

Music History Notes:

Ancient Greek Music



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1 INTRODUCTION

I CONSIDERATIONS

A. ASPECTS

- 1 Poetry and Dance formed an entity with music
 - Verse and music formed a unified whole
- 2 Harmonic theory depended on the culturally dominant instruments of Greek Antiquity – the Lyre & Aulos
- 3 Don't know how the Ancient Greek language sounded
 - Cannot reproduce the original character of the Ancient Greek language
- 4 Music is not understood as an Art in our sense
 - Extends directly into realm of sensual and instinctive
 - Understood as an educational force as intellectual education
 - As an ethical force determining 'ethos'
- 5 Sources of Ancient Greek music as notated are limited (expanded in recent decades)
- 6 Considerable amount of treatises on theory are available

B. POINTS OF DISCUSSION

- 1 Greek music represents the 1st scientific and intellectual stage of our (European) musical history
- 2 Greek music was influenced by the music and instruments of Egypt
- 3 The musical theories of the Middle Ages came through Boethius and his studies of Greek theorists
- 4 The music of one period is not 'like' music of another
- 5 The music of all parts of the world are not the same

C. PROBLEMS

- 1 There is a lack of a comprehensive catalog of manuscripts
 - Whether published texts provide a reliable edition of extant manuscripts
 - Amplified by the influence of 'Greek theory' found in musical thought of the Middle Ages and the Renaissance
- 2 Identifying what constitutes a work of Greek music theory
 - What or whom did Renaissance writers base their explanation or interpretation of texts

- 3 Printed texts of a Greek music theorists by later scholars reflect the traditions of scholarship of the time when published (the editorial characteristics of the respective historical period)
 - There was an allowed modification in some historical periods
 - The printed text is only as good as the original material allows
 - : Editors of the 17th & 18th Centuries were at a distinct disadvantage in knowing or finding what original manuscripts existed
 - : 19th & 20th Century editors in a better position with appearance of public collections and advent of microfilm
 - : More attention has been paid to Latin texts than Greek
 - : Editors still suffer from inadequate manuscript catalogs, transmission of texts over time, and inadequate texts
- 4 Music historians were hampered by ignorance of Oriental music (music east of Greece)
- 5 Problems with aligning facts in chronological order
 - Ancient authors drew knowledge and opinions sources antedating their own epochs
 - Mingling them with contemporaneous ideas of their own time
- 6 Mixed terminology caused by confusion of times, men, countries, and styles
- 7 Two systems of notation
 - One instrumental and a later one developed for vocal
 - The actual pitches are unknown
- 8 Medieval period misunderstood the system of the Greek modes and transmitted this misunderstanding to posterity

II ANCIENT AUTHORS – THE LITERATURE (6TH CENTURY BC – 6TH CENTURY AD)

- 1 6th – 5th Century BC
 - Pythagoras (570 – 495 BC)
 - : Credited with the discovery that the intervals between harmonious musical notes always have whole number ratios
 - : His discovery of the overtone series and analyses of the acoustics and ratios involved in music have served as the foundation of harmony in western-hemisphere music
- 2 5th Century BC
 - Damon
 - : Greek musicologist
 - : Considered the musical expert in rhythmic education by Plato in the “Republic”
 - : Classified and described specific modes especially the ‘loose Lydian’
 - : Also focused on social and political effects of Music (ethos)

3 4th Century BC

- Plato (429 – 347 BC)
 - : Believed that music has an influence on the soul. But this influence is strictly dichotomous: it is either good or bad.
 - : Based on Pythagorean number theory, music was governed by mathematics, just like the heavenly spheres.
 - : Believes in the importance and purity of the traditional Greek music styles, and dismisses the excited, undisciplined, showy music of his time.
- Aristotle (384 – 322 BC)
 - : Felt that music had very powerful effects on one's mind and body, had the ability to arise certain passions, and shape one's character and therefore sound be handled responsibility to ensure music's power was not being used to corrupt society.
 - : Was a student of Plato and made large contributions to logic, mathematics, physics, ethics, politics, medicine, dance and theater
- Arisboxenus (354 BC)
 - : The only work of his that has come down to us is the three books of the Elements of Harmony, an incomplete musical treatise.
 - : Disagreed with earlier Pythagorean musical theory in several respects, building on their work with ideas of his own.
 - : Held that the notes of the scale are to be judged, not as earlier Pythagoreans had believed, by mathematical ratio, but by the ear.
- Archytas (435/410 BC – 360/350BC)
 - : Archytas provided a rigorous proof that the basic musical intervals cannot be divided in half
 - : Archytas was also the first ancient Greek theorist to provide ratios for all 3 genera of tetrachords – enharmonic, chromatic, diatonic
- Aristophanes (446 BC – 386 BC)
 - : Provides a picture of musical teaching in Athens c. 423 BC
 - : His work "Clouds" describes learning song by 'heart'

4 3rd Century BC

- Euclid (325 – 265 BC)
 - : Working with Archytas's theory in his The Division of the Canon - He elaborated the acoustics with reference to the frequency of vibrations (or movements).

5 2nd Century BC

- Cleonides
 - : Author of a Greek treatise on music theory titled Eisagōgē harmonikē (Introduction to Harmonics)
 - : His treatise is the clearest account of the technical aspects of Aristoxenus' musical theory

- Eratosthenes (276 – 194 BC)
 - : Dealt with the mathematical theory of music
 - : Calculation of the tuning degrees of the tetrachords was reproduced by Ptolemy

6 1st Century BC

- Philodemus (110 BC – 35 BC)
 - : Author of treatise “On Music”
 - : Considered music irrational and not able to influence the ‘soul’ in choice or avoidance of action
- Didymos (63 BC – 10 AD)
 - : Combined elements of earlier theoretical approaches with an appreciation of the aspect of performance
 - : Among his works was “On the Difference between the Aristoxenians and the Pythagoreans”
- Lucretius (95 – 55 BC)
 - : Writes in Poetic form on the origins of music in Book V of On the Nature of Things (De Rerum Natura)
 - : Writes on the miseries caused by erroneous beliefs concerning the nature of the gods. Metals. Iron. War. Weaving. Agriculture. Music. Seasons. Art.
- Cicero (106 BC – 43 BC)
 - : References teaching of singing, dance, and playing musical instruments in Bk III of ‘De Oratore and Varro
 - : Ranked music as one of the liberal arts
 - : Studied in Greek schools with some music training included
- Horace (65 BC – 8 BC)
 - : The leading Roman lyric poet during reign of Augustus
 - : Poems were intended to be performed with musical accompaniment
 - : Uses musical language to describe his poetry
- Vitruvius (80/70 BC – 15 BC)
 - : Proposed using music theory in practical architectural design in “De Architectura”, Section 1
 - : Discussed the importance of a liberal arts education that includes study of music theory

7 1st Century AD

- Pliny the Elder (23/24 AD – 79 AD)
 - : Author of “Naturalis Historia” a natural history encyclopedia
 - : Provided information as to construction material for musical instruments
- Plutarch (46 AD – 119 AD) – Ps. Plutarch
 - : Ps. Plutarch is Pseudo Plutarch and name given to some ancient Greek works BUT no longer attributed to him
 - : His “De Musica” (separate from Quintilianus’ work) is now thought to be compilation assembled c. 2nd Among his works was On the Difference between the Aristoxenians and the Pythagoreans Century AD

- Aristides Quintilianus
 - : Writings to explain and reproduce the system of Ancient Greek notation
 - : Authored a separate “De Musica”

8 2nd Century AD

- Claudius Ptolemaeus of Alexandria (Ptolemy) (100 AD – 170 AD)
 - : Author of “Harmonikon” (Harmonics) on the music theory and the mathematics behind musical scales
 - : Argues for basing musical intervals on mathematical ratios - in contrast to the followers of Aristoxenus
 - : Proposed empirical observation of musical intervals and mathematical ratios in contrast to the overly theoretical approach of the Pythagoreans
 - : Harmonikon exerted a strong influence during the Renaissance and the seventeenth century
- Theon of Smyrna (70 AD – 135 AD)
 - : Authored “On Mathematics Useful for the Understanding of Plato” as a reference work of ideas of his time
 - : The 2nd Section (on Music) covers the music of numbers, instrumental music, and music of the spheres
 - : Music of Numbers covers the treatment of temperament and harmony using ratios, proportions, and means
 - : Instrumental music covers intervals and consonances
 - : Music of the Cosmos considered the most important giving specific pitches in chromatic scale to each planet
- Gaudentius (c. 2nd Century AD)
 - : Writings to explain and reproduce the system of Ancient Greek notation
- Bacchius the Elder
 - : Defined music as the knowledge of melody
 - : Follower of Aristoxenus
 - : Authored “Introduction to the Art of Music”

9 3rd Century AD

- Porphyry (234 AD – 305 AD)
 - : Authored “Commentary on the Harmonics of Ptolemy”
 - : For musicologists it is widely recognized as a treasury of quotations from earlier treatises

10 4th Century AD

- Alypius of Alexandria (c. 360 AD)
 - : Writings to explain and reproduce the system of Ancient Greek notation

11 5th Century AD

- Macrobius (370 AD – 431 AD)
 - : His ‘Somnium Scipionis’ covered music of the spheres, Pythagoras’s discovery of musical consonance, and an important source for the medieval understanding of Pythagorean musical mathematics

- Proclus (412 AD – 485 AD)
 - : used a theological notion of harmony, which is designed to reveal the essence, intelligible relations, and causality of the soul by taking its harmonic structure as a starting point
- Martianus Capella (c. 410/420 AD)
 - : Avoids giving details of contemporary musical practice and concentrates on music as a mathematical phenomenon
 - : Author of 'De nuptiis Philologiae et Mercurii' a commentary on liberal arts in the form of an allegory
 - : In Book 9 concerns stories of the ethical powers of music, with a discussion that is a description of the Greek musical system

12 6th Century AD

- Boethius (477 AD – 524 AD)
 - : Authored 'De Institutione Musica' containing
 - Theory of sound
 - Distinction between interval and consonance
 - Basic elements of Greek modal theory with notational charts illustrating the systems basic principles
 - : Music (according to Boethius) influences reason and, therefore it is desirable to understand and control its fundamental elements
 - : Believed music is related to ethical action as well as pure reason

2 BASIC ELEMENTS OF GREEK SYSTEM

I RHYTHM

A. A QUANTITATIVE RHYTHM WITH ONLY TWO QUANTITIES – SHORT & LONG

- 1 A governing and fixed measurement of time is missing
 - Originates through a simple addition and is loosely put together
 - Dictated by words with rhythm of the music based on rhythm of the words
 - Elements of the rhythm were a number of short and characteristic phases
 - : Know something of Greek Rhythm
 - : Far from a detailed interpretation
 - Bar line either non-existent or slighter in an unstressed language

B. TEMPO

- 1 Unavoidably varied
 - Temperament of the performer
 - Mood of the piece
 - Performance circumstances
 - : Not as vital as in our contemporary music

II SYSTEM OF HARMONIA & ETHOS

A. INTRODUCTION

- 1 Can be a troublesome study
 - Studies on the subject provide technical remarks about the music (modes, scales, pitches, etc.)
 - They do not attempt to systematize the ethical characteristics
- 2 A possible system for the analysis of 'ethos'
 - Relies heavily on the 'De Musica' of Aristides Quintilianus
 - : His exact date is unknown but sometime after 300 AD
 - : Book 1 deals with the theory of music
 - : Book 2 discusses the importance of music in the young and in the moral life of the individual
 - : Book 3 deals with the arithmetic of music exploring the analogies between numbers in music and numbers in the physical world

- It is not a technical work but rather a work of philosophy
 - : Through the 'Harmonia' treatises' he attempts to provide a comprehensible model
 - For understanding physical and metaphysical realities
 - For attaining though that understanding a higher knowledge (through Philosophy)
 - : Orientation is the Platonic notion of mimesis
 - Memetic is a representation or imitation of 'something' especially in art
 - Mimesis in aesthetic or artistic theory refers to the attempt to imitate or reproduce reality
 - An artistic portrayal and interpretation of the world neither a literary device nor a technique but rather a way of 'thinking' about a work of art

B. HARMONIA (HARMONIKÉ / HARMONIAI)

1 Needs to understood on two levels

- Concerned with music as an analogue for higher philosophical truths
 - : As manifesting basic proportions, orders, and characters
 - : As a mimetic of a higher universal
 - : May create a like harmonia in the soul
- In the technical sense as essentially a system one which is a unification of things which on a lower level appear unrelated

Memetic:
representing
or imitating
something
especially in
art

2 Can signify the enharmonic genus of the tetra chord, the seven octave species, and style of music associated with one of the ethnic types.

3 Aristides Quintilianus and Platonic notions of memesis

- In 'De Musica'
 - : Attempts to provide an understanding of physical and metaphysical realities
 - : Attaining through that understanding a higher knowledge through philosophy
- Musical mimesis is not a simple imitation of things
 - : Rather an imitation of life itself
 - : Capable of raising the soul once again to the harmonia of the universe

Memsis:
term used
in
philosophy
and literary
criticism.
Describes
the process
of imitation
or mimicry
through
which
artists
portray and
interpret the
world. It is
not a
literary
device or
technique
but rather a
way of
thinking
about art.

C. MUSICAL SYSTEM OF GREEKS

1 A controversial Point

- spoken language did not have a stress accent but rather a Pitch accent
- Not a harmony in current musical sense
- None of extant melodies (as of 1929) show signs of simultaneous accompaniment

2 Polyphony

- In contemporary sense unknown
 - : Did use sounding combinations
 - : Are some music examples but how it sounded is lost to us
- No vocal polyphony
- Worked in simple, straightforward melody types
 - : Prevent the music from obscuring words
 - : Conservative side with simple melody serving the poetry
 - : Emotional side of a more elaborate melody
- Were aware of both consonant and dissonant effects
 - : Clear from some passages consonant pitches were used by accompanying instruments

3 Sýstéma

- An abstract set of notes defined within a skeleton of fixed intervals
- Here the note material of any musical piece can be matched
- This developed into the 'Greater Perfect System'
 - : A move to organize the chaotic multiplicity of modes into a consistent system
 - : Comprised two octaves
 - : With middle note (mésé) as the center

4 Tónai

- The placement of scale patterns at different pitches and closely related to octave species
 - : In Greater Perfect System (which allowed transposition) the names of the Tónai correspond to the names of the octave species in that system.
- Regulate the pitch distances between single instantiations of a scale
- When an entire set of keys becomes regarded as 'fixed' a transposition to a different pitch range becomes possible
- Developed independently of the 'Greater Perfect System'

D. ETHOS

1 From writings of Plato, Aristotle, Philodemus, Sextus Empiricus (and others)

- The ancient Greeks did perceive the 'ethos' conveyed by theatrical and musical works
- They were concerned with the subject of effect on individuals and society

2 Pronouncements of the philosophers about moral values and music

- There is no unified 'Greek Ethos Theory'
 - : Many different and sometimes sharply opposed views
 - : Plato attributes Ethos to the Tonai/Harmoniai/Modes
 - : Quintilianus to various parameters according to general male & female categories
 - Was the first Greek theorist to state Ethos does not only reside in individual parameters but also in the musical piece as a whole
 - How all parts of music (pitch, scale, tonos, rhythmic pattern, etc.) are like the order of the universe
- An attribute not merely of persons but also musical phenomenon
- Considered vehicles for conveying ethical attitudes but not having any kind of moral nature in themselves
 - : A belief that music can convey, foster, or even generate ethical states
 - : From 5th Century BC saw first surviving theoretical statements concerning the ethical power of music

3 The Ethical view of music put forward by Damon (5th Century BC)

- Adapted by Plato (with Socrates as a 'spokesman')
 - : Commended singleness, simplicity, and universality
 - : Technical matters regarding music seldom came under discussion
 - : Musical experience 'lodge fast in the soul'
 - The kind of music one becomes accustomed to makes a great deal of difference in the moral result
 - Result that music in education received close attention
- Later a point of controversy as to real effect of music on moral values made up of shifting patterns of beliefs concerning musical 'ethos'

4 Aristotle (paragraph in 'Politics')

- Accepted division of melodies according to 'ethos'
- With each class having its special 'harmonia'
- Should not judge value from preconceived standpoints but rather with view to Education, Purification, Intellectual enjoyment, Relaxation, and Recreation

Harmonia & Ethos in ancient Greek Music are linked and overarch the whole body of music
--

3 MUSIC IN ANCIENT GREEK LIFE

I PERSPECTIVES

A. AN INTEGRAL ROLE IN SOCIETY

1 From the archaic period to the hymns of the early Christian Church

- Played an integral role in civic, religious, and educational life
- Always a popular subject
- : Moralizing discourse about music and its effects
 - In philosophical works of Plato and Aristotle (and others)
 - Ethical theories of music (first advanced in 5th Cent. BC) that music could affect the character of the listener or performer
 - These theories were later challenged by the Epicureans such as Philodemus
- : Attempts to analyze the structures underlying music and musical sound had begun by 5th Cent. BC
 - Harmonic analysis by manipulation of mathematical ratios (in the Pythagorean tradition)
 - Harmonic analysis rejecting ratios with tones and fractions of tones (Aristoxenus)
 - Attempts to integrate both the two (Gaudentius & Aristides)
- : Rhythmics from Aristoxenus, Bacchius, Aristides Quintilianus, and St. Augustine
- : Physical acoustics by Archytas theorizing about the causes of sound (early 4th Cent. BC)
- : Development of musical notation by mid 3rd Cent. BC

No
musicological
writings
survive
independently
from 5th Cent.
BC

2 The language itself was a product of pitch-accents integral to the meaning of the words

- Aristoxenus of Tarentum spoke of the 'songful melody' in everyday speech
- To distort the pitch-accent was a 'grammatical error'
- Full meaning of Greek authors depended on the semantic nature of accompanying pitch-accents

3 Formulated laws (theory) for music as part of their ongoing formulation for laws governing reality

4 Important part of public gatherings, private dinner parties, ceremonies, worship, theaters, sports competitions, schools, and the military

B. VENUES

1 Great religious festivals

- The Panathenia and Great Dionysia festivals
- Expanded in 6th Century BC with music much in use in the expanded forms

2 Competitive musical contests of all kinds involving instrumental soloists, solo and choral singers, and dancers

3 Part of Athenian youth education was to learn the lyre

- 4 A version of the trumpet was used to give commands on the battlefield (though not considered a truly musical instrument)
- 5 In private life (home) there was considerable music making
- 6 Percussion instruments were used to keep oarsmen 'in time' on Greek warships.
- 7 Sung word was both commonly heard and as important as the spoken word not only in drama but also in poetic forms

II GENERALITIES

A. OVERVIEW

1 Expansion was scientific, philosophical, and technical

- It was the immediate source of early medieval music
- Our knowledge of Greek music is 'one sided' being drawn from works 'about' music rather than examples
- Music was joined more intimately with poetry and with general culture than is now common in our era.

There are now more musical examples available than stated by this author Waldo Selden Pratt in his 1907 text

2 Historical Periods

- Mythical (or Heroic Age)
 - : Prior to about 675 BC
 - : A time of the minstrel or bard
- Classical Period
 - : 5th Century BC to about 338 BC
 - : Practice of 'music-poetry' was developed at Athens
- Alexandrian Period
 - : About 325 BC to Christian Era
 - : Originality gained place to scientific criticism or mere imitation
- Roman Period
 - : From Augustus to the Fall of Rome
 - : All arts of Greece were adopted by the culture of Rome

B. PLACE IN SOCIETY

1 Education

- Common education was expected to give familiarity with musical styles and to preserve and disseminate within society

"The History of Ancient Poets and Musicians" by Glaucus of Rhegium (c. 410BC) mentions only musicians older than 500 BC – relied on oral transmission but still heard and discussed in his time

- It was an oral transmission of Music (attested to by Aristoxenus)
 - : Aristophanes (468 BC – 386 BC) provides a picture of musical teaching in Athens (ca. 423 BC) in 'Clouds' which describes learning song by 'heart'
 - : Notation could not reveal the subtleties
 - In the time of Aristoxenus (375 BC – 335 BC) there were still aulos players working in the 'archaic' style
 - This archaic style could not be revealed by notation
 - : This hold of oral transmission kept memory of the old pentatonic scales alive till the end of the 2nd Century BC
- Even with development of notation musical education also remained oral till imperial times

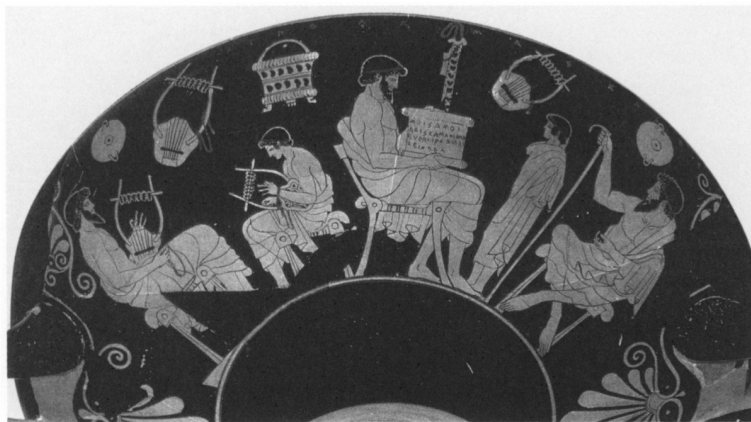


PLATE 1. School-Vase of Douris, front side, 490-480 B.C.
Staatliche Museen zu Berlin, Antikensammlung, inv. nr. 2285.
Photo Johannes Laurentius. Brinkmann 2008, pl. 98.

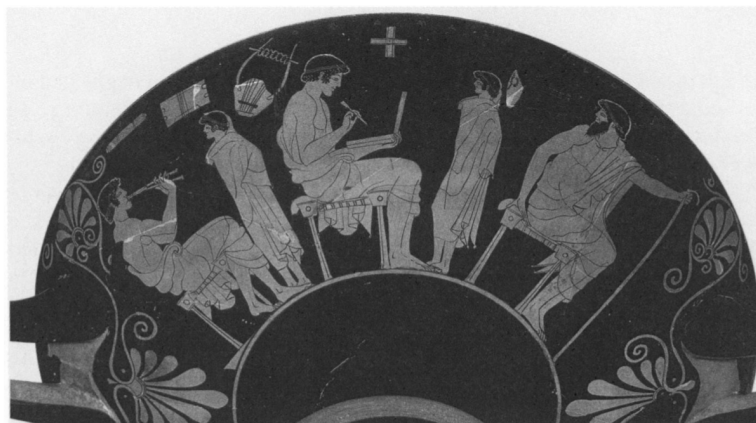


PLATE 2. School-Vase of Douris, back side, 490-480 B.C.
Staatliche Museen zu Berlin, Antikensammlung, inv. nr. 2285.
Photo Johannes Laurentius. Brinkmann 2008, pl. 99.

School Vase

2 The Music

- Musical activity in antiquity is not comparable to modern composition or performance
- Choral lyric had the greatest prestige
 - : Music was most closely connected to the recitation of verse
- BUT oldest form was solo aulos playing
 - : Origins associated with Asia
 - : BUT in early 6th Century BC was established at the Pythian Games
 - : Solo Cithara playing came later (Kithara)
- Conservative vs. Emotional 'battle' through Greek musical history
 - : Conservative side with simple melody serving poetry and associated with the lyre
 - : Emotional side with a more elaborate type of music associated with the flute
 - : Plato in 'Laws' indicated that 'modern' music disobeyed ancient laws
 - Reacting to a musical style that had become mainstream in the 5th Century BC
 - Plato
 - + Assigned a specific melodic form to each kind of song
 - + Prohibited hybrid or mixed-genre music
 - The new music was evident in the styles of Timotheus, Euripides, and Agathon
- In later 5th Century BC seems to be a movement for the freeing of music from poetry (Phrynis c. 446 BC & Timotheus 446 BC – 357 BC)
 - : Composers of this time were accused of 'spoiling' the 'old dignified' simplicity
 - : Corresponding revolution in Rhythm
 - : Appears melody gained in importance at expense of rhythm
 - : Melody was Diatonic, Chromatic, and Enharmonic

C. ACOUSTICAL THEORY

1 Accepted to have begun with Pythagoras of Samos (6th Century BC)

- Educated by long residences in Egypt
- Laid the foundation of musical acoustics as a science
- Followers tended to regulate all musical procedures by mathematics
- Applied to music was an innovation of Aristoxenus (4th Century BC)
- The application of acoustics and music sparked a centuries long tradition with the main tenets persisting to this day

2 Background Sources

- Pythagoras of Samos (6th Century BC)
 - : Most influential mathematician of antiquity
 - : Revealed a simple truth about musical sound – pitch from a plucked string depends upon the length of the string
 - : Made music a matter for serious philosophical reflection

- Ptoemais of Cyrene (3rd/2nd Century BC)
 - : Authored 'Pythagorean Doctrine of the Elements of Music'
 - : One of several women associated with Pythagorianism
 - Commented on the music – theoretical debate
 - Concerned with the roles of reason and sensory experience
- Athenaes of Naucratis (160 – 230 AD)
 - : An authority on musical lore of Antiquity
 - : Authored 'Deipnosophistai' which the remains of Book IV & XIV contain information on music and musical practices from earlier sources
 - : Sources include Pindar (522 – 446 BC), Bacchylides (520 – 450 BC), Damon (5th Century BC), Hesiod (700 BC), Aristotle (384 -322 BC), and Aristoxenus of Tarentum (375 BC)
- Boethius (477 – 524 AD)
 - : Main intermediary between Classical Antiquity and following centuries
 - : Translated (into Latin) Nicomachus of Gerasa c. (60 – c. 120 AD) – an important ancient mathematician and music theorist who provided an account of Pythagoras
 - : In De Institutione Musica, (most of which survives) is a part of an exploration of the four mathematical disciplines of antiquity: arithmetic, music, geometry and astronomy: the quadrivium – the fourfold path to knowing the “essences” unaffected by material substance.

III INFLUENCE OF EGYPT

1 Introduction

- Greece had contact with many other cultures from the Mediterranean area
 - : Organology, theory, and musical thought
 - : Context of these contacts is essential to understanding the culture and music of the Greeks
- While many differences between Egyptian and Grecian mentalities there is common ground
- Pythagoras 'hints' at receiving his knowledge from Chaldea & Egypt
- Herodotus maintained an idea of Egypt as a musical reference for Greece
 - : Showed an origin for some Greek musical customs
 - : Noted Egyptian aulos playing, the Krotala use in singing and dancing for deities predated the Greek practice
- Plato references Egyptian musical practice
 - : Considered the regulation of music in his ideal state
 - Would be very important for education and respect for law
 - Followed the example of Egypt where the temple fixed traditional melodies for the training of the people (as created by the god Isis)
- Egyptian influence in Greek musical instruments

Organology is musical instrument construction and tuning

Chaldea was the land bordering the head of the Persian Gulf between the Arabian desert and the Euphrates delta – existing between the late 10th or early 9th and mid-6th centuries BC, till assimilated into the indigenous population of Babylonia.

- The character of the music
 - : The joyful character of both musics
 - Mesopotamian character was dominated by sense of sadness and intellectuality
 - Though some indication that Mesopotamia did have some origin and influence

2 The Greeks in Egypt

- Greeks had trading connections with Egypt in the Mycenaean period and renewed in Archaic times
 - : Sold wine and bought grain
 - : Imported Egyptian Art – with accompanying influence on the development of Greek Art
- Greek mercenaries were employed by Egyptian kings
- Traders at Naukratis settled permanently in Egypt
 - : A Greek colony in Egypt; it was a symbiotic nexus for the interchange of Greek and Egyptian art and culture.
- Egyptian influence on Greek music was profound and prolonged
 - : Herodotus on Greek settlers in Egypt
 - Egyptian King Psammetichus (664 BC – 610 BC) gave dwelling sites to his employed Greek mercenaries
 - Had entrusted Egyptian boys to learn the Greek language
 - Provided the city of Naukratis as a Greek settlement in Egypt
 - : Continued in Hellenistic and Roman Egypt
 - Music appears to have little importance in Rome till after the conquest of Greece in 2nd Century BC
 - Rome contributed little but provide a locus for Greek music in the Roman capital (had the effect that knowledge of 'Greek styles' spread widely into the West)

3 Concept of Music

- Musical traditions of both are conceived from singing
 - : Egypt references to some types of singing
 - : Should view works from Egyptian and Greek poetry as a group of songs *not only* poetry
 - : Greek concept is 'profoundly' related to singing and lyrical poetry
 - Sappho (630 BC – 570 BC) known for her lyric poetry
 - Shows similarities with Egyptian Love Poetry with a possible Asiatic origin
 - Her brother (Charaxus) visited and traded with the Greek colony of Naukratis in Egypt
 - + The only permanent Greek colony in Egypt
 - + A point of interchange of Greek and Egyptian art and culture
- Association of Dance with Music
 - : Dance in Egypt was always used to express different emotions and attitudes
 - Grief in confronting death
 - Happiness before Gods and Kings
 - : Dance in Greece was an essential part of music

Dance in Mesopotamia seems more absent – perhaps due to the sad & intellectual dimensions of Mesopotamian music

4 ETHOS

I DEFINED

A. AN ATTRIBUTE OF MUSICAL PHENOMENON

- 1 Considered as a vehicle for conveying ethical attitudes but not having any kind of moral nature in themselves
 - Music retained the ability to soothe and stir the soul
 - : In Classical stage of Hellenic civilization, it was understood to affect the moral qualities of the nation
 - : The Harmonia of music may create a like 'ethos' (Harmonia) in the soul
 - History of moralizing discourse about music and its effects
 - : In Greek comedy
 - : Philosophical works of Plato, and Aristotle
 - : Challenges by Epicureans (Philodemus)
- 2 Now appears that this belief in 'ethos' was widely held throughout the near and middle east
 - Among the Greeks themselves there was a tendency to look to Egypt (Plato)
 - The power of music to both soothe and stir the mind had existed in China and Egypt
 - It was a Greek trait (though Egyptian in its beginning) to organize into a pedagogical system
- 3 Pythagorean Theory was a liberation from this 'ethos'
 - Brought musical phenomena under control of number and proportionate relationships
 - Created thought that this would develop new constraints through abstract harmonic relationships and cosmic values
- 4 Attempts to analyze the structures which underlie music and musical sound had begun by 5th Century BC
 - No musicological writings survive from this period
 - Works in the Pythagorean tradition (quoted by later writers) attempt at harmonic analysis by parallel manipulation of mathematical ratios

B. THE TWO OPPOSING VIEWS

- 1 Damon (mid 5th Century BC)
 - Musical activity arises from the activity of the soul and effects the soul favorably or unfavorably
 - : Viewed music with the power to change the human soul for better or worse
 - : Reflected by Plato in 'The Republic'
 - First musical theoretician to apply moral valuation to the metrical complexity of rhythm

2 Other pre-cursors to Aristoxenus

- Have one thought in common with Aristoxenus
 - : How to reconcile the inherent problems of musical space
 - : With the evidence of the ear
 - : With limitations of their instruments
- Teletēs (420 BC – 345 BC) praising performers for producing beautiful music with just innate musical instincts
- Lasus of Hermione (6th Century BC) brought a revolution to aulos playing
- Epigonos of Ambracia (6th Century BC) Virtuoso harpist and master teacher of his own school

3 Philolaus

- Representative of Pythagorean Doctrine
- The nature of number and relationship is not a falsehood
 - : Number and truth are in close natural union
 - : 'Harmonia' brings inter-relationship to disparate elements of the cosmos
 - : Enables men to grasp reality

4 Timotheus of Miletus

- Altered the dithyramb choral hymn to Dionysus
 - : Made text an elaborate libretto
 - : Filled musical accompaniment with frequent modulation
- Resulted in elimination of any possibility of a single and stable 'ethos' (to extent modality would contribute to this)

5 Plato

- Used Pythagorean estimates of the importance of number (the formal component that mode and rhythm hold in common)
- In the 'Republic' dialogue he conceives education as paramount to the organization of the ideal state
 - : Art derives its main value as a means of attaining this ideal state
 - : Music is highly important to serve in building up a harmonious personality and in calming the human passions, it is to serve this goal not to provide superficial entertainment
- Saw music as a vehicle of 'ethos' through mimesis – the imitative representation of the real world in art and literature

6 Aristotle

- Maintained a belief in habituation as the source of character
- Recognized music's influence on education for better *or* worse
- Avoided applying ethical terms to the actual experience of music
 - : The experience was not an attitude of the soul but a 'pathos' (something that happens to one -something that one undergoes)
 - : Regarded music as a skill rather than a virtue

7 Aristoxenus of Tarentum

- Rejected ratio-based analysis
- Began the Hellenistic & Greco-Roman approach to music

- Maintained a high ethical view of the subject
 - : Lamented the passing of old standards of performance
 - Promulgated a method that qualified the intervals of the many attunements of Greek music
- His interest concentrated in aesthetic theory (rather than 'ethos')
- He did not deny 'ethos' outright but qualifies it as musical art can 'improve' moral character

8 Philodemus of Gadara

- Two axioms
 - : No two people will be moved in the same way by the same composition
 - : The expressive content of music is an illusion of the mind and nothing more
- Noted for his criticism of the theory of musical ethos and its educational value
- His theory
 - : All ears of listeners transmit the same information
 - : That being so no disagreement should arise as to the characteristic features of Enharmonic or Chromatic melodies
 - : Aesthetic feeling because it is irrational cannot come into play in melodic discrimination
 - : It is the ear alone which records melodic information
 - : It is the ear alone which derives pleasure from melody
 - : There is not any objective property in music that guarantees the solidity and pleasure of the aesthetic experience
 - The nature of the aesthetic experience is presupposed in the *subjective* stance of the listener
 - Music was a world without intrinsic necessity or intelligibility
 - : Music was inferior to purely intellectual pursuits

II THE FOCUS OF THE DIFFERENT VIEWS

A. WHAT ARE THE BASIC TRUTHS OF MUSICAL EXPERIENCE AND HOW IS MUSICAL KNOWLEDGE TO BE BUILT UP FROM THESE TRUTHS

- 1 The question that Aristoxenus grappled with
- 2 Began with the assumption that musical is an organic value worthy of study (for its own sake)
- 3 Music's existence relates to nothing beyond itself
 - Its meaning is intuitive to the musically intuitive mind
 - : This shows a vigorous reaction against Pythagorean harmonics
 - : Not just a rejection of a mathematically based harmonics
 - Also a positive assertion that ideas of in action correspond more systematically to the phenomenon of music rather than any law of mathematics
- 4 Hermonikoi
 - Provoked Aristoxenus' sharpest criticism
 - Based their theories *solely* on the evidence of their ears and the attributes of their musical instruments

- Eratocles (5th Century BC) was a leading exponent of the *strictly* empirical school

B. DIFFERENCE BETWEEN ARISTOXENUS AND PYTHAGOREANS (ACCORDING TO DIDYMUS 1ST CENTURY BC)

- 1 Musicians rely solely on their perceptual instincts in musical decision making
- 2 Pythagoreans rely solely in the objectivity of reason
 - Strove for independence from mere perception
 - To arrive at a system of pure reason
 - Aristoxenus saw music a close union of reason *and* perception
- 3 He realized it is not enough to have an innate sense of melodiousness as an aesthetic instinct based on the simple act of hearing
 - Need an intuitive sense of the melodic
 - But also a rational understanding of the musical
 - Believed music merits a science of its own
- 4 Pythagoreans tried to force musical space to conform to the laws of mathematics
 - Aristoxenus brought musical space into what the ear *perceives* to be true
 - : Cleonides 'Introduction to Harmonics' (1st Century BC)
 - Clearest treatise on the technical aspects of Aristoxenus
 - : Gaudentius
 - It was by treating reason as secondary that Aristoxenus contradicted the norms of scientific inquiry
- 5 Aristoxenus was struggling to do something (he indicated) had never been done before
 - To offer composers a system that would allow for a flexibility that is matched only by the working of the human voice and that is sanctioned only by the perception of the human ear
 - : No such thing as chance in melody
 - : Melody that moves the soul is determined by 'natural' laws
 - His theory derived from the ear's knowledge and from musical intelligence
 - : Could never extend beyond music
 - : Could never extend beyond its own laws
 - Pythagoreans universalized the laws they derived from string length to include the whole cosmos and all of human life
 - Theophrastus a part of the Peripatetics
 - : A group founded by Aristotle and studying his works
 - : Pythagorean mathematical theory could never succeed in accounting for the perceived properties of music
 - : Aristoxenus' last teacher was Aristotle and Theophrastus was head of the Peripatetics when Aristotle was forced to flee Athens

- It has been stated that Aristoxenus replaced the deductive and speculative method of the Pythagoreans with the empirical and experimental method of practicing musicians
 - : Challenged by the Levin text who indicated Aristoxenus' own words
 - There can be no empirical method for music without there being first speculative concepts and intuited forms of order
 - There is no speculative thinking whose musical concepts do not reveal the empirical material from which they stem
 - : He obtained this material by
 - Means of his ear
 - Experiments with tuning
 - Close observation
 - : He sought to make these conclusions demonstratable

5 THE MUSIC

I OVERVIEW

A. BACKGROUND

1 Sources

- Four main sources of evidence
 - : Artistic representation of musicians and instruments
 - : Fragmentary remains of surviving instruments
 - : Texts and inscriptions
 - : Surviving musical scores
- Actual specimens of the music are very limited
- Considerable amount of Theory comes through writings and treatises about the music
 - : Aristoxenus of Tarentum on harmonics and rhythm
 - System of Aristoxenus provides an inventory of the melodic resources of Greek music
 - : Authors flourishing between 300 BC and 200 AD
 - Cleonides, Euclid, Nicomachus, Alypius, Gaudentius, Bachius (senior), Aristides, Quintilianus, Claudius Ptolomy
 - Additional material in the writings of Plato and Aristotle

2 Legacy

- Greek music theory has had more influence on European music than most musicians are aware of
 - : The immediate source of early medieval music
 - : Praetorius indicated that some early medieval organs had a lowest note of 'B'
 - : 'A' would be expected
 - Reason is 'B' was the lowest note of the Greek system
 - 'A' being added afterwards

- Boethius (6th Century AD) quotes some Greek notation
 - : Link between the scholarship of Antiquity and that of the Middle Ages
 - : Concluded musical antiquity
 - Produced 'De Musica' in 5 Books
 - Considered the musical 'bible' of the west for 1000 years
 - : Summarized the works of his Greek predecessors
 - : Uses Latin letters (for his own purpose)
 - : Find the Gregorian Modes arranged in his own work
 - But he confused them in his descriptions
 - Misnamed them all
- Plutarch (Pseudo) 'De Musica'
 - : Attributed to Plutarch but style and content indicate as a compilation written around end of 2nd Century AD (another author)
 - : Sources used were mainly 5th to 3rd Century BC
- Renaissance theorists increasingly moved away from Boethius
 - : Turned to original sources
 - : A survey of Greek codices then becomes significant for study of Renaissance and early Baroque

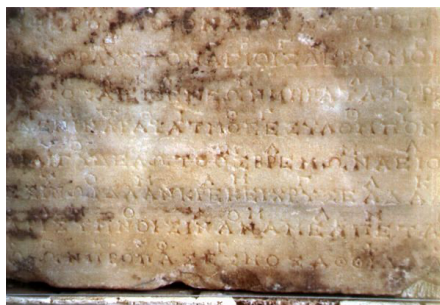
3 Fragments

- Orestes Fragment
 - : Done in one of the old modes
 - : Fragments of text with musical notation
 - : A musical fragment from the first stasimon of Orestes by Euripides
 - : In 1892, among a number of papyri from Hermopolis, Egypt, in the collection of Archduke Rainer Ferdinand of Austria
- First and Second Delphic Hymns
 - : Both Delphic Hymns were addressed to Apollo
 - : Found inscribed on stone fragments from the south outer wall of the Athenian Treasury at Delphi in 1893 by French archaeologist Théophile Homolle
 - : The occasion of the performance of both hymns was a Pythiad, a special religious procession of the Athenians towards Delphi held on specific occasions, usually after certain omens.
 - : First Delphic Hymn
 - Late 2nd Century BC (exact date is undetermined)
 - First Delphic Hymn is the earliest unambiguous surviving example of notated music from anywhere in the western world whose composer is known by name (written by Athenaeus, son of Athenaeus)
 - The First Hymn uses vocal notation
 - : Second Delphic Hymn
 - From 128 / 127 BC
 - Limenius, son of Thoinos is *credited* the Second Delphic Hymn's composer
 - The Second Hymn employs instrumental notation

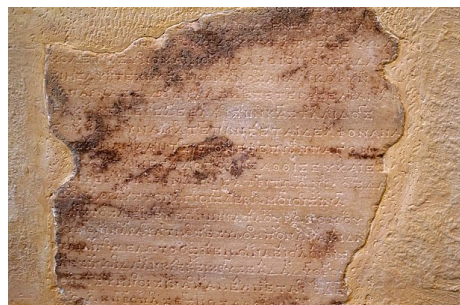
Because of the physical fragmentation of available Music relics structural analysis is not possible

Small handful prior to 1883 but expanded with papyrological discoveries later

- Epitaph of Seikilos
 - : The oldest surviving complete musical composition, including musical notation, from anywhere in the world
 - : From the 1st or the 2nd century CE
- Hymn of Mesomedes
 - : 2nd Century BC
 - : Prior to the discovery of the Seikilos epitaph in the late 19th century, the hymns of Mesomedes were the only surviving written music from the ancient world
 - : Published by Vincenzo Galilei in his *Dialogo della musica antica e della moderna* (Florence, 1581)
- Berlin Fragments
 - : Most likely contained compositions before 3rd Century BC
 - : Papyrus contains fragments both vocal and instrumental with musical notation
 - : Appears to be an anthology of melodies
 - : Brugsch Collection 1891
- First Pythic Ode
 - : An ancient Greek epinicion praising Hiero of Syracuse for a victory in the Pythian Games
 - : The poem's occasion is Hiero's victory in the chariot race of 470 BC, corresponding to the foundation of the city of Aetna which is also praised by the poet
 - : Authenticity is considered dubious
- Oxyrhynchus Hymn
 - : Is the earliest known manuscript of a Christian Greek hymn to contain both lyrics and musical notation
 - : The papyrus on which the hymn was written dates from around the end of the 3rd century AD
 - : The manuscript was discovered in 1918 in Oxyrhynchus, Egypt, and later published in 1922



Photograph of the original stone at Delphi containing the first of the two hymns to Apollo. The music notation is the line of occasional symbols above the main, uninterrupted line of Greek lettering.



First Delphic 1st & 2nd verse



Delphic Hymn Column



2nd Delphic Hymn



First Delphic Hymn 3rd verse

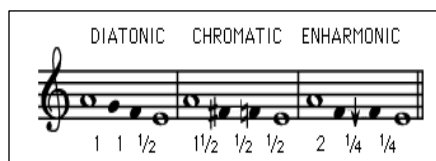
B. THE MODES

1 General

- Old mode names are derived from tribes of Greece & Asia
 - Result of two streams of influence – Hellenistic and Asiatic
 - The Greeks described intervals by means of a tetrachord
 - 'Mode' evokes familiar terms (Dorian, Phrygian, etc.)
- : Greek modes while using the same terminology as Middle Ages were not the same
 - : The modal named scales of the Middle Ages were Authentic Scales – Tonic to Tonic an octave higher (defined in 'white key' terms)
 - : The modal named scales of Ancient Greece were Plagal – 5th to 5th an octave higher

2 There is no theory of tonality

- In evolved state the regular modal scale (systema) and the 'keys' (tonoi) merge into a description of the tonal space
 - : Systema is an abstract set of notes defined within a skeleton of fixed intervals
 - : Here the note material of any musical piece can be matched – this is the Greater Perfect System comprising two octaves with a middle note at the center
 - : Tonai regulate the pitch distances between single instantiations of that 'scale'
 - Tonai and the Perfect System developed independently of each other
 - Enabled regular 'scales' to imposed on an already established system of pitch relations
- Three 'genera' of Greek music
 - : Diatonic – two descending whole tones plus one semitone
 - : Chromatic – minor third encompassing $1\frac{1}{2}$ whole tones plus two semitones
 - : Enharmonic – major third encompassing two whole tones plus two approximate quarter tones
 - : The two tones bounding the tetrachord were fixed and always formed a perfect fourth – the two inner tones were movable
- By the time of Ptolemy the Diatonic was supreme
 - : In context emphasized certain shape or framework of scale
 - : Possible for a neat system of octave modes
 - With tonics and 'perhaps' finals
 - Comparable to the modes of the Roman Church



3 The Perfect System

- A move to organize the chaotic multiplicity of modes into one consistent system
- Developing in the 5th Century BC
 - : Euclid first described the 'perfect system' in 4th Century BC
 - : Offered the possibility of representing two complete octaves
 - : A unique attempt to organize the musical space from *one* center

- Sets of keys appear in the 4th Century BC
 - : Aristoxenus indicated two of them
 - In one the original Dorian scale was shifted upward three times by either a tone or a semitone
 - In the second one Mixolydian, Phrygian, and Dorian were kept in place with Lydian and Hypolydian flattened by a quarter tone with an additional key 'Hypophrygian' following on F[#]
 - : The 5 Dorian Keys followed one another at the distance of a tone or semitone
 - Mixolydian d¹
 - Lydian c^{#1}
 - Phrygian b
 - Dorian a
 - Hypodorian g[#]
 - : Ptolemy (2nd Century BC) stated 7 Keys ascending diatonically from e to d¹
- System allowed transposition
 - : In evolved state, structure is determined by ancient practice of analyzing the tonal material in terms of tetrachords
 - Four note units spanning a fourth
 - Connected either immediately or by means of a disjunctive whole tone
 - : Modulation is produced by adding a conjunct tetrachord where otherwise a disjunctive tone would have been (and vice versa)

Dorian (in many respects) is central to Ancient Greek Music – as lyre tuning probably 1st to be learned by a novice – as a mode it was highly esteemed by Plato and Aristotle

C. HARMONY

1 Counterpoint

- Plato thought in a normal 3-year course with a child of 9 – 12 contrapuntal accompaniment would be too sophisticated
- Role of instrument is often confined to just striking the main note
 - : Adding a short ostinato
 - : Playing heterophonically – interpreting the same melody according to the personal tastes and abilities of the players (Sachs definition)

2 Case for 2-part harmony

- 1st Century AD the Peri' Kōsmou (Pseudo Aristotelian book) states "music mixes high and low, short and long notes in different voice parts to achieve one harmony"
- Plato states that a music teacher should refrain from heterophony

II NOTATION

A. PROBLEMS

1 To transform notation into music need

- Knowledge of tone system
- Unwritten conventions upon which performances were based

- 2 Unable to know what musical meanings would be extracted from the ancient Greek notational scheme
 - False reproduction to impose modern concepts of music
 - Cannot use modern performance practice nor modern instruments nor singing practice
- 3 What was the relationship between notation and the actual sounds
 - Might be that Greek notation corresponded to a musical skeleton not actual performance
- 4 Greek verse and language is both language and music
 - Western language and western music the rhythm of language and that of music are not identical (are two different and autonomous things)
 - Greeks knew a peculiar kind of rhythm which does not distinguish between accent and duration
 - Not able to directly observe the system's evolution (origins are the object of speculation)
- 5 Two systems of notation
 - Earlier Instrumental and a later Vocal
 - There is an understanding of both
 - BUT their actual pitches are unknown

B. BACKGROUND

- 1 Not earlier than 5th Century BC
 - *History of Ancient Greek music from Homer to late 5th Century BC is a history without musical notation
 - By aulos players in Argos
 - About 400 BC it was adapted by singers who transcribed the system into modern Ionian alphabet
 - By middle of the 3rd Century BC musical notation was firmly established (appearance of first preserved papyri documents)
 - Was in use for at least five centuries
 - Was known to Roman authors (Varro 116 – 27 BC & Quintilian c. 35 – 100 AD)
 - System of notation remained the prerogative of professional musicians until Imperial times
- 2 Fully developed system was the final outcome of rivaling but ultimately converging efforts of different schools of theorists – including instrument makers and musicians
 - From 4th Century BC onward notation continued to be used in two ways
 - : Older functional one centered on oldest set of signs used by lyre players and less sophisticated pipes
 - : Younger modulating interpretation associated with the more complex styles (of primarily aulos accompanied music)

- Aristoxenus objected to notation's failure to distinguish the functions of tetrachords and notes
 - : Absence of distinction between composite and incomplete intervals
 - : Simple and modulating scales
 - : Between styles of composition
 - : Felt notation could make sizes of intervals discernable to the eye but could never succeed in explaining the musical properties of such intervals as presented to the ear in melody

Aristoxenus rather despised musical notation as contributing nothing to the understanding of the Art – felt notation is only a rough approximation of musical reality

C. IN PRACTICE

- 1 Employed letters and letter like characters
 - Each designated a functional position within a network of musical scales
 - Must be derived by reference to the musical context (general tonality) of a given piece
- 2 Possible to indicate any given tone in the diatonic, chromatic, or enharmonic
- 3 Two different sets of notations were used employing the letter system – one for vocal and one for instrumental
 - Extant scores do not maintain distinction throughout
 - No meaningful series emerges
 - Not arranged in alphabetical order
 - Order appears to not make musical sense
 - : In intervallic relationships
 - : Degrees of the scale
 - : Meaningful numbers
- 4 Union of Music and Poetry
 - Both were intimately blended
 - Poetry was felt to require delivery in song for complete expression
 - : Music had little importance except to embody poetry
 - : Portrayed in association with instruments (most commonly the lyre)

From Stefan Hagel, 2010

5 According to Curt Sachs

- Instrumental Notation
 - : That it was invented for an instrument with 5 strings in an octave with 6th string in octave from lowest
 - : Letters set in usual orientation designate open strings
 - : Stopped strings are denoted by inverted and reversed letters
 - : The lyre was Pentatonic without semitones
 - : This tuning was preserved even with an increase in string number
 - : The script derived for instrument indicated *fingering rather than pitch*
 - : In effect was a tablature not notation
 - : Vocal Notation
 - : Much more recent development
 - : Followed the same principle
 - Still with groups of 3 symbols but with Classic Alphabet (adapted to vocal needs)
 - Was actually lyre tonal notation to accompany vocal
- Series of instrumental note signs still remain a mystery

D. RHYTHM & TEMPO

1 Tied to the language

- Short syllables must have short notes and long syllables must have long notes
 - : The vocal was always sung in unison or octaves
 - : Instrumental accompaniment was above the melody utilizing 2^{nds}, 4^{ths}, 5^{ths}, and Major 6^{ths}
 - : This according to Aristotle and Plutarch
- The rhythm of the music is dominated by the meter of the poetry
 - : Poetic meter shaped the rhythm
 - : Word accents affected pitch
 - : A language which does not distinguish between music AND language

Plato 'wished' boys be instructed to play instruments in unison with the melody

2 Words gave rhythm and (to a lesser extent) melodic outline

- Rhythm of the music based upon rhythm of words
- Bar line either non-existent or slighter in an unstressed language

3 Tempo was not as vital as in our time

- Varied with the mood of the performer and the piece
- Plutarch does not mention tempo when enumerating the 'three impressions rapidly made on the ear at the same time'

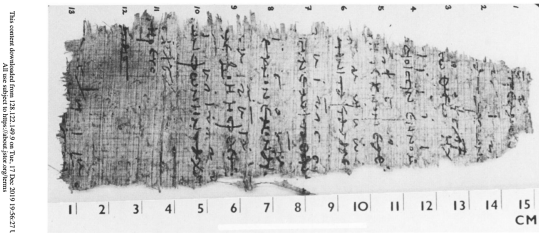


Figure 1. Oxyrhynchus Papyrus 3161, fragment 1, face
Reproduced by permission of the Egypt Exploration Society, London

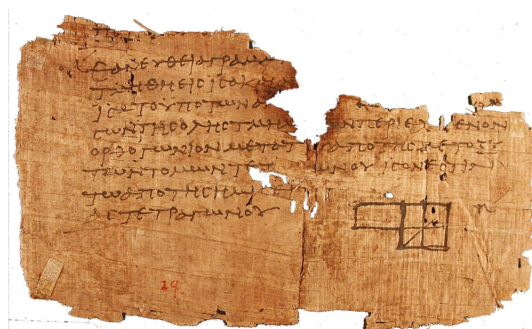
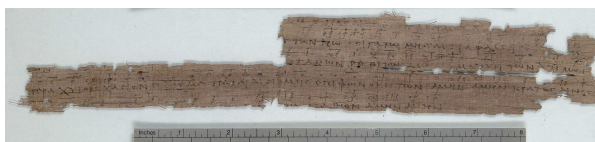
Th. J. Matheson: New Fragments of Ancient Greek Music

For example, a transcription of lines 5-9 of fragment 1 would exhibit the contour shown in Example 1.¹⁰

Example 1. Transcription of lines 5-9, Oxyrhynchus Papyrus 3161, fragment 1

Oxyrhynchus Papyrus

Oxyrhynchus Transcript

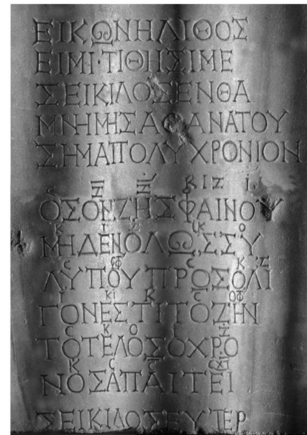


Oxyrhynchus Hymn

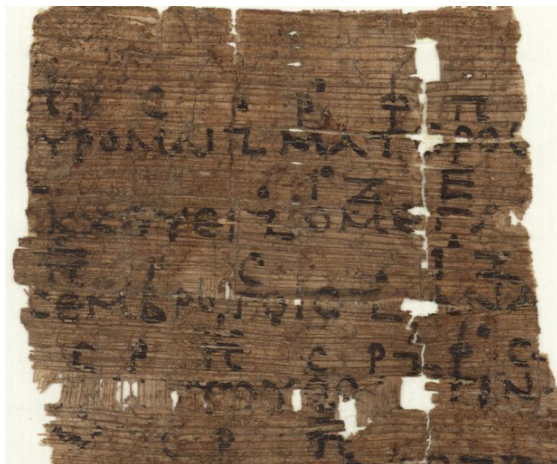
Oxyrhynchus Hymn



Seikilos Fragment

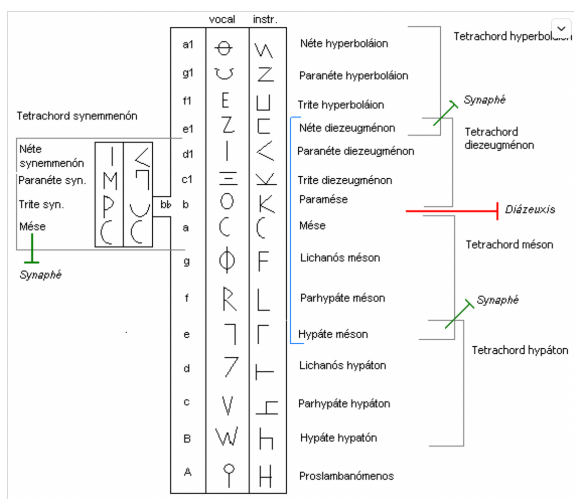


Seikilos Detail



This Greek text on papyrus, written around 200 BC in Hermopolis, Egypt, has seven lines of writing containing parts of verses 338–344 from the first chorus of *Orestes*. Composed in 408 BC by the Greek tragedian Euripides (circa 480 BC–406 BC), the play recounts the story of Orestes, who kills his mother Clytaemnestra to avenge the death of his father, Agamemnon, and is pursued by the Furies for this deed. In addition to a passage of a chorus song (*stasimon*), the fragment contains vocal and instrumental symbols written above the lines of the lyrics. It is one of a relatively small number of surviving Greek texts with musical notation. Although much remains unknown about the music of the ancient Greeks, scholars have tried to reconstruct from such notation how the chorus might have been sung and played. The papyrus, which was recovered from mummy cartonnage at the end of the 19th century, belongs to the Papyrus Collection of the Austrian National Library, which was assembled in the 19th century by Archduke Rainer. In 1899 he gave it to Emperor Franz Joseph I, who made the collection part of the Hofbibliothek (Imperial Library) in Vienna. One of the largest such collections in the world, the Papyrus Collection (Collection Erzherzog Rainier) was inscribed on the UNESCO Memory of the World register in 2001.

Orestes Fragment



Orestes Description

The central three columns of the diagram show, first the modern note-names, then the two systems of symbols used in ancient Greece: the vocalic (favored by singers) and instrumental (favored by instrumentalists). The modern note-names are given in the Helmholtz pitch notation, and the Greek note symbols are as given in the work of Egert Pöhlmann [de].^[9] Note that the pitches of the notes in modern notation are conventional, going back to the time of a publication by Johann Friedrich Bellermand [de] in 1840; in practice the pitches would have been somewhat lower.^[10]

The diagram reproduces information from Chalmer. It shows the common ancient *harmoniai*, the *tonoi* in all *genera*, and the system as a whole in one complete map.

6 INSTRUMENTS

I BACKGROUND

A. EGYPTIAN INFLUENCE

1. Musical instruments worked as an accompaniment of the voice to emphasis content of song lyrics
2. Different types of harps from Archaic to Classical Greek periods seem very similar to Egyptian angular harps from the Egyptian late period
3. Egyptian round-frame drums were the most important influence on Greek round frame drum (tympanon)
4. Relative importance of aerophones
 - Had a limited and negative presence in Mesopotamia and also in some Indo-European cultures (Hittites) and Celts
 - Wind instruments attained a relevant presence in Greece (no clarity about their arrival)
 - Had a notable presence in Egypt
 - : Long Flute image in pre-dynastic mudstone palette
 - : Old & Middle Kingdom funerary, sacred, & popular scenes
 - : Double oboe from New Kingdom banquet scenes

Aerophones 'could' have arrived in Greece through the peoples of the Mediterranean Levant

B. HISTORY

- 1 Lyre & aulos dominated the musical culture
 - Prime instruments of public performance in cult and civic ritual
 - Also in professional musical competitions
- 2 Kithara can be traced back in Western Asia several thousand years to prehistoric roots
- 3 Lyra first appeared in Egypt about 1500 BC
- 4 Surviving Instruments
 - Elgin Lyre in British museum
 - Aulos in Brauron, Elgin, Louvre, and Copenhagen
 - An example of a Greek Salpinx
 - Various percussion instruments

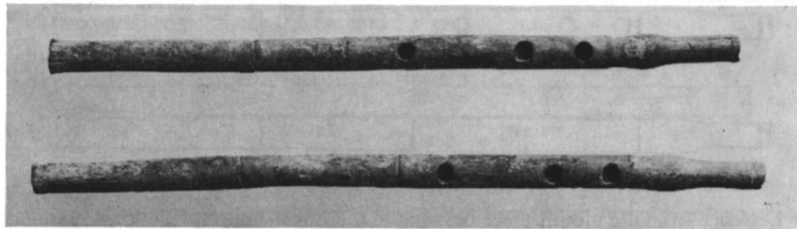


Elgin Lyra restored from remains – British Museum



Figure 1: The Louvre aulos (E10962)
(Photograph by Stefan Hagel; courtesy Louvre Museum)

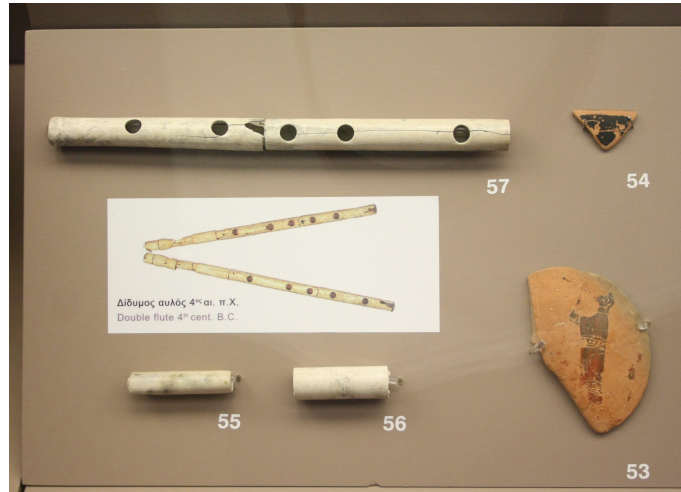
Louvre Aulos



The two pipes in The National Museum.
Copenhagen Aulos



Elgin Aulos



no. 57 shows the Brauron aulos, found at excavations at the temple site of Brauron in a holy pond. It is made of bone and dated to the end of the 6th C. - 5th C. No.s 55 + 56 are fragments of an aulos No.s 53 + 54 show two aulos players on fragments of pottery. Brauron Museum
Brauron Aulos



Salpinx – MFA Boston



Krotalon

II THE INSTRUMENTS

A. STRINGED

1 Archeological remains

- Two (or 3) Mycenaean instruments survive
 - : Range from Late to Late Helladic Perion
- Several substantial Lyre remains survive
 - : Tortoise shell sound boxes from Argos, Reggio, & Basse
 - : Two Lyre arms and a cross bar (Elgin Lyre)

- 2 Monochord used for acoustical experiments
- 3 Trichord (or Pandora) a kind of lute with neck used to stop the strings with fingers
- 4 Trigon a harp with a large number of strings with pan harmonic capability of playing of all the modes
- 5 Pectis a high-pitched instrument used by women
- 6 Magadis which both note plus octave
- 7 Lyre
 - 4 strings with 5 strings appearing in 8th Century BC, 7 strings in 7th Century BC (appearing on Vase images)
 - Used as support for the singer's voice and as a solo instrument
 - : With a pentatonic accordatura (tuning scheme)
 - : Forced player to avoid certain notes or produce them with help of artificial devices (a difficult technique)
 - Part of a grouping of instruments with strings fixed to a crossbar placed between two uprights
 - Seems to have been unknown in the early orient
 - : Imported to Hellas by the Greeks
 - : Kithara (Lyre derivative) can be traced back in Western Asia several thousand years to a prehistoric era
 - Seems to be adapted from small Syrian types
 - Excavations at Ur reveal a large type with 8 to 11 strings (from about 3000 BC)
 - : Well developed at this point indicating *not* the beginning but rather a much later stage of development
 - Smaller type (4 to 6 strings) soon appeared in Syria
 - First appeared in Egypt about 1500 BC but always looked upon as a foreign instrument
 - Did utilize the 'syrigmos' (non pitched sounds) for effect but much less complex sound pallet
 - The shaping and nomenclature of the tonal system was largely determined by the constant use of the Lyre
- 8 Strings were made of twisted sheep gut (from 'de Musica')
- 9 Kithara the chief stringed instrument and only one of the strings used in the theater
 - The Kithara was a seven-stringed professional version of the lyre
 - The Kithara was primarily used by professional musicians
 - Kithara along with the Phominx were box lyres
 - : Phorminx was the Lyre of the Homeric Epic
 - First appeared in 8th Century BC art work
 - Represented in Classic form 6th – 5th Century BC
 - Eclipsed by the kithara in 6th Century BC
 - Supported by Aristotle as a professional instrument

Ur: a Sumerian city founded about 3800 BC located in Iraq

- The Lyrea and Barbitos were bowl lyres
 - : Longer stringed with deeper sound
 - : Appear in Greek art mid-5th Century BC

10 Lutes

- Known in many ancient Near East cultures
- Appear in Greek art till 4th Century BC

B. WIND

1 Archeological remains

- At least 18 remains of auloi exist
 - : Range from 7th Century BC to 1st Century AD
 - : Earliest examples have the fewest finger holes (5-9) the latest 10-15
- Flutes have not fared well in the archeological record

2 Flutes

- Rare in art work
- Double Flute
- Transverse called plagiaulos

3 Syrinx (panpipe) and bagpipe (mainly used by shepherds)

- Makes rare appearance in Greek vase paintings
- Often in pastoral contexts

4 Aulos

- Single – Which with plugs could produce the pan harmonic scale
- Depictions show variations in length
- Text sources confirm there were several types differing mainly in pitch
- Played in a wide range of contexts
- Change in playing technique in 'new' music (6th Century BC) evident in timbral effects introduced into compositions otherwise composed of sequences and musical pitches (Saradas)
 - : Called syrigmos which used a repertoire of sounds not based on musical pitch
 - : Imitated sounds of monsters and lamentations
- Theophrastus in his 'Historia Plantarum' (371 BC – 287 BC) provide info on reed making

5 Hydraulis

- Invented in the 3rd century BC by Ctesibius of Alexandria
- Earliest known mechanical pipe organ

- Its pipes stood on top of a wind chest that was connected to a conical wind reservoir. The reservoir was supplied with air by one or two pumps.
 - : For the pipes to sound evenly, the wind chest needed steady air pressure. The open bottom of the cone was set in a tall outer container half filled with water
 - : When air pressure in the cone was low, the water level rose inside it, compressing the air and restoring the former air pressure
 - : The player operated keys or, on some instruments, sliders that let air into the pipes

C. PERCUSSION

1 Archeological remains

- 3 pairs of Kumbala with additional unpaired examples
 - : The earliest date from 5th or 4th Century BC
- Several Seistra rattles

2 Associated primarily with revelry and mystery cults

3 Krotala

- Hand clappers similar to castanets
- Used in religious ceremonies

4 Kumbala

- Small cymbal
- Usually not bigger than the hand

5 Tympanon

- Frame drum
- Particularly associated with cults of Dionysus and Cybele

6 Seistra

- From wood, metal, clay or their combination
- With varied, penetrating and vague sound that accompanied the rhythm in the religious processions

D. MILITARY INSTRUMENTS

1 Archeological record

- Nearly complete examples of the Salpinx

2 Salpinx a straight round belled trumpet

3 Lituus a sacerdotal trumpet

4 Cornu a horn with bell over head of player

7 REPRESENTATIONS: ARTISTIC/TEXTUAL/EPIGRAPHICAL

I ART

A. IN GREEK AND ROMAN ART

- 1 Musicians and Instruments were artistic subjects from the earliest Bronze Age cultures of the Aegean
- 2 Find musical instruments of 3 main types – stringed, wind, percussion
 - Shown in almost every art form
 - Most noticeably in painted ceramic
 - Lyres most commonly occurring
 - : Shown with strings roughly equal in length
 - : Stretched across a resonant sound box
 - : Made fast to a crossbar held by two arms



This fragment of an Attic red-figure plate depicts an aulos player, and clearly shows the strap which was worn to aid the playing of the instruments. The inscription says, "Hermocrates did this" National Archaeological Museum, Athens / Photo by James Lloyd, Creative Commons



Fig. 55.4 Melpomene, Muse of tragedy, playing aulos. Red-figure vase by Methys Painter. Athens. 455-440 BC. Paris, Musée du Louvre, G440.

Aulos Player

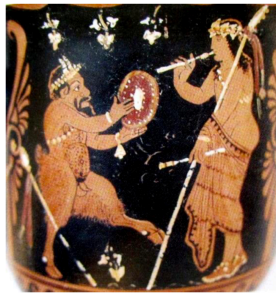


Kithara Player

From an Amphora of the Brygos Painter (ca. 470 B.C.) in the Boston Museum of Fine Arts

Dionysos blows the right pipe holding the other accompanied by a dancing Pan playing the tympanon. Bell krater, Intermsiate Group. Neapel, private collection.

After Konrad, Schauenburg, *Studien zur Unteritalischen Vasenmalerei*, VI (Westling-Kiel: Ludwig, 2003), pl. XIX



Tympanon Player

Woman playing pipes seated and dancing girl with krotala. Attic red figure cup, potter Hieron (signed), painted by Makron (Beazley), c. 480 B.C.
 London, British Museum, 1867.0508,1063 (E61).

© Trustees of the British Museum



Aulos & Krotala

II TEXT/EPIGRAPHICAL

A. IN GREEK AND ROMAN LITERATURE

1 Well Documented

- Greek and Latin verse composed to be sung
 - : Includes early Greek Epic, Lyric, and Drama remains
 - : Often contain clues to musical performance
 - : Occasional detailed reference to music
- Specialized musicological literature through which the history, forms, and underlying structures were debated and analyzed
- Inscriptions which supply evidence of contexts, details, dates, and locations
 - : Of certain types of performance
 - : Sometimes of the notated musical composition
- Also provide information about musical instruments
 - : Sometimes suggested by artistic & archeological evidence
 - : Often only provided by text sources
- Musical uses of the Voice are well documented
- Descriptions of sounds the instruments made
 - : Of limited value i.e., 'sweet sounding' it is contained in descriptions

Epigraphical is the study and interpretation of ancient inscriptions

- Descriptions of musical scenes parallel the mythical, ritual, or festive occasions implied by artistic evidence

2 Categories

- Greek Epic, Lyric, and Drama containing clues to the musical aspects
- Prose works providing evidence about music (evaluation, criticism, description, or examples)
- Papyri with musical notation started appearing in 3rd Century BC
- Inscriptions providing evidence of contexts, details, dates, performance locations, and in some cases actual musical notated composition

B. COLLECTIONS (BY PERIOD) REPRESENTING EDITORIAL CHARACTERISTICS OF THEIR RESPECTIVE PERIODS

1 1616 Johansen van Meurs

- A collection of Greek music treatises based on Lugdunensis Scaligerianus
- Contains works from Aristoxenus, Nicomachus, and Alypius

2 1652 Marcus Meibom

- Contains the treatises of Alypius, Aristedes Quintilianus, Aristoxenus, Bacchus, Euclid, Cleonides, Gaudentius, and Nicomachus
- Also, the latin treatise of Martianus Capella

3 1874 1898 Charles-Emile Ruelle

- Six-part translation of Aristoxenus, Nicomachus, Cleonides, Euclid, Aristotle's Musical Problemata, Alypius, Gaudentius, Bacchus, and Sextus Empiricus

4 1895 & 1899 Karl von Jan

- "Musici scriptores graeci"
 - : An extensive summary list of manuscripts
 - : Texts for Alypius, Aristotle's "Loca musica", Bacchus, Cleonides, Euclid, Gaudentius, and Nicomachus
 - : The 'Neapolitan Excerpts' (so called) part of 'Carmina'
- This is the only collection approaching modern levels of Classical Scholarship
- 1990 Louisa Zanoncelli
 - : 'Manuscripta Musicae Graeciae'
 - : The Sectio canonis, the Excerpta Neapolitana and the manuals of Cleonides, Nicomache, Bacchius, Gaudence and Alypius had not been published since the Musici scriptores Graeci of C. v. Jan

5 1902 H.S. Macran

- 'Aristoxenus'
- THE main object of this book is to introduce, to such English readers as may be curious in the matter of music, the writings of the foremost musical theorist of Ancient Greece (from the Preface)

6 1970 Eghart Pöhlmann

- 'Denkmäler Altgriechischer Musik'

- Has been the standard collection of the surviving fragments of ancient Greek music
 - Updated since with 23 additions to the original 1970 edition
- 7 1981 Thomas J. Mathiesen
- Acta Musicologica Vol 53 (International Musicological Society)
 - Known (1981) 41 authentic fragments of Ancient Greek Music
 - Ranges across seven centuries (3rd Century BC – 4th Century AD)
- 8 1984 Daniel Paquette
- Account of Greek Musical Instruments in Greek Ceramic
- 9 1984 Andrew Barker
- 'Greek Musical Writings' Vol. 1
 - Contains passages from Greek poets, historians and essayists, evoking or describing aspects of the practical activities of musical performance and composition
 - With excerpts from philosophers and social critics who comment on the moral, education and aesthetic dimensions of the art

C. THE CATALOGUE (THOMAS MATHIESEN IN 1978) OF GREEK TEXTS

- 1 Covers about 350 codices (ancient manuscripts in book form)
- 2 At present (1978 source) there is no comprehensive catalogue of Greek music manuscripts
 - Only a small fraction of the relevant codices for music have been collated or even examined
 - Some authors generally considered a part of the Greek theory tradition in historical treatments (Philodemus, Aristotle, Sextus Empiricus, and Plato) never appear in musical codices
 - : Appear to not have been considered by the compilers
 - : Would indicate the history of text transmission needs more attention
 - Although a few Greek theorists have been carefully edited the identification of so many unexamined codices indicate the need for new critical texts of many of the important Greek theorists
- 3 Changing approaches to text criticism and increased reading of late Byzantine codices indicate that continued reliance on emended texts or on a strictly stemmatic approach is no longer tenable
 - Historical treatments of ancient Greek music theory will need to pay more attention to the significance of groupings of authors within the codices
 - Especially how these groupings relate to distinctions of theoretical method

Stemmatic is a study analyzing the relationship of surviving variant versions of a text to each other – especially so as to reconstruct a lost original

8 ADDENDUM

There are 'problems' with Greek Historical context in the study of their music

- An impossibility of aligning facts in Chronological order:
- Ancient authors drew knowledge and opinions from sources antedating their own epochs by generations (and centuries) mingling them carelessly with contemporaneous ideas of their time
- Always questionable is whether published texts provide reliable editions of extant manuscripts – either inadequate manuscript catalogues and history of text transmission over time
- Not till the Renaissance was there a movement away from Boethius and back to original sources
- 'Mixed up' terminology caused by confusion of times, men, countries, and styles. Words such as 'harmonia', 'eidos', 'tonos', 'tropos', and 'systema' were not clear but rather misleading
- The results to the historiography of Greek and Roman music will be exposed to misinterpretation – handed down to the Middle Ages and assimilated in our own time
- Ancient Greece while geographically part of Europe the music was largely Asiatic in influence. The Greeks themselves credited Egypt, Assyria, Asia Minor, and Phoenicia with their instruments
- Music historians of earlier generations (before comparative musicology) were hampered by ignorance of Oriental (area east of Greece) Music
- There is a reliance on conjecture as to style and performance practice – we don't know the actual 'sound' in performance

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