

## **Apollo's Lyre Greek Music and Music Theory in Antiquity and the Middle Ages**

Ancient Greek music and music theory has fascinated scholars for centuries not only because of its intrinsic interest as a part of ancient Greek culture but also because the Greeks' grand concept of music has continued to stimulate musical imaginations to the present day. Unlike earlier treatments of the subject, *Apollo's Lyre* is aimed principally at the reader interested in the musical typologies, the musical instruments, and especially the historical development of music theory and its transmission through the Middle Ages.

The basic method and scope of the study are set out in a preliminary chapter, followed by two chapters concentrating on the role of music in Greek society, musical typology, organology, and performance practice. The next chapters are devoted to the music theory itself, as it developed in three stages: in the treatises of Aristoxenus and the *Sectio canonis*; during the period of revival in the second century C.E.; and in late antiquity. Each theorist and treatise is considered separately but always within the context of the emerging traditions. The theory provides a remarkably complete and coherent system for explaining and analyzing musical phenomena, and a great deal of its conceptual framework, as well as much of its terminology, was borrowed and adapted by medieval Latin, Byzantine, and Arabic music theorists, a legacy reviewed in the final chapter. Transcriptions and analyses of some of the more complete pieces of Greek music preserved on papyrus or stone, or in manuscript, are integrated with a consideration of the musico-poetic types themselves. The book concludes with a comprehensive bibliography for the field, updating and expanding the author's earlier *Bibliography of Sources for the Study of Ancient Greek Music*.

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# APOLLO'S LYRE



GREEK MUSIC AND MUSIC THEORY  
IN ANTIQUITY AND THE MIDDLE AGES

Thomas J. Mathiesen

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Uxori carissimae sacrum

περίφρον Πηνελόπεια

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περίεσσι γυναικῶν  
εἶδος τε μέγεθος τε ἰδὲ φρένας ἔνδον εἴσας.

Odyssey 18.245–249

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## Preface

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Ancient Greek music and music theory has fascinated scholars for centuries, as the vast quantity of literature published since the fifteenth century readily attests. But why should this be so? Unlike the other art forms of ancient Greece, the actual sounds of ancient Greek music are forever lost. All that remains are a few notated compositions—most of which are many centuries younger than the Greece of Plato and Aristotle, Sophocles and Euripides—and a very small number of archaeological fragments of musical instruments. Nevertheless, none of the other ancient Greek art forms was held in such high esteem by the ancients themselves, whose painters and sculptors never tired of showing the Greeks making music, and none could claim such exceptional powers as were commonly attributed to music by the poets, playwrights, and philosophers, in whose work music and musical matters are employed for literary purposes, described, or treated as a subject of technical or scientific inquiry. Surely, then, the task of recovering this lost art and all that pertained to it was worth the effort, as it seemed to early generations of scholars, and there can be little question that they were motivated by the goal of discovering a kind of musical philosopher's stone. As more and more material was published and studied, later generations began to discover in it useful models for the development of their own theories of music, aesthetics, musical forms, musical psychology, and so on. Thus, the study of ancient Greek music and music theory developed not only because of its intrinsic interest as a part of ancient Greek culture but also because the Greeks' grand concept of music has continued to stimulate musical imaginations to the present day.

A number of monographs on ancient Greek music have been published over the years, including several since 1990. The reader might therefore reasonably wonder why another is needed. In

response, I can only say that the present volume reflects the method and perspective of a musicologist, aimed principally at the reader interested in the musical typologies, the musical instruments, and especially the historical development of music theory and its transmission through the Middle Ages. By contrast, the treatments by Martin West, Warren Anderson, and most recently John G. Landels were written from the perspective of the classicist; their interests, assumptions, aims, concentration, critical perspective, and conclusions are fundamentally different from mine. While I do not agree with all their conclusions, I certainly recommend their works to the interested reader. No single discipline or method can claim sole authority in this field.

*Apollo's Lyre* has had a long and somewhat fitful gestation. I first outlined it in 1979 and sent the outline in 1981 to Dr. Willis Regier, then Associate Editor at the University of Nebraska Press, marking the beginning of a productive association with him of more than fourteen years' duration as he subsequently became Editor-in-Chief and then Director of the Press. Later in 1981, the Press accepted the book for publication, and I projected its completion for sometime in 1986, by which time I had expected to see two prior commitments—a translation of the treatise of Aristides Quintilianus and my *catalogue raisonné* of Greek manuscripts for the Répertoire International des Sources Musicales (RISM)—through to publication. Such was not to be. Aristides Quintilianus was published in 1983, but as I worked on the catalogue, it grew ever larger as I found more and more manuscripts, each of which had to be separately described. Eventually though, the work was completed, and the catalogue was published in 1988.

Meanwhile, Dr. Regier and I decided to establish at the University of Nebraska Press a new series of critical texts with facing-page translations. This new series, Greek and Latin Music Theory, was launched under my editorial direction in 1982, with the first two volumes published in 1984. Over the next ten years, ten volumes were published. Much of the 1980s was devoted to all these projects, but along the way, I continued to gather material for *Apollo's Lyre*, and it gradually began to take shape.

In 1990, I was awarded a Guggenheim Fellowship to work on *Apollo's Lyre*. For the first time, I was able to devote nearly my full attention to the book. The first three chapters and most of the fourth were completed during this year, and I anticipated complet-

ing the rest of the book within the following year. Once again, however, unanticipated projects intervened.

In late 1989 and early 1990, a group of scholars began discussing the possibility of forming a full-text database of the entire corpus of Latin music theory, ranging from the *De musica* of Augustine through the sixteenth century, discussions that eventually led to the establishment of the *Thesaurus Musicarum Latinarum* (TML), with the project center under my direction at Indiana University and associated centers at Louisiana State University, Ohio State University, Princeton University, the University of Colorado–Boulder, and the University of Nebraska–Lincoln. During the first couple of years, the TML grew rather slowly, but in 1992 and 1994, the project received two generous grants from the National Endowment for the Humanities, and by the end of 1998, the TML included nearly five million words of text accompanied by more than four thousand graphics, all fully searchable and available to scholars free of charge worldwide on the Internet. This project, together with work on the new editions of the *New Grove Dictionary of Music and Musicians* and *Strunk's Source Readings in Music History*, had to take precedence, it seemed to me, and *Apollo's Lyre* accordingly languished for a time with only four of its strings.

Over the last two and a half years, with other commitments largely fulfilled, I was at last able to turn most of my attention to this book. The first four chapters were completely revised and three more were added: *Apollo's Lyre* now has its full complement of seven strings, in which I hope readers will find a harmonious presentation of the endlessly fascinating subject of ancient Greek music and music theory.

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Throughout the long gestation of this book, the University of Nebraska Press has remained patient and supportive. It is therefore a special pleasure to acknowledge in the first place its former and long-time Director, Dr. Willis Regier (now Director of the University of Illinois Press), without whose vision and enthusiasm over the years, neither this book nor the many others with which I have been involved at the Press would ever have seen the light of day. My long association with him has been a great privilege and pleasure.

I should also like to take this opportunity to acknowledge the many who have been unfailingly generous with their advice, assistance, correction, and encouragement, especially my friends and colleagues at Indiana University, Professor Malcolm H. Brown, Professor George J. Buelow, Dr. John W. Clower, and Dr. Andreas Giger; and at other universities, Dr. André Barbera (St. John's University), Professor Calvin Bower (University of Notre Dame), Professor Edward N. O'Neil (University of Southern California), Professor Claude V. Palisca (Yale University), and Professor Jon Solomon (University of Arizona).

I remain very grateful to the John Simon Guggenheim Memorial Foundation for my Fellowship in 1990, during which the first part of this book was written.

For advice and assistance in acquiring the illustrations for this book, I am very much indebted to two further friends and colleagues: Professor Steven Bule and Professor Martha Maas. In addition, I am most grateful to the following institutions and individuals for granting me permission to reproduce the various illustrations of works of art and artifacts that appear on the following pages: Brussels, Musées Royaux d'Art et d'Histoire (Mrs. Viviane Xhignesse); Copenhagen, National Museum, Department of Classical and Near Eastern Antiquities (Mrs. Bodil Bundgaard Rasmussen); Essen, Ruhrländmuseum (Dr. Charlotte Trümpler); Frankfurt am Main, Städtische Galerie Liebieghaus (Brigitte Gaebe); London, British Museum; Munich, Staatliche Antikensammlungen und Glyptothek (Dr. F. W. Hamdorf); Naples, Soprintendenza Archeologica delle Province di Napoli e Caserta (Stefano de Caro); New York, Metropolitan Museum of Art; New York, Art Resource (Diana Reeve); Paris, Bibliothèque Nationale; Paris, Musée du Louvre, Département des Antiquités Grecques, Etrusques et Romaines (Brigitte Tailliez); Schwerin, Staatliches Museum, Kunstsammlungen, Schlösser und Gärten (Dr. Karin Möller); Taranto, Soprintendenza Archeologica della Puglia-Taranto (Dr. Giuseppe Andreassi); and Würzburg, Martin von Wagner Museum (Dr. Irma Wehgartner).

Finally, I could never adequately acknowledge or express the enormous debt I owe to my wife, Penelope, for her assistance in countless ways (including the preparation of yet another index to one of my books), her selfless patience and ability to dispel every worry and discouragement, and her invariably sensible advice.

She has been and always will be my inspiration, and this book is lovingly dedicated to her.

It is a pleasure to share with all these individuals and institutions whatever praise may be due this book. I reserve to myself, of course, whatever errors and inadequacies may be perceived here, which I nevertheless hope, following the model of Aristides Quintilianus, will stimulate others to improve upon my efforts and "lay down complete in one treatment the things that pertain to music."

Thomas J. Mathiesen  
April, 1999

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# I

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## Introduction

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Vitruvius, one of the most learned men of his day in architecture, town planning, and the various associated sciences, was also a student of ancient Greek music theory—especially the tradition known as “harmonics.” This was a trying subject, even for a polymath of the first century B.C.E., as his remarkable treatise *De architectura* reveals: “Harmonics is an obscure and difficult musical subject, particularly for those who do not know Greek letters.”<sup>1</sup> Vitruvius was writing about a music theory still current in his own time, and there would be others after him who would write extended treatments, until the music and its theory were largely forgotten in the fifth and sixth centuries of the present era. All of these writers recognized the “difficulty” of this subject, even though it was not remote from their own time.

When the Renaissance humanists began to rediscover the forgotten cultural treasures of antiquity,<sup>2</sup> they were intrigued by the legendary powers and quality of the music of ancient Greece, but they were frustrated by the special difficulties that presented themselves in recapturing the music of an earlier time. Sculpture, architecture, and literature all exist in tangible and more or less permanent form. But music, as a sounding medium, is evanescent. It can be described, it can be made the subject of theory, but it remains elusive. The humanists were also hampered by an

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<sup>1</sup>“Harmonica autem est musica litteratura obscura et difficilis, maxime quidem quibus graecae litterae non sunt notae.” *De architectura* 5.4.1. The treatise was written sometime in the first century B.C.E. Unless otherwise noted, all translations are mine.

<sup>2</sup>Forgotten at least in the West. Byzantine and Arabic scholars, however, had continued to study this material in an almost unbroken line. See chapter 7.

absence of notated pieces of music, incomplete or imperfect manuscripts of texts they wished to read, and only a limited knowledge of other valuable pieces of evidence, iconographic and archaeological. Still, they worked at their studies with great intensity, experiencing some illumination but also considerable frustration with this "obscure and difficult musical subject." One of the most learned of these musically inclined humanists, Girolamo Mei, wrote to his mentor Piero Vettori, on 21 February 1562: "I had to turn completely around more than twice in trying to find out the truth for myself. I swear to you that I have passed more than ten nights without sleeping because of these trifles."<sup>3</sup>

In the seventeenth and eighteenth centuries, more and more of the theoretical and literary sources that speak of ancient Greek music began to appear and be widely circulated in published form. Perhaps the most important of these publications was Marcus Meibom's *Antiquae musicae auctores septem*, an edition of seven Greek treatises with parallel translations in Latin, a book of some 800 pages published in 1652 when Meibom was only twenty-two years old.<sup>4</sup> Meibom's edition complemented Athanasius Kircher's famous *Musurgia universalis*, published in 1650, and both of these influenced John Wallis's 1682 and 1699 editions of two treatises Meibom had not included in his collection: the *Harmonica* of

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<sup>3</sup> " ... ho creduto più di due volte aver a girare nel voler rinvenirne il vero, e vi giuro che delle notte più di dieci ho passate senza sonno intorno a queste taccole." The letter is preserved in London, British Library, Additional 10268, ff. 224r-225r. See Donatella Restani, *L'itinerario di Girolamo Mei dalla «poetica» alla musica, con un' appendice di testi* (Firenze: Olschki, 1990), 178-81; and Claude V. Palisca, *Girolamo Mei, Letters on Ancient and Modern Music to Vincenzo Galilei and Giovanni Bardi*, *Musicological Studies and Documents*, no. 3 (n.p.: American Institute of Musicology, 1960), 180-82, where the transcription differs in a few details. This quotation and that of Vitruvius were drawn to my attention by Claude V. Palisca, "Introductory Notes on the Historiography of the Greek Modes," *Journal of Musicology* 3 (1984): 221.

<sup>4</sup> *Antiquae musicae auctores septem, Graece et Latine*, Marcus Meibomius restituit ac notis explicavit, 2 vols. (Amsterdam: Elzevir, 1652). The collection includes the *Sectio canonis* (attributed to Euclid) and the treatises of Aristoxenus, Cleonides (attributed to Euclid), Nicomachus, Alypius, Gaudentius, Bacchius, and Aristides Quintilianus, as well as Book IX of Martianus Capella's *De nuptiis Philologiae et Mercurii*. A reprint is available as volume 51 in the series *Monuments of Music and Music Literature in Facsimile*, second series (New York: Broude Bros., 1977).