, Raro B. 45/1.

²⁹ Gioseffo Zarlino, *Le istitutioni harmoniche* (Venezia: Pietro da Fino, 1558), available at BUB, A.IV. Q.I.26/3.

³⁰ Gioseffo Zarlino, *De tutte l'opere* (Venezia: Francesco de' Franceschi, 1589), available at BUB, A.IV. Q.I.25/1.1.

³¹ BUB, A.IV. Q.I.25/2.1.

³² Iain Fenlon, *Music, print and culture in early sixteenth-century Italy* (London: The British Library, 1995).

³³ BUB, Aldrovandi, ms. 136, v. V, c. 119r/v, in Rita De Tata, "Il commercio libraio a Bologna tra '500 e '600: i librai di Ulisse Aldrovandi", *Bibliothecae.it* 6 (2017): 48, note 19.

³⁴ BUB, Aldrovandi, ms. 136, v. XXIV, c. 28r, see: De Tata, "Il commercio libraio a Bologna", 48–49, note 21.

³⁵ See: Luigi Frati, *Catalogo dei manoscritti di Ulisse Aldrovandi* (Bologna: Zanichelli, 1907); Giovanni Carrada (a cura di), *L'altro Rinascimento: Ulisse Aldrovandi e le meraviglie del mondo* (Bologna: Bologna University Press, 2022).

³⁶ Donatella Restani, "Musica per un naturalista: prime indagini sui libri di Ulisse Aldrovandi (1522–1605)", in *Tientalora. Studi per Francesco Luisi in occasione del suo 80° compleanno, II* (Roma: IBIMUS – Istituto di Bibliografia Musicale, 2024), in print.

library – but at the time music was still part of the scientific quadrivium and therefore it is not surprising to find it among the wide range of Aldrovandi's interests.³⁷ Aldrovandi's copy did not seem to have been read, but the very fact that it was in his library is an indication of a scientist's curiosity for music.

3. Towards New Research Horizons

Music was part in the education of any 16th century scholar, and Aldrovandi was no exception. Among the texts, which were copied, annotated, commented, summarised and the literature *centos*, coming from his readings and collected in his miscellaneous works, there are short essays such as *De tuba et tibia*, and *Musica maxime apta conviviiis*.³⁸ There are also ten folios, handwritten by a copyist, which contain his *De Musica*³⁹ (Fig. 2), preceded and followed by similar short treatises on arts and crafts. Music was part of his readings of the classical Greek and Latin authors on philosophy, medicine, history and so on: such as Hippocrates, Aristotle, Galen, Plinius and Plutarch. The future steps of my research project on Aldrovandi's musical legacy will include the transcription, and possible Italian translation, of his ancient musical texts, together with a study of the ancient sources. Furthermore, the study of his handwritten marginalia to Zarlino's books, or to the musical parts of Plinius' editions would give us an important insight on Aldrovandi's musical knowledge.

Along these readings about the past, to widen his geographical and anthropological knowledge,⁴⁰ Aldrovandi read about the contemporary discoveries by travellers such as *Navigazioni e viaggi* by Giovan Battista Ramusio (Venice, 1550–1559).⁴¹ Aldrovandi's deep interest for the recently discovered peoples, animals, plants, and minerals, is evident not only in his handwritten essays, notes and marginalia, but also in his letters to the Gran Dukes of Tuscany, to whom he addressed his request of patronage to print his works.⁴² It would be interesting to examine the handwritten marginalia by Aldrovandi in Ramusio's collection, containing tales of sound events by Francisco Álvarez and Leo Africanus in Africa; Ludovico de Varthema, Giovanni Maria Angioiello, Giosafat Barbaro and Ambrogio Contarini in Asia; Olaus the Great, Paolo Giovio, Sigismund of Herberstein and Peter Martyr d'Anghiera

³⁷ See Sandra Tugnoli Pattaro, *Metodo e sistema delle scienze nel pensiero di Ulisse Aldrovandi* (Bologna: CLUEB, 1981), 488.

³⁸ BUB, Aldrovandi, ms. 21, vol. IV, cc. 438–439.

³⁹ BUB, Aldrovandi, ms. 124, cc. 358–372.

⁴⁰ Francesco Citti, "Conservazione e valorizzazione", in *L'altro Rinascimento: Ulisse Aldrovandi e le meraviglie del mondo*, a cura di Giovanni Carrada (Bologna: Bologna University Press, 2022), 15–16.

⁴¹ Giovanni Battista Ramusio, *Delle navigazioni et viaggi* (Firenze: Giunta, 1550–1559), available at BUB, A.IV. P.I.14/1–3.

⁴² See in particular: Alessandro Tosi (a cura di), *Ulisse Aldrovandi e la Toscana: carteggio e testimonianze documentarie* (Firenze: Olschki, 1989).

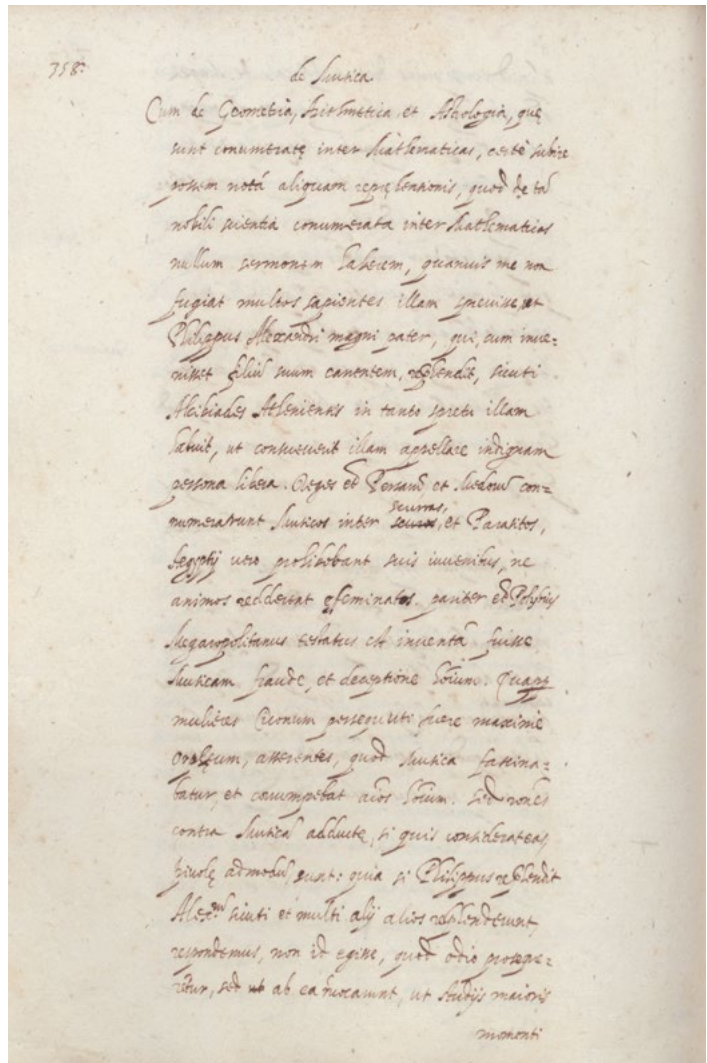


Fig. 2. BUB, Aldrovandi, ms. 124, c. 358.

in Europe; Hernan Cortes, Francisco Vázquez de Coronado, Francisco De Xerez, Nuno De Guzman and Jacques Cartier in the West Indies and Canadian coasts.⁴³ Furthermore, it would be interesting to study from a musicological point of view those manuscripts, such as ms. 136, vol. XXX and XXXI,⁴⁴ which have been mainly analysed from an anthropological point of view. Particular attention should be paid to the sounds related to native peoples and to their

⁴³ See Franco Alberto Gallo, "Premessa", in *Per una storia dei popoli senza note*, a cura di Paola Dessì (Bologna: CLUEB, 2010), 7–10. For the travellers' musical narratives, *Per una storia dei popoli senza note*, 39–42, 50–67, 105–111, 118–121, 148–153, 161–164, 282–294, 304–308, 315–322, 329s., 389–391.

⁴⁴ See Raffaella Stasi, *L'interesse di Ulisse Aldrovandi verso la Mesoamerica: collezioni e fonti* (tesi di laurea, Corso di laurea in Storia moderna, Facoltà di Lettere e Filosofia, Università di Bologna, a.a. 1997/1998).



Fig. 3. Theodor de Bry (ed.), Hans Staden, *Historia Americae* (Francoforte sul Meno: Johann Wechel, 1592), available at BUB A. M.YY.VII. 15/1/4, tav. XXIV.

environment, especially birds. Aldrovandi, as a naturalist, was very interested in birds' voices.

Another aspect of this research will include the study of images and illustrations contained in Aldrovandi's books of travels. The print which represents a musical scene of a native ritual ceremony in *Historia Americae* by Hans Staden (1594)⁴⁵ is a significant example (Fig. 3).

From this research in progress an unexpected scenario has emerged. I found no documents connecting Aldrovandi to his contemporary musicians, publishers of music, or even to the music he might have listened to. However, I found a lot of music in his wide-ranging readings, documenting Aldrovandi's interest in music as culture, as a way to understand the world and its inhabitants, as an irreplaceable nourishment for the scientist's intellectual curiosity. Aldrovandi looked for answers in Greek and Latin classics, as well as in ancient and contemporary musical treatises and in travel narratives. Greek music theory was part of Aldrovandi's quadrivial education, and this is true for most of his fellow physicians. However, Aldrovandi compounded his general education with the *curiositas* of the scholar of *historia naturalis*,⁴⁶ in the footsteps of Pliny the Elder.⁴⁷ In fact he was mainly interested in direct observation, and considered every aspect of the past and present world: mineral, vegetable, animal and human, including sounds and music.

⁴⁵ BUB, A. M.YY.VII. 15/1/4. For the print, see Carrada, *L'altro Rinascimento*, 72.

⁴⁶ Krzysztof Pomian, "Aldrovandi e la curiosità. Da Bayle a Buffon", *Aldrovandiana. Historical Studies in Natural History* 2, no. 1 (2023): 80–88.

⁴⁷ Elisa Romano, "Didicit homo naturam provocare: il naturale e l'artificiale negli ultimi libri della *Naturalis historia* di Plinio il Vecchio", *Aldrovandiana. Historical Studies in Natural History* 2, no. 2 (2023): 37–45.

A systematic research project on Aldrovandi's prints and manuscripts could include music in the 'other Renaissance', emphasizing the role of music as culture in the 16th century, beyond the mere practical and listening aspects and focussing on the presence of music in the books and libraries of scientists. Collecting musical treatises, copying passages from them, and investigating the role of music in the native culture and society in the 'new' travellers' narratives represent a driving force that could direct research towards yet unexplored horizons. We might discover, for example, how wide the web of cultural relationships connecting philosophers of nature, physicians, mathematicians, astronomers, and theoretical musicians was, at least until the 17th century.

We know that these cultural relationships among scientists were not sporadic or exceptional, and that ideas on science included ideas on music. The relationship between music and science was based on translations of ancient texts as well as on the new works at the time when the history of science could not be told as if it were exclusively European. In 1543, when Nicolaus Copernicus published *De revolutionibus orbium coelestium*, contacts between Europe and Asia were as frequent as never before, and this allowed Copernicus to access mathematical procedures contained in Arabic and Persian texts, many of which were not introduced into Europe until centuries later. Recent studies show⁴⁸ that, at those same years, the traditional Islamic science was contaminated with ideas taken from Christian and Jewish thinkers; in the courts of West Africa, Arabic manuscripts were studied; in Peking, astronomers read Chinese classics and scientific texts in Latin; in India, Hindu, Muslim and Christian mathematicians collaborated to compile astronomical tables. In these global exchanges of ideas and knowledge, the extent of Aldrovandi's involvement in new musical ideas and evidence from 'other' new worlds, from the point of view of the naturalist's cultural interests and of the influences on his scientific research, is still to be explored.

⁴⁸ James Poskett, *Horizons. A Global History of Science* (London: Penguin, 2002), 5.