

**GREAT THEORY
OF MUSIC**

BY

CHRYSANTHOS OF MADYTOS



Translated by Katy Romanou

THE AXION ESTIN FOUNDATION

New Rochelle, New York

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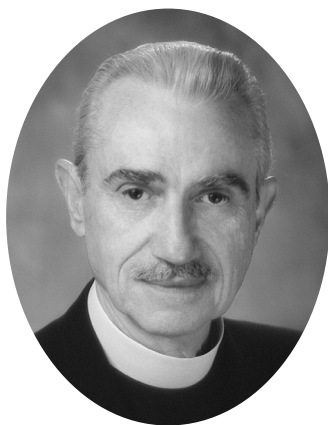
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Fr. Peter N. Kyriakos (1925-2006)

The author of the present publication, Chrysanthos of Madytos (ca. 1770 - ca. 1840), according to Professor Dimitri Conomos, was an “uncommonly well-educated and highly cultured hierarch,” and a “composer and educator,” among many other types of knowledge that he possessed.

Almost 200 years later, in the United States, another “uncommonly well-educated and highly cultured” member of the clergy touched our hearts with his musicianship and compositions using the new notation of Chrysanthos of Madytos. The Very Reverend Peter N. Kyriakos (1925-2006) shall be remembered for his reverence and faithfulness; friendship and love; his inspirational liturgies and angelic voice; his sense of humor and personality radiating kindness, gentleness, integrity, and humility.

It is for these qualities that we respectfully dedicate this book to Father Peter’s memory.

May it be eternal.

The Axion Estin Foundation Board of Directors
January 15, 2010

*“You satisfy me more than the richest feast.
I will praise you with songs of joy.”*

Psalm 63:5



OFFICE OF THE ARCHBISHOP

GREEK ORTHODOX ARCHDIOCESE OF AMERICA

Dear Dr. Lampousis and Members of the Axion Estin Foundation,

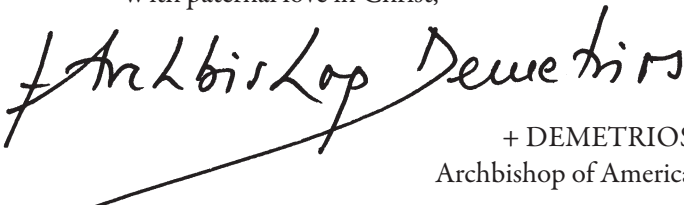
It is with particular joy that I greet you as you assemble in the CUNY Graduate Center Ethnomusicology Department to announce the publishing of the leading theoretical work of *Chrysanthos of Madyte* (ca 1770-46) who along with *Gregory the Protopsaltes*, and *Chourmouziou the Archivist* were instrumental in the reform of the notation of Greek ecclesiastical music.

I offer my congratulations for your efforts to bring to light the important work of this reformer, to promote the study of Byzantine music, and to create opportunities for further understanding and appreciating this music as it has survived through the centuries.

May this project supported by the Very Reverend Peter Kyriakou Endowment Fund pay honorable tribute to the blessed memory of the exemplary priest of the Greek Orthodox Archdiocese of America, The very Reverend Peter N. Kyriakos (1925-2006), who in word and deed, in worship and ministry, ceaselessly gave praise to God and glorified His holy name.

With my heartfelt thanks to Presvytera Kay Kyriakou and the members of the Very Reverend Peter Kyriakou Endowment Fund who supported this worthy initiative whose fruition we celebrate today, I remain

With paternal love in Christ,



+ DEMETRIOS
Archbishop of America

January 15, 2010

TRANSLATOR'S FOREWORD

The English translation of Chrysanthos from Madytos *Great Theory of Music* was submitted as a prerequisite for the degree Master of Music to the School of Music, Indiana University in Bloomington in 1974.

This was an annotated translation, aiming at locating the sources of the work, in order to prove that the main purpose of the writer was to immerse its readers into the ideology of the Enlightenment and the conscience of an ancient Greek heritage.

Writing the work, I realised that my wish to track down the sources of this most patchy work was an utopia, especially since most of the possible sources have also been written in the same patchy manner.

Sometime ago, I was informed by Angelos Lampousis that my thesis circulates in the Internet, and that he would like to try and publish the work.

His proposal I accepted with joy.

Recently I was able to realize the augmented interest of foreign scholars on Chrysanthos' work and concurrently a number of misinterpretations of his significance, most often resulting from ignorance of his cultural environment.

In the new form presented here, various mistakes have been corrected, the ambition of annotating the translation has been abandoned and the concept of rendering musical terms has been changed. Most terms are not translated but transliterated, in order to show Chrysanthos' application of ancient Greek in his intention to show the continuity of Greek culture.

I am convinced that the importance of the book is demonstrated in this plain translation and the information contained in the introduction.

Katy Romanou

November 13, 2009

INTRODUCTION

The New Method

The music notation used today in Greek churches was formulated in Constantinople by the so called Three Teachers, Chrysanthos from Madytos, the author of this book, Gregorios Protopsaltes and Chourmouzos Chartophylax. Their New Method, officially adopted by the Great Church in 1814, permitted for the first time in history the printing of Byzantine¹ notation. Music printing – invented in the West little after the Fall of Byzantium – enabled the uniform interpretation of music over the vastly dispersed Greek Orthodox communities during the last two centuries. Thus ended the extraordinary diversity of interpretations given to neumes through the four centuries of the Ottoman occupation.

Through printing, Byzantine music lives up to our own times, as a functional, contemporary music, side by side with Western and other ‘art’ musics, while preserving its difference, its uniqueness and the characteristics of its deep history.

The New Method was preceded by various attempts to reform the notation, including proposals to introduce staff notation. Main causes of their failure were their technical defects as well as politics. The latter was especially involved in cases where Western influence was much pronounced.

The New Method adhered to basic aspects of the traditional system to a sufficient degree, while the elements of Western notation (a notation developed for instrumental music) absorbed, were disguised in Greek clothing and were not brought out by its promoters, in contrast to previous attempts.

Byzantine notation developed during long centuries to symbolise music that remained exclusively vocal, always “supporting” a text. In fact, the cohesion of the notational system collapsed when, in the 14th century, music lost its secondary role (of supporting logos), and

¹ Greeks apply the adjective “Byzantine” for all manifestations of the tradition inherited from Byzantium.

was upgraded to an autonomous art; the text – both meaningful and meaningless – was then used as a vehicle to pure musical imagination and vocal virtuosity, for the manifestation of which the notation was enriched with a great number of neumes indicating subtle differences in voice production, timbre varieties and virtuosic ornaments.

The New Method preserved the earlier distinction between quantitative (delineating the tune) and qualitative (indicative of vocal pronunciation or ornamentation) neumes. The former – reduced from eleven to six – remained diastematic; they do not indicate frequency but the difference of two frequencies; not the pitch, but the interval, the exact size of which is determined by the use of the *martyrie* of the *echoi*, that act as key signatures.

The principle by which the diastematic neumes operated was also preserved. Only those neumes indicating the interval of the ascending and descending second, the descending fourth and the ison (which indicates repetition) may stand by themselves as they denote both quantity and quality. All the other neumes signify quantity only and have to be combined with those indicating a second (the number of which exceeds all the others) in order to obtain their quality.

With regard to the qualitative neumes, whose number had reached 40, the reformers appeared to be more radical, preserving eleven only in their method. This severe reduction is reasoned with the presumption that starting from the 17th century, the neumes symbolising melismatic formulas had been gradually and successively “explained”, i.e. analysed, and that the notation as applied by Chrysanthos’ teacher, Petros Byzantios, had reached a state that differs little from the New Method.

This theory expounded for the first time in the book under translation and much supported and disseminated by Constantinos Psachos,² presents the New Method as the outcome of a gradual process; not a reform, but the sealing of a long tradition. Among the qualitative neumes applied, a number is used for the expression of rhythmical subdivisions, corresponding to those in staff notation; thus the poetic concept of rhythm was replaced by a musical concept of it. Bar lines were

2. C. Psachos, *Η Παρασημαντική της Βυζαντινής Μουσικής*, 2d ed., Athens: Dionysos, 1978

also introduced but their application has not been vastly adopted.

What Chrysanthos' students and admirers single out as a very efficient innovation is the replacement of the *polysyllables* by *monosyllables*³ for the instruction of the melodies (i.e., the solfège). The pA Bou Ga Di kE Zo nĒ being euphonious syllables out of the first seven letters of the Greek alphabet.

It is very interesting the fact that this inept identification of neumes that denote intervals with names that denote pitch has not produced neither problems in teaching during the past two centuries, nor polemics by adversaries!

Chrysanthos from Madytos

Chrysanthos was born in Madytos, a town opposite the Dardanel on the Chersonesos of Thrace, belonging to the Metropolis of Heraclea. The age of his birth is not known, but most writers give c. 1770.⁴ His only teacher known to us is Petros Byzantios, by whom he was instructed Byzantine music. He also had a good command of staff notation and played both the Arab and the European flutes. He had a reading knowledge of Ancient Greek, Latin, Turkish and French.

Chrysanthos has been recognised as an uncommonly cultured man (the truth of which relies on the state of education in his times).

Theodoros Aristocles in his biography of Constantios I (patriarch of Constantinople in 1830-1834)⁵ gives the information that Chrysanthos was around 1811 active in the metochion of Mount Sinai at the district of Palatas, where Constantios resided every winter, having transformed it into a cultural centre of progressive trends, a museum, so to say, and an academy for Constantinople's intellectuals. One would see there always gathered patriarchs and archpriests and political leaders of every nationality and every party, and the most eminent intel-

³ Terms used as nouns in Byzantine theories.

⁴ Georgios Constantinou, judging mainly from Chrysanthos' ecclesiastical ranks during his early life, proposes the years around 1780. See, G. Constantinou, *Θεωρητικόν Μέγα της Μουσικής Χρυσάνθου του εκ Μαδύτων. Το ανέκδοτο αυτόγραφο του 1816. Το έντυπο του 1832*, Great Vatopaidion Monastery, 2007: p.25, fn. 20.

⁵ Th. Aristocles, *Κωνσταντίου Α' του από Σινάιου Λοιδίμου Πατριάρχου Κωνσταντινουπόλεως του Βυζαντίου Βιογραφία*, Constantinople, Proodos, 1866.

lectuals and teachers and clericals.⁶

Aristocles mentions Chrysanthos as one of Constantios' main collaborators and says that Chrysanthos wrote his *Great Theory of Music* "under the guidance of the ever-memorable Constantios".⁷

In two letters on the New Method written in 1815 by patriarch Cyril VI, and widely publicised, it is said that Chrysanthos was helped in his theoretical studies by "European music teachers".⁸ G. Papadopoulos says in both his biographical (1890) and historic (1904) works that Chrysanthos "visited various libraries".⁹ It is not clear when the information that Chrysanthos travelled to Western Europe for his research appears for the first time, but it does not seem well founded.¹⁰

In Greece there existed some very good libraries around 1800. The public library of Chios had 30.000 volumes, while Guilford was impressed of some private libraries in Corfú.¹¹

Another obscure incident in Chrysanthos' life is his alleged exile to Madytos sometime before 1814.

This event, is only mentioned by more recent authors; it is not mentioned either by Panagiotes Pelopides in his "Introduction" to the *Great Theory of Music*, or in Chrysanthos' short biography therein (II/§.63 & fn.) or in Theodoros Aristocles' biography of Constantios. The first to mention Chrysanthos' exile because of his teaching is Georgios Papadopoulos. The most interesting part of it is the description of Chrysanthos' vindication, because it demonstrates the secular and popular character of the orthodox church music, and consequently, the great importance of the New Method. Papadopoulos states that young masons in Constantinople sung hymns impressively well, while working on the scaffold. The owner of the house, metropolitan of Heraclea

6 Ibidem, p. 6.

7 Ibidem, p. 61.

8 "Liberal arts", in: *Ερμής ο Λόγιος* (1816), p. 10.

9 G. Papadopoulos, *Συμβολαί εις την ιστορίαν της παρ' ημίν εκκλησιαστικής μουσικής*, Athens, Kousoulinos & Athanasiades, 1890, p. 333. Id., *Ιστορική Επισκόπησις της βυζαντινής εκκλησιαστικής μουσικής*, Athens, no ed., 1904, p. 200.

10 Constantinou considers "Chrysanthos staying in Western Europe (possibly France)" a "certainty" (ibidem, p. 24). But if that were the case, Fétis, who gives so much information on the New Method, would had certainly mentioned it.

11 *Ερμής ο Λόγιος*, IX, 1819, pp. 604-08 & H. Angelomati-Tsoungaraki, *Η Ιόνιος Ακαδημία. Το χρονικό της ίδρυσης του πρώτου ελληνικού πανεπιστημίου (1811-19914)*, Athens, Ho M. Romios, 1997, p. 31.

Meletios, asked the masons how such young men could sing such difficult chants so perfectly. He was told that they were taught them by Chrysanthos in his new method. Meletios then convinced the patriarch of Chrysanthos' efficacy and Chrysanthos was called back from exile.¹²

By Chrysanthos' time, the most important part of Greek nationals was outside the borders of today's Greece. Constantinople was to them a cultural metropolis, not an ecclesiastical centre only. Besides, the antithesis between ecclesiastical and secular music was a concept not yet disseminated in this area. The secular and popular character of the Orthodox Church was marked; its music was sung at banquets, at work as well as in church. For their popularity, hymn tunes were used, at school to teach geography, rules of the grammar and arithmetic, or to tease friends and foes.

During the first two decades of the 19th century, so crucial for the future of Greece, the political orientation of Constantinople's patriarchs was determining the clergy's relations with the Enlightenment, its fractions and their representatives, its attitude to the Greek Revolution and to the philhellenes that assisted it.

The clergymen that helped Chrysanthos with his research were Constantios, in whose environment Chrysanthos initiated his work (in 1811), Cyrillos VI, during whose patriarchate (1813-1818) the New Method was officially recognized and taught, and the metropolitan of Heracleia, Meletios, who is credited with having convinced the Church officials of Chrysanthos' importance. All three were progressive personalities connected to Greeks and Europeans living or travelling to the West.

Cyrillos and Meletios were admirers of Adamantios Coraes, the man who worked in order to establish the identity of the new Greek state on the heredity of ancient Greece, an idea that certain church circles fought as undermining the ties of the Greek nation to the Orthodox Church. The two men had signed a number of documents favourable for Chrysanthos and other young Greeks influenced by the Enlightenment. Very telling of their political beliefs is an invitation,

¹² G. Papadopoulos, *ibidem*.

signed by both, to Koumas, a young scholar, to teach in Constantinople. In the invitation it is noted that they are calling young people “who have a more essential knowledge, more diverse, based on reason” and who, therefore, “will be able to fulfil the nation’s desires concerning education”.¹³ This, as well as other documents and letters by Cyrillos and Meletios have been published in the periodical *Hermes ho Logios*, that promoted Coraes’ ideology and politics, as well as Chrysanthos’ reform.

Reading carefully through the pages of this periodical, one realizes that there existed a close friendship and collaboration between those two clergymen, Coraes, Anthimos Gazes (the editor of the periodical up to 1815 and thereafter an active supporter of the Greek Revolution), Constantinos Nicolopoulos and the Englishman Frederick North, 5th Earl of Guilford (called simply *Guilford* by Greeks).¹⁴

Constantinos Nicolopoulos was the Greek librarian at the Institut de France who helped with the Parisian editions of Chrysanthos’ works; he was a student and collaborator of F.-J. Fétis. While in Paris, he acquired an important library, which he donated to Andritsena, a city in Arcadia, wherefrom he originated.¹⁵

Guilford was the English nobleman Frederick North, 5th Earl of Guilford (1766-1827) (simplified to ‘Guilford’ in Greece) who founded, in 1824 in Corfu, the Ionian Academy, the first Greek University after the Fall of Constantinople. Desiring to create a genuinely Greek institution, Guilford travelled to all the places that were known for their Greek schools and teachers and managed to get feedback on every successful Greek school (in Chios, Constantinople, Ioannina, Athens, Trieste, etc.). He also visited European cities with prosperous Greek communities (Paris, various Italian, Austrian, as well as Russian

13 *Εφημέριος ο Λόγιος*, γ’, 1813: 306-308. Koumas taught in Constantinople in 1814-1815. See, Tr. Euangelides, *Η παιδεία επί τουρκοκρατίας ... Α’*, Athens, A.P. Chalkiopoulos, 1936, p. 18. 1936: 18.

14 Guilford was in Constantinople in 1811. See, H. Angelomati-Tsoungaraki, *ibidem*, pp. 3, 9.

15 F.-J. Fétis gives the information that Nicolopoulos left unfinished a translation of Aristoxenos’ *Harmonic Elements*. It is interesting to note that the first French translation of this work, written by Charles-Emile Ruelle, was published thirty years after Nicolopoulos’ death (Paris: Pottier de la Laine, 1871). See, F.-J. Fétis, “Nicolopoulo (Constantin-Agathophon)”, in: *Bibliographie universelle des musiciens et bibliographie générale de la musique*, Paris, 1872/ Bruxelles, Culture et Civilisation, 1972.

and Balkan cities). He chose promising youngsters to teach at the academy, which he sent to study in Europe at his own expense.

Hilarion Sinaites, the Cretan, was among the opponents of Co-raes. Earlier, however he had been Constantios' close collaborator. In 1818 he was assigned by Robert (?) Pinkerton, the English Biblical Society's representative in Constantinople, to translate the Bible into modern Greek, which he did, under the inspection of Constantios.¹⁶ In 1819 Hilarion became supervisor of the patriarchal printing house in Constantinople. He would publish offensive comments on Guilford and Nicolopoulos¹⁷ and invite Greek writers to publish their works in Constantinople and not abroad.¹⁸

One year earlier Cyrilos VI had been succeeded by Gregorios V, who "returned to the throne from his exile on Mount Athos full of zeal for the defence of the faith. The patriarch and the synod implemented a series of pastoral measures in an attempt to stem the tide of ideological change."¹⁹

The dissemination of the New Method

In 1819 Chrysanthos' young student and admirer, A. Thamyris,²⁰ arrived in Paris in order to supervise the construction of typesetting for printing music in the New Method.²¹ This work was done by M. Léger, collaborator of the famous publishers family Didot. Then, Thamyris, with the help of Nicolopoulos published Chrysanthos' *Introduction to the theory and practice of Music written for the use of those who study it in the New Method*, a manual for the instruction of the notation, which, in his words, was "necessary to students" and then, Petros Peloponne-

16 See, Th. Aristocles, *ibidem*, pp. 6-7. Hilarion's translation was published by the English Biblical Society in London, in 1828 (See, G. Bokos, *Τα πρώτα ελληνικά τυπογραφεία*, Athens, Helleniko Logotechniko kai historiko Archeio, 1998, p. 237). It did not circulate in Constantinople, because of serious reactions of the Church. Through the same society, translations of the Bible were also written in Corfu. Cyrilos VI certified their fidelity to the original and they "were disseminated in Epeiros, Thessaly and Albania". See, P. Chiotos, *Ιστορικά απομνημονεύματα Επτανήσου*, vol. 6, Zante, Phoskolos, 1887, p. 239.

17 See, *Ερμής ο Λόγιος*, IX (1819), pp. 811-820.

18 *Ibidem*, p. 271.

19 P. Kitromilides, "Orthodoxy and the West. Reformation to Enlightenment" in Eastern Christianity, edited by M. Angold, Cambridge, Cambridge University Press, 2006, p.209.

sios' Doxastika transcribed into the reformed notation by Gregorios Lampadarios.²² Both books appeared in 1821. Both were introduced to the readers with a foreword written by Thamyris.²³ In the former he spoke in youthful enthusiasm of the Enlightenment ideas Chrysanthos had inspired him with;²⁴ in the latter, he expresses his disillusionment on his teacher's sudden change and declares that he will not obey their incomprehensible demand to return to Constantinople.²⁵

A first stock of the *Introduction* containing Thamyris' preface was fast recalled and the book circulated again without it and without mentioning its editor. The preface was published by Giorgos Ladas in 1978 from a manuscript copy preserved.²⁶ The text is a fervent praise for the Enlightenment of which the New Method is a representative outcome, since it has reduced the thirty years previously required for the study of music to three, "leaving thus time for studies more advantageous to social life". It has frequent reference to Coraes, Rousseau and ancient Greek philosophers. It has a quotation from a text by Rousseau on rhythm (as, indeed, rhythmical divisions, bar-lines and the use of the metronome for the measurement of tempo were among the most obvious loans from Western notation). Thamyris uses harsh, ironic and disrespectful expressions against the old music teachers, whom he calls "completely ignorant teachers" who have "tortured the children of Greece". He concludes advising his fellow students: "Do not confine yourself to our music; study European as well, if you wish ours to reach

20 Thamyris' first name is mentioned by Fétis. In his *Biographie* (1873) he calls him Anastase in the articles "Lampadius" and "Chrysante de Madyte", while in his *Histoire général de la musique depuis les temps plus anciens jusqu' à nos jours*, vol. IV, Paris, 1874, he calls him once Anastase (p. 29) and twice Athanase (p. 48, fn. 2 and p. 53).

21 J.-F. Fétis, *ibidem*, p. 29.

22 Thamyris ambition to publish Petros Peloponnesios' *Anastasimatarion* was forestalled by Petros Manuel Ephesios, who published the book in Bucharest in 1920. Antagonism between the French and the Rumanian printers favoured the speed, the quantity and the quality of the first publications in the New Method. See, G. Ladas, *Ta πρώτα τυπωμένα βιβλία Βυζαντινής Μουσικής*, Athens, Cultura, 1978, p. 27.

23 J.-F. "Chrysante de Madyte" *Biographie* (1873) and G. Ladas, *ibidem*, pp. 19-26.

24 G. Ladas, *ibidem*, pp. 20-30.

25 Πελοποννήσιος 1821: η'. Thamyris died in 1828, in Paris. His death is mentioned by Fétis (1873: "Chrysante de Madyte" and "Lampadius"). Giorgos Constantinou believes that Thamyris was called back by his teachers because they were dissatisfied with the typesets

26 Γεώργιος Λαδάς, *Ta πρώτα τυπωμένα βιβλία Βυζαντινής Μουσικής* [The first published books of Byzantine Music] (Athens, 1978), p. 27.

its high level”.

So, Thamyras’ foreword connects Chrysanthos to the Enlightenment, while its retraction shows the effort to conceal this connection. But Chrysanthos’ second publication, the *Great Theory of Music* gives full evidence of its author’s active involvement in the Enlightenment of the Greeks. This book is not a second, enlarged edition of the *Introduction*, as it has been considered by various writers,²⁷ misled especially by its much delayed publication. The titles of the two books are eloquent of their difference. So is the introduction of the *Great Theory of Music* by Chrysanthos’ student Panagiotes Pelopides, who after speaking of the great benefit the New Method offered to Greek music, he presents the writing of the *Great Theory of Music* as a second great contribution of Chrysanthos alone to the progress of the nation, saying: “But besides this superb benefaction of the Three Teachers, Mister Chrysanthos in particular beneficed the nation still more, writing, with philosophical thought this didactic and philological treatise on musical science.”

With his contribution to the invention of the New Method and the writing of the *Great Theory of Music*, Chrysanthos fulfilled many aims of the Enlightenment: New educational methods were employed, schools were founded, simple teaching treatises were published, young people were sent abroad to study, the number of music teachers augmented, the heredity of ancient Greek culture was pronounced, and the study of Western civilisation encouraged.

The Great Theory of Music

For modern Greek culture, Chrysanthos’ publication is significant. Of the two parts it contains, the first deals systematically with the theory of ancient Greek, Byzantine, Ottoman and European music, giving comparisons of their intervals, modes and rhythms. The second part is the first Greek general history of music in modern times. Therein, Byzantine and post Byzantine musicians take their place in history after ancient Greek musicians and those mentioned in the Bible, and in

²⁷ See for example, Melpo Merlier, “Un manuel de musique byzantine, le ‘Théoreticon’ de Chrysanthos”, in: *Revue des études grecques* xxxix, 1926, pp. 241-6.

parallel with the great Western musicians.

Since the 14th century when Manuel Bryennios and few other Byzantine writers showed the Greek heritage of Byzantine music, prompted by the political choice to build the ties of the ailing empire on national identity, the flow of Greek music was invisible. Chrysanthos highlighted it again, after five centuries.

Chrysanthos covers the subject of ancient Greek music in a broad and comprehensive manner. Aristoxenos, Pseudo-Euclid, Nicomachus of Gerasa, Gaudentius, Baccheios the Old, Aristides Quintilianus, all writers published by Marcus Meibom (Amsterdam 1652), are frequently quoted or referred to, as well as Plato, Aristotle, Plutarch, Athenaeus and a lot more. A special chapter is devoted to Manuel Bryennios' *Harmonics*, as this is the first treatise to relate ancient Greek modes to Byzantine *echoi*.

The *Great Theory of Music* was already written in 1816. In that year Chrysanthos made a copy (called hereafter Ms.)²⁸ of his original autograph for his student, Gregorios, deacon of Chios, who was invited in that year to serve as a protopsaltes at Iași's cathedral and as a music teacher at the school founded in that city for the instruction of the New Method.²⁹ The original autograph, was most probably given to Panagiotis G. Pelopides, in 1820 and has not been located.³⁰

Chrysanthos aimed to introduce Western music science to Greek musicians. Thamyris must have echoed his teacher when he wrote "Do not confine yourself to our music; study European as well, if you wish ours to reach its high level" *The Great Theory* contains a large number of subjects, as well as passages and quotations, of 18th century literature on music, many of which, it should be noted, show the immense

28 Photocopies of the entire Ms. I was kindly provided by Manolis Chatzeyakoumis, who had found it and had published its description and his view on its importance (M. Chatzeyakoumis, "Αυτόγραφο (1816) του 'Μεγάλου Θεωρητικού' του Χρυσανθου", in *Eraniestes*, 11 (1974), pp. 311-322. Georgios Constantinou has recently published this Ms., presenting it in parallel with the first edition of the *Great Theory of Music*; this edition is accompanied with a digital copy of the Ms. See, G. Constantinou, *ibidem*.

29 See, G. Papadopoulos, *Συμβολαί εις την ιστορίαν της παρ' ημίν εκκλησιαστικής μουσικής*, Athens, Kousoulinos & Athanasiades, 1890, p. 328-329. A letter addressed by Chrysanthos to this Gregorios, written on February 1, 1817, and a statement by Peter Ephesios, dating April 1, 1819, that Gregorios helped him to find a printer in Bucharest, were published in the periodical *Ερμής ο Λόγιος (Ερμής ο Λόγιος*, ζ'. 1817: 225-226 and θ'. 1819: 610-613).

30 As he states in his prologue to the edition.

influence ancient Greek studies had on Western culture.

Borrowings, coming obviously from Western sources are chapters dealing with Western music. They are, in part I: Chapter IV “On musical instruments” (I/§.432-37), chapter V “The dispositions of the auditors of Music” (I/§.438-44), chapter VI “The use of music” (I/§.445-51), chapter VII “On harmony” (I/§.452-62), and in part II (which consists of a history of music from biblical times and Greek antiquity to the present, and a chapter entitled “How music should be approached”³¹), a few passages that have to do with Western music.

Of the above chapters of part I, none exists in Chrysanthos’ Ms. (I stress the fact that what is called Ms. here, is a copy of the autograph, which was given to Pelopides and has not been located). Comparing two points in the Ms. where Chrysanthos has taken a note on what he left out in his copying,³² it becomes clear that chapters IV-VII of Book Five did not exist in the autograph when its copy (the Ms.) was written (1816), but were added either in 1816-1820 by Chrysanthos, or after 1820 by the editor (or at his consent). Even if the latter is the case, it is still probable that the material published derives from Chrysanthos’ notes. The possibility that part of the edition derives from Chrysanthos’ notes worked out by the editor, is supported by the use of the third person when referring to Chrysanthos, whereas in the Ms. the first person is used. For instance, on p. xxxvi of the Ms., Petros Byzantios is referred to as: “our professor, called also the fugitive”. The corresponding passage in the published work (II/§.62) is: “teacher of the

31 An investigation of Western influences on Chrysanthos’ work, shown mainly on this chapter, was published by John Plemmenos in an article entitled “The active listener: Greek attitudes towards music listening in the Age of Enlightenment”, in: *British journal of ethnomusicology*, 6 (1997), pp. 51-63.

32 In p. 122 of the Ms. one reads: “Following comes the chapter on melopoeia, which was not written here”. The chapter “On melopoeia” is chapter I of the Fifth Book (p.174) in the publication, which includes also, as chapters IV-VII, the chapters mentioned above. (Chapters II and III of the Fifth Book are “How psalmodies were chanted” and “Today’s mode of chanting”).

In another instance where chapters were not copied out in the Ms. (p. 112), Chrysanthos gives the titles of all the chapters missing and not only the first of a series: “There follow chapter V: On Rhythm, chapter VI: On Chronoi, chapter VII: On the Genera of the Feet, chapter VIII: On Rhythms, Chapter IX: List of Ottoman Rhythms, chapter X: Rhythmic Agogics, chapter XI: On Rhythms’ Metabole, chapter XII: On Rhythm Poetics, chapter XIII: On Cheironomia. These chapters have not been written in this book, complying with its holder’s request”.

teachers Gregorios Lampadarios and Chrysanthos the Archimandrite, called also the fugitive”. In the third person is also the short biography of Chrysanthos (II/§.63, fn.), missing in the Ms.

One among the least worked-out and strangest points in the edition is an extract, quoted in French as footnote (in II/§.50). This footnote that does not exist in the corresponding point of the Ms. (p. xxviii), is from Guillaume André Villoteau’s *De l’état actuel de l’art musical en Égypte, ou relation historique et descriptive des recherches et observations faites sur la musique en ce pays*; there, it is the first footnote of Part Two, chapter four, dealing with Greek music. Chrysanthos’ bibliographic reference reads “p. 786, De l’état actuel de l’art musical en Egypte par m. Villoteau”.

French, the only modern foreign language that Chrysanthos possessed,³³ is the only language, besides Greek, used in his work – to clarify terms³⁴ and for bibliographic reference.³⁵

That his main sources were in French, is obvious from the transliteration of names into Greek: Guido [d’Arezzo] becomes *Γοῦι* (I/§.21, fn.), from the French Guy [Aretin], Boethius becomes *Βοέσιος* (II/§.49), from the French *Boèce*, and, in one extreme case, *Γαληνός* is written *Γάλλιος*, with the French as explanation in parenthesis: (Galien) (I/§.447, fn.).³⁶

A comparison of the two quotations below offers some more observations on the transliteration of foreign names, but also on Chrysanthos’ sources. The first is from The Great Theory (II/§.49) and the second, from the article “Musique” in Jean-Jacques Rousseau’s *Dictionnaire de Musique*:³⁷

33 As stated in early biographies. See, Th. Aristocles, *ibidem*, p. 61; G. Papadopoulos, *ibidem*, 1890, pp. 332-335, especially: 333; Idem, *ibidem*, 1904, pp. 200-202, especially: 200.

34 For instance: «Flûte traversière» (§.436), «Violon» (§.437) «Accompagnement» (§.459) «Faux-bourçons» (§.462).

35 All three are from a footnote to §.447: «Histoire de l’Ac. roy. des sciences. ann. 1707. p.7», «Histoire de la Musique» Chap.11j, pag.48», «affectu Musique § 314». The latter is translated from Latin.

36 In Latin, in English and in German, the name is transliterated (from its Greek original) without the i after the l (Galenus, Galen).

37 *Dictionnaire de musique, Paris*, Veuve Duchesne, 1768. The quotation is from the edition of 1824 (P. Dupont, 1824) (R: Art et Culture, Paris, 1977). As its is well known, Rousseau wrote his music dictionary, using his articles on music published in *L’Encyclopédie* (1751-72), of which he was dissatisfied.

Από δε τους Λατίνους και τους λοιπούς Ευρωπαίους επί μεν Θεοδωρίχου συνέγραψαν Βοέσιος, Κασσιόδωρος, Μαρτινιανός, και Αυγουστίνος, νεωστί δε, Ζαρλίνος, Σαλινάς, Ναγούλιος, Βικέντιος, Γαλιλαίος, Δόνις, Κιρχέρος, Βανχιέρις, Μαρσένος, Παρράς, Περώλτος, Βαλλής, Δεσκάρτης, Όλδέρος, Μανγόλις, Μαλκόμος, Βουρέττος, Ραμώ, Δ'Αλαμβέρτος, Ρουσσώ, και Όρόν.

Parmi les Latins, Boëce a écrit du temps de Théodoric; et non loin du même temps, Martianus, Cassiodore, et saint Augustin. Les modernes sont en grand nombre; les plus connus sont Zarlín, Salinas, Valgúlio, Galilé, Mei, Doni, Kircher, Mersenne, Parran, Perrault, Wallis, Descartes, Holder, Mengoli, Malcolm, Burette, Valloti; enfin, M. Tartini [...] et M. Rameau [...] M. d'Alembert [...].

The names of the “moderns” in the above quotation have the following correspondence:³⁸ *Ζαρλίνος* is Gioseffo Zarlino (1517-1590); *Σαλινάς* is Francisco de Salinas (1513-1590); *Ναγούλιος* is Carlo Valgúlio (1440-1498); *Βικέντιος* and *Γαλιλαίος* are Vincenzo Galilei (little before 1530-1591); *Δόνις* is Giovanni Battista Doni (1595-1647); *Κιρχέρος*, is Athanasius Kircher (1601-1680); *Βανχιέρις* is Adriano Banchieri (1568-1634); *Μαρσένος* is Marin Mersenne (1588-1648); *Παρράς* is Antoine Parran (1587-1650); *Περώλτος* is either Claude Perrault (1613-1688) or his brother Charles Perrault (1628-1703); *Βαλλής* is John Wallis (1616-1703); *Δεσκάρτης* is René Descartes (1596-1650); *Όλδέρος* is William Holder (1616-1696); *Μανγόλις* is Pietro Mengoli (1626-1686); *Μαλκόμος*, is Alexander Malcolm, (1685-1763); *Βουρέττος* is Pierre-Jean Burette (1665-1747); *Ραμώ* is Jean-Philippe Rameau, (1683-1764); *Δ'Αλαμβέρτος* is Jean le Rond D'Alembert (1717-1783); *Ρουσσώ* is Jean-Jacques Rousseau (1712-1778) and *Όρόν*

38 On the identity of the early writers there is no doubt; they are Anicius Manlius Torquatus Severinus Boethius, Magnus Aurelius Cassiodorus, Martianus Capella and Aurelius Augustinus (Saint Augustine). On the importance of the persons cited, as well as other detailed information on Chrysanthos' Western influences, see Katy Romanou, “Pitch Symbols for Intervallic Neumes: Decoding Western Influences in Chrysanthos' Work.”, *Acta Musicae Byzantinae*, vol. X (forthcoming).

is Alexandre Etienne Choron (1771-1834), the only writer in the list, contemporary to Chrysanthos.

Effetti, effets and effects

In the chapter entitled “The Use of Music” Chrysanthos treats a favorite subject of 18th century writers: the effects of music on men and animals, explained on the basis of the nature of sound, the physiology and psychology of hearing. This is a tradition, handed down by Greek writers and revived during the great flowering of positivism in science in the 17th and the 18th centuries. It was mainly through the work of Marin Mersenne, that events showing the effects of music, reported in mythology and history, were investigated scientifically, backed by the advancements in mechanics, physics, medicine and acoustics.

The subject is amply discussed in 18th century musical and medical bibliography.³⁹ Important music histories, music dictionaries and monographs⁴⁰ spend many pages on related phenomena described by Chrysanthos. They are incidents from ancient Greek mythology and history (about Timotheus, Alexander the Great, Amphion, Achilles etc.) and observations of phenomena related to the sound’s sympathetic resonance and harmonics, the healing by music of insanity, depression and other ailments, including the poisoning from tarantula’s bite. Also, incidents showing the powerful effect of music or sound on animals.

And nearly all the names and the bibliographic references existing in those studies are to be found in Chrysanthos’ work.⁴¹

39 In the same tradition belongs the treatise by Giovanni Francesco Zulatti (1762-1805), a doctor from Cefalonia, *Della Forza della Musica. Nelle Passioni, nei Costumi, e nelle Malattie, e dell’uso Medico del’ballo*, Venezia: Lorenzo Baseggio, 1787.

40 Such as Giambattista Martini in his *Storia della musica* (1781), Charles Burney in *A General History of Music, from the Earliest Ages to the Present Period, to which is prefixed a Dissertation of the Music of the Ancients* (1776), John Hawkins in his *General History of the Science and Practice of Music* (1776), J. Bonnet, in *Histoire de la Musique et de ses effets depuis son origine jusq’ à present* (1715), Pietro Gianelli in his *Dizionario della musica sacra e profana* “Effetti della Musica” (1801) etc.

41 Most distinguished writers are the English Dr. Mead (*Μεάδ*, I/§.447, fn., §.448), Baglivi (*Βαγλιβί*, I/§.448), Wilhelm Albrecht (*Βιλχιάμ Αλβρέχτ*, §.447, fn.), Bonnet (*Βοννέτος*, p. §.447, fn.), Bourdelot (*Βουρδελότ*, §.447, fn. & §.448, fn.).

Pa-ra-ga and pa-re-bo

The Western writers mentioned above, and a lot more, deal also with the issue of the solfeggio. In France (where the syllables applied today were vastly used in the 18th century)⁴² and much more so in Italy, where as Martini states, “this French method has a certain distaste among Italians”,⁴³ numerous systems were invented to facilitate singing instruction.

Under the term “solfier”, Rousseau presents in his dictionary syllables proposed by Sauveur (pa, ra, ga, da, so, bo, lo, do) and by Boisgelou (ut, de, re, ma, mi, fa, fi, sol, be, la, sa, si.). Well known is also at the time the system proposed in 1746 by the marquis Flavio Chigi Zondadari (using the syllables *Ut pa Re bo Mi Fa tu Sol de La no Si*), which according to Charles Burney was well known beyond Italy,⁴⁴ while according to Fétis, it was still in use, at the end of the 19th century, in Italy.⁴⁵

The fact that in the 18th century the solfeggio issue was much discussed, must have influenced Chrysanthos in the adoption of a similar system, albeit it hardly conforms with the concept behind the Greek notational system. However, this awkward adaptation (giving names that indicate pitches to signs indicating intervals) was a most essential element of his reform, because it permitted him to relate the New Method to ancient Greek and Western music theory. He was able to introduce musical (instead of poetical) meter and to measure scientifically on strings the size of intervals. He was able to take advantage of developments in instrumental music and use them to music that was preserved exclusively vocal through the centuries.

It is natural that most subjects discussed in *Great Theory of Mu-*

42 The fact that Chrysanthos demonstrates French solfeggio with those syllables, including the si (§.73, plate) is one more indication that his Western sources were French.

43 A. Schnoebelen, *Padre Martini's Collection of letters*, New York, Pendragon, 1979, letter no. 4219.

44 Ch. Burney, *ibidem*, pp. 102-103.

45 F.-J. Fétis, “Euchero”, in: *ibidem*, 1873.

46 J. Sauveur, *Principes d'acoustique et de musique, ou système general des intervalles des sons, et de son application à tous les instruments de musique*, Paris, 1709 / R: Geneva, Minkoff, 1973, p.31

47 Capitolo 2 “Delle laudi della Musica». Capitolo 3 “A che fine la Musica si debba imparare”. Capitolo 4 “Dell' utile, che si hà della Musica, et dello studio, che vi dovemo porre, et in qual modo usarla”. See, Zarlino 1558: 4-7, 8, 8-10.

sic, including most information on ancient Greek music, derive from Western music literature. To those might be included some whose derivation is not that obvious, as is the case with the discussion on Arab music. Indeed, Sauveur, speaking on Arab intervals calls the tones *Tanini και Baqya*,⁴⁶ for which Chrysanthos uses the corresponding orthography: «τανινι», «βάκυα» (§.66, fn.).

To detect Chrysanthos' sources is an utopic task; it would require research in numerous fields and periods. Possible sources, by Western authors, are written in the syllectic mode that Chrysanthos himself wrote his own treatise. So are also most among the ancient Greek works that initiated this long tradition. Similarities exist all over the net of this tradition that extends deep in time and broad in geographic areas. To this, the problem of historiography's change of focus in successive periods should be added, hiding from our knowledge a great number of works, or aspects of well known works. For instance, in the second half of the 20th century, when music theory became an autonomous field, Zarlino's *Le istituzioni harmoniche* was studied only for its third and fourth part, dealing with modes and counterpoint. But in the 18th century, much discussed was the first part, which is on music in general, including –in chapters 2-4– the subjects discussed by Chrysanthos in the chapter “The Use of Music”.⁴⁷

Further historical investigation on Chrysanthos' Western connections and the persons that might have assisted his or his editor's work, providing books and information, is an intriguing task. Chrysanthos was creative during a period crucial for the future of Greece as a nation and of the Great Church as an ecumenical institution. By many those two goals were conceived as conflicting. When all reverberation of this concept will be completely effaced, then scientific research on Chrysanthos might be more successful.

Katy Romanou

PROLOGUE TO THE FIRST EDITION

At last, look dearest compatriots! A didactic book of musical science appears as well. The nation would probably be deprived for long of this valuable treatise, if in our times did not live this man of wide learning and superb musicianship, the reverent, a saint I may say, of Dirrachion Mr. Chrysanthos.

If every scientific treatise is likely to grant mankind with more or less profit, the present work – dealing with a science, which according to the testimonies of the philosophers, contributes to the praise of God, the dignity of our holy Church and the ennoblement of humanity – will certainly be beneficial.

The said Mr. Chrysanthos – a lover of his nation – and his collaborators Mess^{rs} Gregory and Chourmouziou – the former, protopsaltes, the latter, chartophylax of the Great Church – met little before the Revolution and, exchanging their philosophical and scientific ideas, discovered time in music and defined in many different ways its measurement and divisions, because without time, nothing is achieved in music. They defined the intervals of the seven tones in all the genera, through systematic scales; the intervals of the phthoræ, by which the transposition and alteration of one echos to another, a genus to another and a scale to another are done. They transformed the musical characters from symbols into letters. In an admirable way, in short, they submitted to rules our music, that was up to then unruly, but very varied melodically.

Who will deny this when seeing that those who command this method are able to sing with absolute precision foreign mele, they have never heard before, seeing them notated in our musical neumes, and to write down in like manner those mele, just by hearing them? No one certainly. Deservedly therefore, these respectable men should be named **BENEFACTORS OF THE NATION!**¹

But besides this superb benefaction of the Three Teachers, Mister Chrysanthos in particular benefited the nation still more, writing, with philosophical thought this didactic and philological treatise on musical science.

Accept it now my most musical friends and satisfy the strong desire

you had for such a didactic work of your art. Learn from now on what is Rhythm, what is foot and meter² in music. Learn what is rhythmic emphasis and stop wondering on the meaning of such words. Learn the art of melopœia and the way to compose melodies with scientific thought, in order to be able to produce to your listeners joy, sadness, languidness and every other feeling among the passions of the soul, priding thus that your are perfect musicians, who know music well.

Many among our musicians consider themselves perfect musicians just because they achieved to master the measurement of time and the intervals of all the phthoræ (and indeed, he is to be praised any musician who achieves to master those two). This has not its cause to obstinate stubbornness or conceit, but to poor knowledge. These men, deprived of a didactic book on their art, are unable to progress beyond the point they reached through oral tradition.

The author divides his work in two parts, the didactic and the historic. In the didactic he speaks with great wisdom about musical theory and practice and gives undeniable and scientific evidence of all necessary knowledge on the subject. Speaking extensively on harmony in the last chapter, he closes the didactic part with an example notated in European notes and transcribed by him in our musical characters. He thus gives an exact idea to Greek musicians how harmony is written, of which the name only is left to us, whereas the thing itself is preserved by the Europeans.

In the historic part he enumerates the musicians that existed before and after the Flood and up to our days, mentioning many among the European musicians also. He divides them in three periods. In the first period he mentions all those that lived before the Flood and up to the time of the wise Solomon. In the second period, he mentions the Greek musicians, and introducing them with Apollo as the first inventor of music among the gods, and Amphion as its first inventor among humans, he reaches the Christian era mentioning in chronological order their story and whatever they invented or wrote in relation to music. In the third period he mentions the prominent church musicians. Beginning with St. Ioannes of Damascus, the earliest teacher and the originator of our ecclesiastical music, he reaches our age and names in chronological and alphabetical order all the teachers and inventors of

psalmodies distinguished by time.

In both the didactic and the historical parts, he introduces by way of extensive foot-notes, some standard literal treatises, of great value to every one –musician or not– and especially to many among our scholars, who still today ignore the very origins of our ecclesiastical music and consequently its continuation up to this time, a thing not little strange to them and to the Holy Society. At this point he ends the historical part with a short appendix, where he wisely advises musicians how to pursue their profession and what are the indispensable natural gifts they should possess.

I got this treatise twelve years ago, while studying in Constantinople, from its learned author and my respected teacher. Desiring since then its circulation to the public, by the author himself or by anyone else, and having failed with this greatest among my aims, I was able in the present year only to realize this work of public profit, with no little personal financial expenses and toil. The printer, speaking a foreign language and being unaccustomed in the editing of such a wearisome and complex book –owing to the variety of neumes in our music– needed daily, continuous and in many ways tiresome supervision. My efforts were not similar to other editors. In spite of all that, I did not take this into consideration, because I did not wish such a profitable and valuable treatise to remain hidden any longer, especially at this moment that our beloved MOTHERLAND resuscitates.

So, accept dearest compatriots the humble proofs of my willingness to serve the common interest. Be grateful to the author (who wishes, through me to see his efforts to bear fruit of equal value, in order that he might take pride at having been the first to cause the rivalry among those who, from now on, will decide to write on music with broader ideas) because he fulfilled his duty to the nation, and love favourably your friend, the editor.

Trieste 6 April 1832.

PANAGIOTES G. PELOPIDES
PELOPONNESIOS

1 When these three Teachers appeared as the inventors of the New Method in 1814, they had not such ranks. Mr. Chrysanthos was archimandrite and Mr. Gregorios was Lampadarios. In 1819 Chrysanthos reached the rank of the archbishop and Gregorios, conforming with the order of the Great Church, succeeded the late Manolakes the Protosaltes and became protosaltes himself. Mr Chourmouzos was given the rank of Chartophylax.

These men having submitted music to rules, reported subsequently to the Kænon of the Great Church. And a Holy Synod was specially held under the patriarch Cyril VII from Andri-anople, assembling the most distinguished men of the nation, to whom this new invention was exposed. The Synod being absolutely convinced with the strong logic and definite evidence of the art's regulation by the three teachers (because it was suspected at first that the teachers were trying to innovate holy psalmody), decided that Gregorios Lampadarios and Chourmouzos Chartophylax deliver the practice of ecclesiastical music, and the archimandrite Chrysanthos, its theory.

A school was founded to that end, in which many among the poor students were given free residence. Superintendents were appointed and the teachers' salaries determined. Circular letters were sent by the patriarch to high priests in every district calling anyone who wished to study the New Method free of charge, to go to Constantinople, where he would learn the method after two years' studies. Indeed, students of every class and age rushed from everywhere. Those that were sufficiently successful, went to different cities each, where they founded special schools and communicated with fidelity the gift they were bestowed.

Passing their examinations, the students that mastered the Method, were given a certificate signed by the three Teachers and the school's superintendents, which reads as follows:

"The undersigned teachers of this general school of music in Constantinople, announce to whom it may concern, that Panagiotes Pelopides, Peloponnesian, studying by us, was sufficiently successful and is able, wherever he goes, to teach and deliver both the practice of the new and regulated method of music taught by us, and of the methodical requirements for the introduction of its theory. Therefore, as a certificate and proof of the above the present document is edited by us the teachers, confirmed by the superintendents of this music school, as is the custom."

Constantinople 28 September 1818

There follow the signatures of the teachers and the superintendents.

The school operated until 1820. That year Mr Chrysanthos went to the district of Dirrachion to pasture the flock consigned to him. Mr Gregorios passed away and was succeeded by Mr. Costes Byzantios. Mr. Chourmouzos, left alone, turned to other useful occupations. Through his efforts, a music printing house was established in the Patriarchate, which published a good amount of mele, those absolutely necessary to the chanters, releasing many persons from the tiresome task of copying. Another graduate of the same school, Mr. Petros the Ephesian, a proficient musician residing now in Bucharest, offered a similar service.

2 The extremely clear and exact exposition of rhythm, the chronoi, the feet and the meters given by such a learned musician, will, no doubt, be of special avail to the students of the poetic works of our ancestors.



THE THEORY AND PRACTICE OF MUSIC

FIRST BOOK

CHAPTER I

How Music is Defined and Subdivided

§.1.

MUSIC IS A SCIENCE OF MELOS AND OF THINGS RELATED TO MELOS.¹

§.2. Melos is a series of notes succeeding each other, pleasant to hearing.²

§.3. Note is the musical attack of voice on one tension, that is, note is the production of sound either by a human mouth or by a pipe or by a string, that has one tension. Because a sound emitted by a string while it is stretched, is not called a note, because it occurs on many tensions. The sound attack, moreover, must be productive of melos since one single sound emitted by a string with no respect to melos is not called

¹ This is how Aristides defines music. Plato gives this definition: "Music is the imitation of the behaviour of virtuous or evil men". Nicephoros Blemmydes defines music thus: Music is knowledge of quantity defined in analogies. Hermes gives this definition "Music is the order of all things."

In early times the nature, the subject, the latitude and the parts of music were greatly debated upon; because to this name they gave a meaning much broader than we do. By the name of Music they did not only mean the song, the poetry, the dance, but also, the study of all sciences; the Athenians, therefore according to Hesychios, gave to all the arts the name of Music. This is why philomuses are called simply the philologers. The followers of Pythagoras and Plato said that everything in the world is music. The philosophers also say: Divine music, Cosmic music, Celestial music, Human music, Energetic music, Mental music, Representative music, Instrumental music, Vocal music, etc.

² According to Baccheios, melos is looseness and tension produced by musical notes.

note, but sounds emitted in vain. Notes are the subject or matter of music. Regardless of whether they are emitted by the human mouth, by wind, by string or percussive instruments, it is possible for good musicians to distinguish them precisely and discern them unfailingly. This is why Aristides said that music is a science.³

§.4. Melos is distinguished into what is called perfect and into imperfect or melody. Melody is a rhythmless interweaving of notes differing in height and lowness. Perfect melos though consists of melody, rhythm and text.⁴ Sacred melos is called psalmody.⁵

§.5. We are aware of the two constituents of melos: the quantity and the quality. The neumes therefore used to notate the melos are examined in two ways in order to include all their aspects.

§.6. Melizein is to invent melos and to adapt it to the words of a troparion or a verse etc. writing it with music characters.

§.7. One sings or chants unartistically when, although ignoring the rules of music, he utters many notes succeeding each other and pleases the listeners.⁶ One chants artistically when, knowing the rules of mu-

3 This is how Euclides defines the note. Baccheios defines it thus: "Note is an attack of sound on one musical tension".

4 Aristides, Book I, p. 28.

5 The name psalmody covers all ecclesiastical mele, the asma, the ode, the kontakion, the troparion, the apolytikion, the hypakoe, the oikos, the sticheron, the anoi, the makarismoi, the kœnonikon, the cheroubikon etc.

6 When we reflect on the satisfaction caused by music to one of the senses, namely to hearing, we see that it seldom happens an unartistically chanting person to be better liked than an artistically chanting one. It is though possible to find the same melos pleasing to some and to others not. This is especially true with listeners of different countries whose hearing is not accustomed to similar mele. Because indeed, every place has its own music, no matter whether abundant or not, which is liked by its natives only. Therefore, the more a musician is occupied with the knowledge and serious study of these diverse musical practices, the abler will he become to find varied and efficacious mele, since the music of every nation is rich in some efficacy, depending on the natural national inclinations. The actual French dances, for example, are graceful and light and instil the appetite for dancing with so much vitality as is sufficient to give rise to joy, but not to fatigue. The British dances, on the other hand, are exciting, being somewhat impetuous and instigate the dancer to running and dancing until he gets tired. As for the Polish dances, they are modest and serious. It is indeed more charming to walk like the Polish do than to dance like them.

7 Baccheios says: "A musician is one who knows about the concurrences of melodies."

In early times the musician had to be a philosopher, a poet and one among the first-order men, because music had to be able to move the soul of the listeners to such passions as required by the necessity of the times. This means that it should be able to "mould and modulate the souls of the youths towards perfection." Plut.

sic, articulates the melos designated by the neumes, as taught to do. Only the perfect musician, however, chants scientifically.⁷

§.8. Perfect is called the musician who is able to chant giving rise to pleasure or grief, enthusiasm or languor, or impetus, or courage or fear or anything else that has the power to move the soul to any passion. Moreover, he is able to compose, knowing precisely everything connected to melos; that is everything observed theoretically related to melos: notes, intervals, tones, echoi, systems rhythms, harmony, text etc.

§.9. Music is divided into theory and practice. Theory is the knowledge of the matter of music; i.e., to know the relation between low and high (by which the quantity of melos is learned), the relation between fast and slow plus the modes of generating the notes (by which the quality of melos is learned) and the knowledge of the power bestowed upon the neumes to write the melos.⁸

§.10. Practice is the faculty that puts into application the principles of theory; the ability, that is, to chant and notate music with the neumes, using the matter taught.

⁸ Porphyrios left us another division of music, saying that it is divided into rhythmic, for dance movements; metrics, for the conclusions and the number; instrumentation, for the application of instruments; poetics, for the harmony and meter of the verses; acting for the settings of the mimes; and harmonics, for singing.

One could also divide music into natural and imitative. Natural confines itself to the nature of notes alone and does not take into consideration the meanings nor does it produce any impressions on the soul; it only gives more or less agreeable feelings. Such is the music of the psalmody, that is of the *asmata*, the odes and of all those which are nothing more than conjunctions of melodious notes; in general, all melodious music. But imitative music, with vivid and intense twisting, or better said, with twisting that speaks, exposes all passions, paints all pictures, gives all the subjects, teaches the entire nature with its wise imitations and brings into the human heart feelings capable to stir it.

Aristides divides the entire of music into theory and practice. He then subdivides theory into natural and artificial. He shows that there are two parts in the natural: the arithmetic and the one that is synonymous to each of the genera; and three parts in the artificial: the harmonic, the rhythmic and the metric. Practice, on the other hand, is separated into the application of the above mentioned and into their presentation. Parts of the application are *Melopœia*, *rhythmopœia* and poetry; parts of the presentation are instrument playing, singing and acting.

The Europeans use to divide music into melody and harmony. They call melody the melos sung by one person only, whereas harmony, the melos sung by many persons, who do not all hold the same *ison* [tenor] but one holds the deepest, the other holds the higher and another, one still higher. As for rhythm, it is considered by them a limited study, which forms a special branch of music.

§.11. Theory is subdivided into the knowledge of note relationships and interval sizes, including the practice of the neumes by which these are notated, and in the comprehension of time flowing in the melos, including the corresponding practice. The Ancient Greeks named the first subdivision harmonics, because it teaches what harmony consists of, excavating up its foundations and discovering the ways in which the notes dispose the ear pleasingly. The second, they named rhythmic because it considers the notes in relation to time and includes the exposition of feet and rhythmic species, clearly stating which are the long and short, the slow and fast parts of time.

§.12. Practice is subdivided into melopœia –which does not only refer to the application of the various mele, but also to the making of one’s own mele pleasing to the listeners– and rhythmopœia, which gives the application of those rules that govern the adjustment of the meter of beats and the rhythms to the notes of the melody, in order to bring into completion the perfect melos.

§.13. The Ancient Greeks handed over to us three genera: the diatonic, the chromatic and the enharmonic. The diatonic is the most natural of the three, the oldest and the easiest. The chromatic is more artful, more recent and more difficult.⁹ They also handed over to us three systems, the diapason, the trochos and the triphony.

9 “Every melos occurring in the hermosmenon is either diatonic, chromatic or enharmonic. First and earliest should be considered the diatonic, because it is the one human nature meets first. Second is the chromatic. Third and most recent is the enharmonic because this is the last that hearing gets used to, indeed, after much effort.” Aristoxenos, *Harmonic Elements*, I.

“The most natural of the three genera is the diatonic because it may be sung by everybody, even by the uneducated. Most artful is the chromatic because it is sung by the educated only. Most precise is the enharmonic because it may only be transmitted among the most distinguished in music and is impossible to the many.” Aristides, 19.

CHAPTER II

On the Quantity of Melos

§.14.

THE QUANTITY OBSERVED IN MELOS IS ASCENT, descent and equality. In the diapason system of the diatonic genus, ascent is a series of notes, chanted with the following syllables in this order:

pa, bou, ga, di, ke zo, ne Pa.

§.15. Descent is a series of notes, chanted in the contrary to the ascent's order, thus:

Pa, ne, zo, ke, di, ga, bou, pa

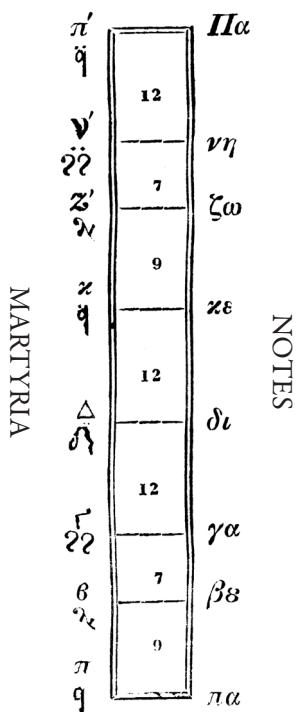
§.16. Ascent is called also rising and stretching and sharpness; descent is also called descending and relaxing and gravity; this series of notes is called a scale.

§.17. Equality is called a series of notes, chanted on the same syllable, neither sharpened or deepened, as,

papapa, or dididi, or zozozo

§.18. In order to sketch an example, in the form of a scale, the series of notes, sharpened and deepened, here is a diagram; we chant on it, starting by saying pa; after that we come to bou; from bou we go to ga; from ga, to di; from di, to ke; from ke, to zo; from zo to ne; and from ne to Pa. And then from Pa we return to ne: and from ne to zo; and so on until we reach the initial pa.

The diatonic scale on the Diapason system, where beginners learn the quantity of melody.



§.19. In order that a beginner chants this scale correctly, he must be taught by a Greek musician, because the musician of a different nation pronounces the notes differently, due to his native language's pronunciation patterns, and is not using the intervals of the tonoi as we do.

§.20. The letter a of the syllable pa means that pa is the first note of the scale; the letter b of the syllable bou mean that bou is the second note of the scale; and the rest correspondingly.

§.21. The Europeans represent their scale, that they also call Gamma, with the following syllables:

la, si, ut, re, mi, fa, sol, La ;

and start chanting it from ut, pronouncing some notes like we do and some differently.¹ If it is supposed that pa corresponds to la, then bou will correspond to si and so on respectively; If it is supposed that pa

corresponds to re, then bou will correspond to mi and the rest will correspond to the respective rest. The first supposition seems more convincing considering the instruments and what is more common in practice.

§.22. When it is required to ascend over the seven notes, then we chant more ascending notes, represented though with the same syllables, naming the eighth note Pa, the ninth Bou, and the rest as follows, Ga, Di, Ke...

§.23. When it is required to descend below the seven notes, then we chant more descending notes represented though with the same syllables, naming the eighth lower note pa, the ninth ne and the rest as follows, zo, ke, di, ga, bou, pa.

§.24. The ascent and the descent are called continuous when the series of notes is constructed by notes that succeed each other directly, as pabou gadi; or panezoke.

§.25. Overstepping are called the ascent and the descent when the series of notes is constructed from notes that succeed each other indirectly and the in-between notes are silenced, as pa di ne, or di bou zo.

§.26. Overstepping ascent and descent are diverse, but continuous are unique. That means that when two notes are continuous the quantity of their distance is 1; but when two notes are overstepping, the quantity of their distance might be 2 or 3 or 4 etc. So, the quantity of the overstepping ascent and descent is calculated in the following way: when two notes, pa and di, are given and the quantity of their distance is asked for, we look how many notes pa is away from di, on the scale, and we find three: pa, bou ga di; therefore the quantity pa di is three. Similarly, the quantity of pa zo is five; and the rest is examined correspondingly; only the note from which the other notes are counted is not included in the calculation.











¹ The differences of notes we elucidate in the third Book. The seven syllables of the notes were found by Gui from the acrostic of a hymn to St. John the Baptist. He used it in music the year 1024 A.D., that is 268 years after Ioannes Damascenos. It is however said that Gui used the six syllables only and the seventh was added later. This was accepted by all musicians in Europe, and with various additions made for the better, it is used up to our days.

CHAPTER III

On the Neumes of the Notes

§.27.

THE NEUMES THAT REPRESENT THE NOTES OF THE MELOS WRITTEN, that is the neumes by which the quantity of melody is written, are ten; they are written and named as follows:

Ison		0	} Ascending
Oligon		1	
Petaste		1	
Kentemata		1	
Kentema		2	
Hypsele		4	} Descending
Apostrophos		1	
Hyporrhoe		II	
Elaphron		2	
Chamele		4	

§.28. They are divided into ascending, descending and neutral. There is only one neutral, the Ison. There are five ascending, the Oligon, the Petaste, the Kentemata, the Kentema and the Hypsele. The four remaining are descending, the Apostrophos, the Hyporrhoe, the Elaphron and the Chamele.

§.29. The neumes themselves indicate the notes indefinitely, as each neume might stand for every note; from the preceding note, however, they indicate it definitely as will become clear in the following

§.30. The Ison shows neither ascent nor descent, but equality; this is what the zero standing after it denotes. It announces the previous note.

§.31. The Oligon, the Petaste and the Kentemata reveal the first note ascending from the previous. The Apostrophos shows the first

note descending from the previous; and this what number one standing after them denotes.

§.32. The Hyporrhoe shows two continuous notes descending from the previous; this is what number two standing after them denotes.

§.33. The Kentema shows the second note ascending from the previous by overstepping; the Elaphron shows the second note descending from the previous by overstepping; this is what number two standing after them denotes.

§.34. The Hypsele shows the fourth note ascending by overstepping; the Chamele shows the fourth note descending by overstepping; this is what number four standing after them denotes.

§.35. So, when writing a melody, for every equality we use the Ison; for every continuous ascent, the Oligon, the Kentemata and the Petaste; for every continuous descent, the Apostrophos and the Hyporrhoe.

§.36. Overstepping ascent and descent because they are done in many ways, are written with those same neumes, yet, not simple but composite; because composition, applied in a specific way, has the power to augment the quantity of the neumes.



CHAPTER IV


On Composition of Neumes


§.37.

COMPOSITION OF NEUMES IS TO INTERWEAVE THEM BEFITTINGLY, in order that they represent exactly the various quantities of the notes (§.26.). As the grammarians compose letters in varied ways to make syllables, similarly, the musicians connect the neumes between them in varied but definite ways, making up the compositions, by which the written melos is perfectly notated.

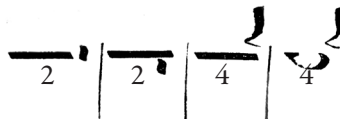
§.38. Certain among the ten neumes may be written uncomposed, that is by their own, and some cannot. Uncomposed may stand the Ison, the Oligon, the Petaste and the Chamele. The remaining neumes cannot be written alone; composed with others, they augment their quantity, according to the position they happen to get.

For example, the Kentema, composed with the Oligon, if it is after it, thus , it shows the second overstepping ascending note; if it is thus , the third.












§.39. The Oligon and the Petaste are subordinated by all the neumes, except the Kentemata; a subordinated neume loses its quantity and the quantity considered is that of the subordinating neume ; for example, when the Hypsele is put on the Oligon, thus , the quantity of the Oligon is lost and it is the quantity of the Hypsele that counts.

§.40. When the Elaphron subordinates the Apostrophos, thus , the two notes are pronounced continuously, and it is assumed that a Gorgon is over the first; it thus loses its power to descend by overstepping.

§.41. The Oligon and the Petaste are subordinated by the Kentema and the Hypsele in this position:



They are subordinated by the Ison and the descending neumes, when put over them, thus:

										
0	0	1	1	II	II	2	2	4	4	4

§.42. Here is a table, showing how composition augments the quantity of the neumes from one up to fifteen. You should know that the Arabic numbers denote overstepping and the Latin, continuity.

0	0	01	11	II	II	2	2		
21	3	4	41	5	51	6	61		
7	8	9	10	11	12	13	14		
15									
0	0	1	2	3	4	5	6	7	
8	9	10	11	12	13	14	15		
1	II	II	2	II	11	21	II1	II2	3
3	3	III	III	4	IV	0IV	5	6	
7	8	9	10	11	12	13	14	15	

CHAPTER V

On the Parallage of the Diatonic Genus

§.43.

PARALLAGE IS TO APPLY THE SYLLABLES OF THE NOTES ON THE NEUMES ENGRAVED, in such a way that when we see the neumes composed, to chant the notes; indeed, as much do the polysyllable notes diverge from the melos, that much do the monosyllable ones approach it; because when one learns to pronounce the musical work correctly in parallage, it suffices to change the syllables of the notes with the syllables of the words and he will be chanting it as melos.

§.44. For the act of the parallage you should know that before everything else in every melos stands a martyria, that shows what is the initial note in order to determine the subsequent notes of the melody, represented by the neumes. After the martyria stand the neumes of the notes, that indicate equality, or sharpness or gravity, those two, either continuous or overstepping. Whatever they denote, you should observe the quantity that the neumes have by themselves or by composition, and say the appropriate note. Lets show this in practice, first in continuity.²

§.45. In the parallage of the diatonic genus stands the martyria π α that shows that the note pa is the beginning; and since the by standing neume shows equality, pronounce the note pa on the Ison. Then on the two Apostrophoi, apply the two descending notes ne and zo; after that, on the three oligas, apply the three ascending notes ne pa bou; then again on the two Apostrophoi, the two descending notes pa ne; and so on do accordingly, until you reach the last note, pa.

The Parallage of the diatonic genus in continuity.

2. Below, we make a more extensive reference on the martyria.

π
 η
 pa ne zo ne | pa bou pa ne | pa bou ga bou
 pa bou ga di | ga bou ga di | ke di ga bou
 ga di ke zo | ke di ga di | ke zo ne zo
 ke di ke zo | ne pa ne zo | ke di ke zo
 ne zo ke di | ga bou pa bou | ga di ga bou
 ga di ke di | ga bou pa bou | ga di ga bou
 pa ne pa bou | ga bou pa ne | zo ne pa π
 η

§.46. Now, in overstepping. After saying the ison pa, say ga for the kentema, and bou for the apostrophos; for the kentema again, say di, and for the apostrophos, ga, etc according to the quantities that match, which you observe and obey to the end.

The Parallage of the diatonic genus by overstepping

π
 η
 pa ga bou di ga ke di zo ke ne zo pa pa

π'
 η'
 zo ne ke zo di ke ga di bou ga pa pa

π
 η
 di bou ke ga zo di ne ke pa pa

π'
 η'
 ke zo ga di pa pa π ke bou zo ga

π'
 η'
 ne di pa pa di ne ga zo bou ke

π
 η
 pa pa zo bou ne ga pa pa π' ga

π
 η
 ne bou zo pa pa ne bou pa pa bou

π
 η
 ne pa pa pa pa pa

§.47. So, if the composition of neumes shows the second, the third, or the fourth etc. note, you should find the corresponding natural note and pronounce this alone by overstepping. In the pronunciation of the overstepping notes great attention and enough practice is required, because the student has to acquire the facility of the following two: to recognize the fourth, the fifth etc. notes from the one given and to be able to easily pronounce the note found. Both are acquired by continuous exercise and long training.

§.48. Teachers train students in the parallage by writing under the neumes the syllables of the notes. Since this is done for facilita-

tion rather perfection of learning, they should erase the syllables of the notes and leave the neumes alone in order for the students to get used to seeing the neumes and pronouncing the notes.

§.49. Every melos given to a student to study, should be first learned to be chanted in parallage with certitude and then, instead of the syllables of the notes, to say the syllables of the melos' words.

CHAPTER VI

On Intervals

§.50.

INTERVAL IS THAT WHICH IS CONTAINED BETWEEN TWO NOTES DISSIMILAR IN SHARPNESS AND GRAVITY;³ meaning, that in the notes di ke, there is sharpness when chanted di ke, but gravity, when chanted ke di. These may be seen empirically as different lengths of a string. Because the string segment pressed on the pandouris⁴ in order to give note di is longer than that pressed in order to give ke. Therefore, if you imagine that you subtract from the longer segment, the one emitting ke, the shorter segment, the one emitting di, the remainder will be the interval of the two notes di ke.

§.51. In the continuous series of the eight notes of the diatonic scale

pa bou ga di ke zo ne Pa,

the musicians distinguish seven intervals: pa bou, bou ga, ga di, di ke, ke zo, zo ne, ne Pa; we name all these intervals tones; the ancient Greeks named five tones and two, the zo ne, bou ga, leimmata. Europeans name two, the ke zo, bou ga, semitones and the rest, tones.

§.52. Tone signifies two things: the position on the string that emits the note, and one of the seven intervals of the diatonic scale; regarding its first meaning it is defined by Euclid thus: tonos is a non

³ This definition is by Euclid. Aristoxenos defines the interval thus: "Interval is that which is bounded by two notes that have not the same tension." Aristides, thus: "Interval is magnitude of sound circumscribed by two notes." Gaudentios the philosopher, thus: "Interval is what is contained between two notes."

⁴ Among the melodic instruments the one that seems the most convenient in teaching and is considered the most suitable for a clear understanding of the tones, the semitones, and simply, of all the intervals, is the pandouris. It is also called pandoura and phandouros, and by us, tambura or tambur. It has two parts, the body and the neck. On the neck may be fretted the tones and semitones. It is three stringed and the first string gives the bombus [buzzing] of di; the second string gives ga below it; and the third, pa below that. The strings are over the neck without touching it and are stretched and loosened by the pegs. Pressed by the fingers of the left hand on the frets of the tones, and plucked by the right hand with a plectrum, they emit all the notes.

dimensional position of sound, susceptible to a system; regarding the second meaning it is distinguished in three kinds: major tone, minor tone and minimum tone.

§.53. The major tone's ratio to the minor tone is as 12 to 9; its ratio to the minimum tone is as 12 to 7. Therefore, the minor tone's ratio to the major is as 9 to 12; its ratio to the minimum tone, as 9 to 7; and consequently, the minimum tone's ratio to the major tone is as 7 to 12 and to the minor tone, as 7 to 9. So, if we suppose that the interval of the major tone equals 12 lines, the interval of the minor tone will be found equal to 9 lines and that of the minimum tone will be found equal to 7 lines.

§.54. Among the intervals of the diatonic scale

pa bou ga di ke zo ne Pa,

the interval pa bou is a minor tone; the interval bou ga is a minimum tone; the ga di is a major tone; the di ke is a major tone; the ke zo is a minor tone; the zo ne is a minimum tone; and the ne Pa, a major tone. So, major tones are three: ga di, di ke, ne Pa; minor tones are two: pa bou, ke zo; and minimum tones are two: bou ga and zo ne.

CHAPTER VII

On Symphony

§.55.

SYMPHONY ACCORDING TO EUCLID, is the simultaneous attack and blending of two notes that differ in sharpness and gravity. This means that symphony is when two notes fall at the same time, and although one is sharper than the other, they form a unity; that is, when they attack the sense of hearing, although they are distinguished from each other, they produce a feeling that is satisfactory in itself and pleasant, that is, a consonance.

§.56. The musicians, observing the effect of two notes that fall simultaneously, distinguish their combinations in four kinds:⁵ Homophonous, Symphonous, Paraphonous and Diaphonous. Homophonous are called two notes that do not differ to each other neither in sharpness nor in gravity when pronounced simultaneously, as pa pa.

Symphonous are called two notes, that are pronounced simultaneously and the melos of the deeper is the same with that of the sharper, and the melos of the sharper is the same with that of the deeper; in other words, when the pronunciation of two notes implies in a way their blending and their unity,⁶ as pa Pa.

Diaphonous are called two notes that are pronounced simultaneously and the melos of the deeper does not seem the same with that of the sharper, nor does the melos of the sharper seem to be the same with that of the deeper; when, that is, there appears no blending be-

⁵ One note, therefore, makes no symphony. The symphonies are according to Aristoxenos four: diatessaron, ne ga; diapente ne di; diapason ne Ne and every symphonous interval added to diapason.

⁶ This is what Gaudentios the philosopher says. Nicomachus the Pythagorean says: "the notes in order to be Symphonous, should, when played together, create for the sense of hearing short of one note, neither sharpness nor gravity being excessive and prominent; but appearing as if such a blending occurs, where not one of the elements blended prevails over the other, nor the power of each seems to prevail over the other, or to be lacking. Because if, when they are played, hearing perceives the grave note or the sharp note better, this is asymphonous."

"In symphonies, when the strings are plucked either simultaneously or successively, the sense grasps the consonance pleasantly," Plutarch

tween them when pronounced, like pa bou.

Paraphonous are called two notes lying in between the Symphonous and the Diaphonous; when played, they seem Symphonous, like ne bou. ♯

§.57. From the effect of note combinations, we know today of four symphonies:

the Diatrion,	bou di	19
the Diatessaron,	ne ga	28
the Diapente,	ne di	40
and the Diapason,	ne Ne ⁷	68

§.58. These four symphonies are confirmed with the following trial. When the thick string of some sufficiently long four-stringed instrument is plucked, we hear the buzzing⁸, its octave and more sharper notes in the following succession:

1	½	⅓	¼	⅕	⅙	⅐	♯
ga	Ga	ne	Ga	ke	Ne	bou	

Those notes, distinguished on the thick and long string, exist on every other string, but their symphonies are slightly perceptible.

⁷ The Diatrion was not classified by the ancients among the symphoniae. To the remaining symphoniae they gave the following numerical ratios, as reported by Gaudentios: “The numerical ratios found for the symphoniae and in every possible way tested, are: of the diatessaron, epitritos, as 24 to 18; of the diapente, sesquialteran, as 24 to 16; of the diapason, double, as 24 to 12; of the diapason plus diatessaron, diplasiepidimæros, as 24 to 9; of the bisdiapason, quadruple, as 24 to 6. It is said that it was Pythagoras who initiated those discoveries.”

Manuel Bryennios reports the following: All the notes that have a double and quadruple ratio, are generally called symphonous, but specifically, antiphonous. The notes that have a sesquialteran and triple ratio, are generally called symphonous, but specifically, paraphonous. The notes that have an epitritos and diplasiepiditritos ratio, are, both generally and specifically, called symphonous.

⁸ Buzzing, according to Suidas, is called the sound of bees; it was also called buzzing a note due to its gravity; a melos is also called buzzing, the one insisting on deep notes. Gerasenos Nicomachus also makes up the word buzzer [bombykesteron]: “On either extreme of the bisdiapason,” he says, “the voice is emitted with difficulty, appearing like hiccup at the netocides [higher extreme] and like coughing at the buzzer end.” See also (§.99.)

CHAPTER VIII

On the Diapason System

§.59.

SYSTEM ACCORDING TO EUCLID IS WHAT IS CONTAINED IN MORE THAN ONE INTERVALS. There are three systems; the Octachord, the Pentachord and the Tetrachord. The Octachord, called also Diapason, contains seven intervals, that for us are tones, but for the ancient Greeks, five were tones, and two leimmata. The seven intervals are delimited by eight notes,

pa bou ga, di ke zo ne Pa.

§.60. When the seven intervals of the diapason are doubled, pa bou ga di ke zo ne Pa Bou Ga Di Ke Zo Ne Pa, the first seven intervals belong to the diapason system, the seven next belong to the bisdiapason; similarly, when they are tripled, the third group of seven intervals belongs to the trisdiapason.

§.61. Pa is the end of the diapason and the beginning of the bisdiapason, where it holds the position held by pa in diapason for the measurement of the interval pa bou. In the diapason, Pa is used for the measurement of the interval ne Pa.

§.62. Because of the symphony that the notes of the diapason form with the notes of the bisdiapason and the trisdiapason, and because of the similarity of the intervals, we represent the notes of the diapason and the bisdiapason and the trisdiapason with the same syllables. And the first note of the diapason is symphonous with the first note of the bisdiapason and of the trisdiapason, the second is symphonous to the second, and so on.

§.63. The intervals of the notes of the diapason have to each other the ratios exposed (§.51 and 53). Therefore, the tones of the diapason

⁹ Euclid calls canon the instrument named today monochord. This was simply one chord stretched on a board, whose length was divided in such a way that all the intervals were easily shown.

Claudius Ptolemaeos and Manuel Byrennios speak extensively on the section of the canon and its division on the three genera and their species.

system are fretted on the canon or on the pandouris the following way.⁹

As the string is suspended on two bridges, one on the neck, the other on the body, write Di on the former and 0 on the latter, and divide in nine parts the interval Di 0, and make a fret on the first part from Di, and write ke.

Then divide into twelve parts the interval from ke to 0 and making similarly the fret, write zo.

Then divide into four the interval Di 0 and making the fret on the first part from Di, write ne.¹⁰

Then divide into nine parts the interval ne 0 and making the fret similarly, write pa.

Then divide into twelve parts the interval pa 0, and making the fret write bou.

Finally, divide into two parts the interval Di 0 and after you have made the fret and written di, divide into eight the interval di Di, make the fret and write ga. This way, you have the tones of the diapason fretted on the pandouris.

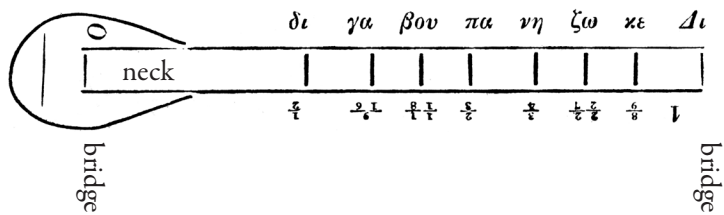
§.64. The intervals of the bisdiapason's tones are fretted on the canon, by taking half the intervals of the diapason's tones. This means that the tone di ke of the bisdiapason requires an interval equal to half the tone Di ke of the diapason; accordingly the tone ke zo of the bisdiapason requires an interval equal to half the tone ke zo of the diapason; and accordingly for the remaining tones. The intervals of the trisdiapason's tones are fretted by taking half the intervals of the bisdiapason tones; and the tetrakis-diapason, in the analogous way.

§.65. The ratios to the entire string of the various lengths of the string, whereupon the frets of the tones are made and where from is emitted every note, are expressed numerically thus:

10 It is hereby shown that the intervals di ke, ke zo, zo ne have the ratios 12, 9, 7: as di ke : ke zo :: $\frac{1}{9} : \frac{1}{12}$, this is, $\frac{4}{36} : \frac{3}{36}$. Consequently, $\frac{4}{36} : 12 :: \frac{3}{36} : x$, and $4 : 12 . 36 :: 3 : 36x$. Therefore, $4.36x = 12 . 36 . 3$. therefore $x = 9$.

When it is assumed that the entire string equals 27, the fractions $\frac{27}{27}$ which is 1, refers to Di; the $\frac{24}{27}$, which is $\frac{8}{9}$, will refer to ke; the $\frac{22}{27}$, to zo, and the $\frac{20}{27}$ to ne. Therefore, the $\frac{7}{108}$ will refer to the interval zo-ne, because $\frac{1}{4} - \frac{3}{27} = \frac{27}{108} - \frac{36}{108} = \frac{7}{108}$. Whence, since di-ke : zo-ne :: $\frac{1}{9} : \frac{7}{108}$, then $\frac{1}{9} : 12 :: 7/12.9 : x$. Therefore $\frac{1}{9}x = 12.7/12.9 = \frac{7}{9}$ and $x = 7.9/9/1 = \frac{63}{9} = 7$.

1 $\frac{9}{16}$ $\frac{22}{27}$ $\frac{3}{4}$ $\frac{2}{3}$ $\frac{11}{18}$ $\frac{5}{16}$ $\frac{1}{2}$
 Di ke zo ne pa bou ga di



CHAPTER IX

On the Trochos [Wheel]

§.66.

THE PENTACHORD, which is also called trochos, contains four intervals, that to us are tones; to the ancient Greeks three were tones and one, leimma. These four intervals are delimited by five notes

pa bou ga di Pa, according to us; according to the ancients
te ta tē to Te.

The ecclesiastical musicians represented these four interval, in ascent with the following four words annanes, neanes, nana, agia;¹¹ in descent, with the following, which are similar, aanes, necheanes, aneanes, neagie. Those eight notes are called the notes of trochos.

§.67. The ecclesiastical musicians call trochos a method, by which they ascend and descend diatonically the intervals of the pentachord, with the eight words, or polysyllables mentioned.¹²

§.68. The trochos is constructed if in any circle four diameters intersect each other; and on the end of one is written $\overset{\zeta}{\text{q}}$; and on the end of the next, $\overline{\text{a}}\text{w}$; and on the end of the following, $\overset{\zeta}{\text{q}}\overset{\zeta}{\text{q}}$; and on the end of the fourth, $\overset{\zeta}{\text{q}}$, and then, on the opposite end of the first diameter is written $\overset{\zeta}{\text{q}}$; of the second, $\overset{\zeta}{\text{q}}$; of the third, $\overset{\zeta}{\text{q}}\text{ros}$; of the fourth, $\overline{\text{a}}\text{w}$.

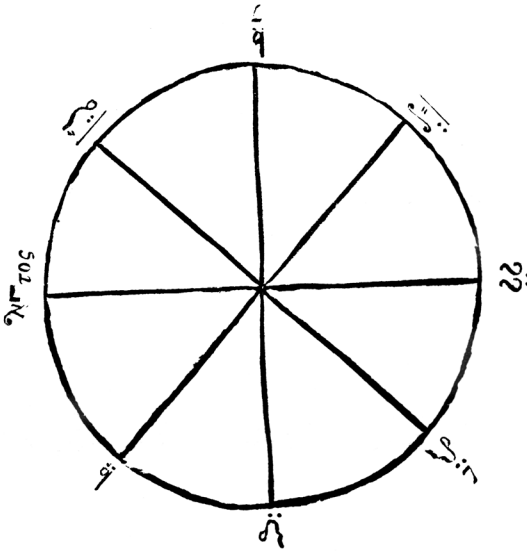
11 On the polysyllable notes we are precisely informed in the parallage of the maistor Ioannes Cucuzeles; on the notes te ta tē to Aristides speaks more extensively and explains the choice of the vowels e a ē o and the preference of t from all the consonants.

The annanes derives from *anna anes*, that is *anna anes* [king let]; the neane, from *vai anes*; the nana from *anna anna*; and the agia from *agie* [saint]; the entire, *anna anes, vai anes, anna anes, agie*, being a wish addressed to God.

Constantinos Porphyrogenetos says that the nana means Θεέ Θεέ [God God] and the agia, σῶσον δὴ [do save]. He also makes up a word composed from those two, nanaia.

The Arabs use as notes the following words: tanini, tanini, bakya, tanini, tanini, tanini bakya, that have much resemblance to our notes; so, either they derived their notes from ours, or we from theirs.

12 The trochos under discussion is illustrated in all the old Anastasimataria; because it was before everything else taught to beginners and they learned on it the ascent and the descent of notes and most mele of ecclesiastical music were composed on it, and the eight echoi of the church were organized on it.



Here is also the melos of those notes:

a nna nes | ne a nes | na

na a gi a a nes ne che a nes ^{ἄτος} A

ne a nes ne a gi e A nna nes ⁽¹³⁾

13 In the parallage we represent the monosyllable notes with one neume and one neume represents one note. But in polysyllable notes, we do not observe one sharpness or gravity, that each note emits, by one attack of the voice as defined (§.3.), but many. Therefore, they are not written with one neume, but many. For this reason, monosyllable notes were considered more useful than polysyllable notes for the beginners, who should be instructed them and learn them in such a way that they get impressed in their imagination as a firm foundation. And after they are sufficiently trained in them, they might thereafter be taught the polysyllables, that are useful for a lot of things of which we talk later, but also in order to preserve the Greek pronunciation of the monosyllables, and not confuse it with the pronunciation of the Europeans. If the pronunciation of our monosyllables is bound with that of the polysyllables, it becomes more permanent.

§.69. We chant those notes on the trochos, starting from $\overset{\curvearrowright}{\text{q}}$ and pronouncing it annanes, with the melos represented by its neumes; then coming upon $\overline{\text{e}}$ we pronounce it neanes with its melos; then coming upon ?? we pronounce it nana with its melos; then we come on $\overset{\curvearrowright}{\text{f}}$, and pronounce it agia with its melos; and turning to the other end, we find $\overline{\text{a}}$ and pronounce it aanes with its melos; then going to $\text{?}\tau\omicron\varsigma$ we pronounce it necheanes with its melos; going then to q we pronounce it aneanes with its melos; arriving on f we pronounce it neagie with its melos and from this point, we turn to the other end, and finding $\overset{\curvearrowright}{\text{q}}$, we pronounce it annanes as said before.

§.70. This way, we chant four notes in ascent and four in descent. But if we wish to ascend more, then, coming to $\overset{\curvearrowright}{\text{f}}$, we do not turn to $\overline{\text{a}}$, but to $\overset{\curvearrowright}{\text{q}}$ and advance. And if we wish to descend more, when we arrive to f , we do not turn to $\overset{\curvearrowright}{\text{q}}$, but to $\overline{\text{a}}$ and go on to this direction. If we want to ascend or to descend less than four notes, wherever we happen to be, we turn to the opposite end.

§.71. If I wish to ascend on the trochos, from $\overset{\curvearrowright}{\text{q}}$ or from $\overline{\text{e}}$ I go to $\overline{\text{e}}$, from $\text{?}\tau\omicron\varsigma$ or from ?? I go to $\overline{\text{a}}$, and from $\overset{\curvearrowright}{\text{f}}$ or from $\overset{\curvearrowright}{\text{f}}$ I go to f . If I wish to descend on the trochos, from $\overset{\curvearrowright}{\text{q}}$ or $\overline{\text{a}}$ I go to $\text{?}\tau\omicron\varsigma$, from $\overset{\curvearrowright}{\text{f}}$ or f I go to $\overline{\text{a}}$, from $\overset{\curvearrowright}{\text{q}}$ or q I go to f , and from $\overline{\text{e}}$, or $\text{?}\tau\omicron\varsigma$ I go to q .

§.72. Which of those eight notes of the trochos has the priority? Which comes second, and is it expected to receive its onset from the first? Well, generally speaking, no one, because no one exists without an interval, which implies another note or tone; specifically though, all of them because every one of them may become first and second etc. depending on one's needs.

§.73. So, pa in ascent is said annanes and in descent aneanes; bou, in ascent, neanes, in descent, necheanes; ga, in ascent, nana, in descent, aanes; di, in ascent, agia, in descent, neagie, etc. as seen in this plate.

ta	fa	$\overline{\text{neanes}}$			zo	z'
te	mi	$\overline{\text{annanes}}$	aneanes	$\overline{\text{ä}}$	ke	z''
to	re	$\overline{\text{agia}}$	neagie	$\overline{\text{ä}}$	di	Δ
tē	ut	$\overline{\text{nana}}$	aanes	$\overline{\text{ä}}$	ga	Γ
ta	si	$\overline{\text{neanes}}$	necheane	$\overline{\text{ä}}$	bou	β
te	la	$\overline{\text{annanes}}$	aneanes	$\overline{\text{ä}}$	pa	π
to	sol	$\overline{\text{agia}}$	neagie	$\overline{\text{ä}}$	ne	ν
tē	fa		aanes	$\overline{\text{ä}}$	zo	z

§.74. Annanes ascends a major tone; neanes, a minor tone higher from annanes; nana is higher from neanes a minimum tone and agia is higher from nana a major tone. So the tones of the trochos are fretted in this way on the canon or the pandouris.

Since the string is suspended on two bridges, one on the neck, the other on the body, write $\overline{\text{ä}}$ on the former and 0 on the latter; and divide into nine parts the interval $\overline{\text{ä}}$ 0 and make the fret on the first part after $\overline{\text{ä}}$, and write $\overline{\text{ä}}$.

Then divide into twelve parts the interval $\overline{\text{ä}}$ 0 and making the fret in the same way, write $\overline{\text{ä}}$.

Then divide into four parts the interval $\overline{\text{ä}}$ 0, that is the entire length of the string, and making the fret as before, write $\overline{\text{ä}}$.

Then, divide into three parts the above length, $\overline{\text{ä}}$ 0, and making the fret as before, write $\overline{\text{ä}}$; this way you have the tones of the trochos fretted on the pandouris.

§.75. If you wish to have the tones of the second and third pentachords, you substitute $\overline{\text{ä}}$ with $\overline{\text{ä}}$, and repeat what is said above, and so on.

§.76. The ratios to the entire string of its various lengths, delimited by the frets of the trochos, are expressed numerically thus:

1	$\frac{8}{9}$	$\frac{22}{27}$	$\frac{3}{4}$	$\frac{2}{3}$
δ̣	θ̣	ϑ̣ _{τρος}	ϖ̣	ζ̣

CHAPTER X

On Certain Peculiarities of the Notes of the Trochos

§.77.

IN THE FOUR INTERVALS OF THE NOTES

$\text{ḡ} \quad \overset{\text{L}}{\text{Ḥ}}\tau\omicron\varsigma \quad \text{ḡḡ} \quad \overset{\text{L}}{\text{Ḥ}} \quad \overset{\text{L}}{\text{Ḥ}}$

two are considered major tones, $\text{ḡḡ} \overset{\text{L}}{\text{Ḥ}} \overset{\text{L}}{\text{Ḥ}} \overset{\text{L}}{\text{Ḥ}}$; one, $\overset{\text{L}}{\text{Ḥ}} \overset{\text{L}}{\text{Ḥ}} \tau\omicron\varsigma$, minor, and one, $\overset{\text{L}}{\text{Ḥ}}\tau\omicron\varsigma \text{ ḡḡ}$, minimum. So if it is required to descend one or two major tones, we chant the three notes $\overset{\text{L}}{\text{Ḥ}} \overset{\text{L}}{\text{Ḥ}} \text{ḡḡ}$, annanes, neagnes, aanes; and $\overset{\text{L}}{\text{Ḥ}}$ shows one major tone, whereas ḡḡ shows two major tones. If its required to descend two tones, one major and one minimum, we chant the three notes $\overset{\text{L}}{\text{Ḥ}} \text{ḡḡ} \overset{\text{L}}{\text{Ḥ}}\tau\omicron\varsigma$, agia, aanes, necheanes; and ḡḡ shows the major tone, $\overset{\text{L}}{\text{Ḥ}}\tau\omicron\varsigma$ shows the minimum. If it is required to descend three tones, a major, a minimum and a minor, we chant the four notes $\overset{\text{L}}{\text{Ḥ}} \text{ḡḡ} \overset{\text{L}}{\text{Ḥ}}\tau\omicron\varsigma \text{ ḡ}$, agia, aanes, necheanes, aneanes; and thus the problem is solved. The same, but inverted, are observed also in ascent.

§.78. When it is required to ascend one major tone, we chant the two notes agia, annanes, $\overset{\text{L}}{\text{Ḥ}} \overset{\text{L}}{\text{Ḥ}}$, and $\overset{\text{L}}{\text{Ḥ}}$ shows the major tone. When it is required to ascend three or four major tones successively, we chant $\overset{\text{L}}{\text{Ḥ}} \overset{\text{L}}{\text{Ḥ}}$ as follows:

agia, annanes, annanes, annanes, annanes;

where, the first annanes is supposedly agia to the second, and so does the second to the third, and so on. This way, we may ascend as many major tones we are asked to.

§.79. When it is required to ascend from a given tone two tones, a major and a minor, then, supposing that the one given is agia, we chant

the three notes $\overset{\curvearrowright}{\text{ḥ}} \overset{\curvearrowright}{\text{q}} \overset{\curvearrowright}{\text{e}}$; and $\overset{\curvearrowright}{\text{q}}$ gives the major tone, whereas $\overset{\curvearrowright}{\text{e}}$, the minor. When it is required to ascend one minor tone, then, supposing that the one given is annanes, we chant $\overset{\curvearrowright}{\text{e}}$ with its melos and the problem is solved. If it is required to ascend two or three successive minor tones, we chant $\overset{\curvearrowright}{\text{q}} \overset{\curvearrowright}{\text{e}}$, as follows:

annanes, neanes, neanes, neanes;

where, the first neanes is supposedly annanes to the second; that means that the syllable ne descends a major tone, a descends a major tone and nes a minor tone; and the second neanes is supposedly annanes to the third, and so on. So we are able to ascend as many minor tones too it is required.

§.80. When it is required to ascend from a given tone three tones, a major, a minor and a minimum, we chant the four notes $\overset{\curvearrowright}{\text{ḥ}} \overset{\curvearrowright}{\text{q}} \overset{\curvearrowright}{\text{e}} \overset{\curvearrowright}{\text{ḥ}}$ and give the solution. When one minimum tone is required, then, in ascent, supposing that the tone given is $\overset{\curvearrowright}{\text{e}}$, we chant $\overset{\curvearrowright}{\text{ḥ}}$ with its melos; in descent, supposing that the given tone is $\overset{\curvearrowright}{\text{ḥ}}$, we chant $\overset{\curvearrowright}{\text{e}}$ with its melos and thus the minimum tone is shown. When it is required to ascend two or three successive minimum tones, we chant $\overset{\curvearrowright}{\text{e}} \overset{\curvearrowright}{\text{ḥ}}$, thus: neanes, nana, nana, nana, nana; where the first nana is supposedly neanes to the second and so is the second to the third.

In the trochos four interval are observed (§.66.). When doubled or tripled, like that

$\overset{\curvearrowright}{\text{q}} \overset{\curvearrowright}{\text{e}} \overset{\curvearrowright}{\text{ḥ}} \overset{\curvearrowright}{\text{ḥ}} \overset{\curvearrowright}{\text{q}} \overset{\curvearrowright}{\text{e}} \overset{\curvearrowright}{\text{ḥ}} \overset{\curvearrowright}{\text{ḥ}} \overset{\curvearrowright}{\text{q}} \overset{\curvearrowright}{\text{e}} \overset{\curvearrowright}{\text{ḥ}} \overset{\curvearrowright}{\text{ḥ}} \overset{\curvearrowright}{\text{q}}$

the first $\overset{\curvearrowright}{\text{q}}$ does not represent an interval by itself from some deeper fore-standing note; it becomes representative of an interval for $\overset{\curvearrowright}{\text{e}}$; but the second $\overset{\curvearrowright}{\text{q}}$ is the end of the first pentachord and the beginning of the second; it represents both an interval for itself, from the previous $\overset{\curvearrowright}{\text{ḥ}}$ and, from itself, an interval for $\overset{\curvearrowright}{\text{e}}$. These peculiarities of the second $\overset{\curvearrowright}{\text{q}}$ have also the third $\overset{\curvearrowright}{\text{q}}$ and the fourth $\overset{\curvearrowright}{\text{q}}$.

§.81. Because of the diapente symphony (§.57.) and the similar-

ity of the pentachords' intervals we represent with the same words the notes of the pentachords, no matter how many they are; the first note of the first pentachord is symphonous to the first note of the second and the third and the fourth pentachords; its second note, to their second notes and so on. So, in the diapason system symphonous to the first note is the eight and the fifteenth (§.62); but in the trochos symphonous to the first note is the fifth and the ninth and the rest correspondingly.

§.82. When $\overset{\curvearrowright}{\text{q}}$ is Mese, then proslambanomenos on the trochos is necheanes, the martyria of which is $\overset{\curvearrowright}{\text{e}}$, while on the diapason, ke, the martyria of which is $\overset{\curvearrowright}{\text{q}}$. In this case, one note receives two martyria, $\overset{\curvearrowright}{\text{e}}$ $\overset{\curvearrowright}{\text{q}}$. These were combined to one, the A , used when descending from $\overset{\curvearrowright}{\text{q}}$, supposedly $\overset{\curvearrowright}{\text{z}}$, that is as if from nana.

§.83. When mese is $\overset{\curvearrowright}{\text{z}}$, then proslambanomenos on the trochos is aneanes, that has the martyria $\overset{\curvearrowright}{\text{q}}$, on the diapason, the di, that has the martyria $\overset{\curvearrowright}{\text{z}}$. So, these were combined into the martyria $\overset{\curvearrowright}{\text{q}}$, used as the one above, that is, when they descend from $\overset{\curvearrowright}{\text{z}}$ as if from $\overset{\curvearrowright}{\text{z}}$, so that $\overset{\curvearrowright}{\text{q}}$ shows the melos of neagie.

§.84. When proslambanomenos is $\overset{\curvearrowright}{\text{z}}$, then mese will be on the trochos nana, that has the martyria $\overset{\curvearrowright}{\text{z}}$; on the diapason, mese will be Ne. So, two notes, ga and Ne have the martyria $\overset{\curvearrowright}{\text{z}}$; in order to distinguish them, ga gets the martyria $\overset{\curvearrowright}{\text{z}}$, and Ne the martyria $\overset{\curvearrowright}{\text{z}}$.

§.85. When proslambanomenos is $\overset{\curvearrowright}{\text{q}}$, the mese on the trochos is agia, and on the diapason, Pa. In order to distinguish the martyria of di from that of Pa, di gets the martyria $\overset{\curvearrowright}{\text{z}}$ and Pa, $\overset{\curvearrowright}{\text{z}}$. Conclusively, all the martyriai of the diatonic genus amount to twelve,

$\overset{\curvearrowright}{\text{z}}$ A $\overset{\curvearrowright}{\text{e}}$ $\overset{\curvearrowright}{\text{q}}$ $\overset{\curvearrowright}{\text{z}}$ $\overset{\curvearrowright}{\text{q}}$ $\overset{\curvearrowright}{\text{z}}$ $\overset{\curvearrowright}{\text{z}}$ $\overset{\curvearrowright}{\text{q}}$ $\overset{\curvearrowright}{\text{e}}$ $\overset{\curvearrowright}{\text{z}}$ $\overset{\curvearrowright}{\text{z}}$

di ke zo ne pa bou ga Di Ke Zo Ne Pa

§.86. When the melos descends down to $\overset{\curvearrowright}{\text{z}}$ and ascends up to $\overset{\curvearrowright}{\text{z}}$ and does not go beyond those limits, it makes no difference whatsoever whether the parallage is applied on the trochos or on the diapason

system. But when it descends beyond $\text{ḥ}^{\text{ḥ}}$ or ascends above $\text{ḥ}^{\text{ḥ}}$, then distinctions should be made

Because in the notes $\text{ḥ}^{\text{ḥ}}$ $\text{ḥ}^{\text{ḥ}}$ $\text{ḥ}^{\text{ḥ}}$ $\text{ḥ}^{\text{ḥ}}$, if the parallage is applied on the trochos, the first interval is a major tone, the second minimum and the third, minor. But if its is applied on the diapason system, in which case the martyriæ are $\text{ḥ}^{\text{ḥ}}$ $\text{ḥ}^{\text{ḥ}}$ $\text{ḥ}^{\text{ḥ}}$ $\text{ḥ}^{\text{ḥ}}$, the first interval is a

minimum tone, the second minor and the third, major. For this reason the $\text{ḥ}^{\text{ḥ}}$ of the trochos was named barys.

CHAPTER XI

On Triphony

§.87.

THE TETRACHORD, called also triphony¹⁴ contains three intervals, that to us are tones, but to the Ancients the two were tones and the one leimma. These three intervals are delimited by four notes

ne pa bou Ne
 ڤ ڤ ڤ ڤ ڤ ڤ

§.88. Triphony was chanted in ascent thus: neagie, annanes, neanes, nana, annanes, neanes, nana, annanes and so on repeating the same words and leaving out agia. In descent, it was chanted with these words of notes, nana, necheanes, aneanes, neagie, necheanes, aneanes, neagie and so on repeating the same notes and leaving out aanes. So, one note representing a major tone in trochos, is left out in triphony both in ascent and descent. Therefore it could be said that annanes is emitted in ascent and neagie is omitted in descent.

§.89. Descending triphony of ڤ ڤ is ڤ ڤ; of ڤ ڤ, ڤ ڤ, not the barys; of ڤ, ڤ and of ڤ, ڤ. Ascending triphony of ڤ is ڤ, of ڤ, ڤ and so on.

§.90. In this system symphonous to the first note are the fourth, the seventh, the tenth and the thirteenth; symphonous to the second note are [the fifth] the eighth, the eleventh and the fourteenth; symphonous to the third note are the sixth, the ninth, the twelfth and the fifteenth.

§.91. When we conjoin the pentachord with the tetrachord, in such a way that the last note of the pentachord is the beginning of the tetrachord, we derive the diapason system

ڤ ڤ ڤ ڤ ڤ ڤ ڤ ڤ ڤ ڤ
 pa bou ga di, ke zo ne, Ke Zo Ne.

¹⁴ The octachord system is called by the Ecclesiastical musicians heptaphony; the pentachord, tetraphony and trochos; the tetrachord system, triphony.

Here, the fifth note is symphonous with the eighth, the sixth with the ninth and the seventh with the tenth, in triphony. But since the notes ke zo ne are symphonous with pa bou ga in the Trochos, it follows that the Ke Zo Ne are symphonous with pa bou ga; The diapason therefore is constructed thus:

$\overset{\curvearrowright}{\text{q}} \overset{\curvearrowright}{\text{K}}\text{ros} \overset{\curvearrowright}{\text{z}}\overset{\curvearrowright}{\text{z}} \overset{\curvearrowright}{\text{r}} \overset{\curvearrowright}{\text{q}} \overset{\curvearrowright}{\text{z}}\overset{\curvearrowright}{\text{z}} \overset{\curvearrowright}{\text{q}} \overset{\curvearrowright}{\text{z}}\overset{\curvearrowright}{\text{z}} \overset{\curvearrowright}{\text{z}}\overset{\curvearrowright}{\text{z}}$
 pa bou ga di, ke zo ne Pa Bou Ga

If we apply the same in descent, we have as follows :

$\overset{\curvearrowright}{\text{q}} \overset{\curvearrowright}{\text{r}} \overset{\curvearrowright}{\text{z}}\overset{\curvearrowright}{\text{z}} \overset{\curvearrowright}{\text{K}}\text{ros} \overset{\curvearrowright}{\text{q}} \overset{\curvearrowright}{\text{z}} \overset{\curvearrowright}{\text{z}} \overset{\curvearrowright}{\text{q}} \overset{\curvearrowright}{\text{r}} \overset{\curvearrowright}{\text{z}}\overset{\curvearrowright}{\text{z}}$
 ke di ga bou, pa ne zo, Pa Ne Zo.

§.92. All these were confirmed by Ioannes Plousiadenos, and because he found that they contributed to many aspects of music, he composed an instructive treatise that he named Trochos of Ioannes Plousiadenos, which is the source of the most commonly used series of notes, indicated with these martyriæ:

$\overset{\curvearrowright}{\text{r}} \overset{\curvearrowright}{\text{z}} \overset{\curvearrowright}{\text{z}} \overset{\curvearrowright}{\text{q}} \overset{\curvearrowright}{\text{K}}\text{ros} \overset{\curvearrowright}{\text{z}}\overset{\curvearrowright}{\text{z}} \overset{\curvearrowright}{\text{r}} \overset{\curvearrowright}{\text{q}} \overset{\curvearrowright}{\text{z}}\overset{\curvearrowright}{\text{z}} \overset{\curvearrowright}{\text{z}}\overset{\curvearrowright}{\text{z}}$
 di ke zo ne pa bou ga Di Ke Zo Ne
 $\overset{\curvearrowright}{\text{q}} \overset{\curvearrowright}{\text{z}}\overset{\curvearrowright}{\text{z}} \overset{\curvearrowright}{\text{r}} \overset{\curvearrowright}{\text{z}}\overset{\curvearrowright}{\text{z}}$
 Pa Bou Ga di ke

Here, after neagie we find in descent necheanes and not aanes; because $\overset{\curvearrowright}{\text{z}}\overset{\curvearrowright}{\text{z}}$ is not barys; also, after nana we find in ascent annanes and not agia. This entire series of notes is composed of triphony, from $\overset{\curvearrowright}{\text{q}}$ to $\overset{\curvearrowright}{\text{r}}$; of trochos, from $\overset{\curvearrowright}{\text{r}}$ to $\overset{\curvearrowright}{\text{r}}$; of triphony again, from $\overset{\curvearrowright}{\text{q}}$ to $\overset{\curvearrowright}{\text{q}}$ and of another trochos, from $\overset{\curvearrowright}{\text{q}}$ to $\overset{\curvearrowright}{\text{q}}$.

§.93. In the notes of triphony, $\overset{\curvearrowright}{\text{r}} \overset{\curvearrowright}{\text{q}} \overset{\curvearrowright}{\text{K}}\text{ros} \overset{\curvearrowright}{\text{z}}\overset{\curvearrowright}{\text{z}}$, three intervals are observed, a major tone, a minor tone and a minimum tone. The tones of thriphony are fretted on the canon or the pandpouris, in the following way.

On the neck of the pandpouris, where is the bridge, write $\overset{\curvearrowright}{\text{r}}$ and on the body, where is the other bridge, write 0; and divided into nine

parts the interval $\overset{\sim}{\text{ج}} 0$, and make a fret on the first part from $\overset{\sim}{\text{ج}}$ and write $\overset{\sim}{\text{ق}}$.

Then divide into twelve parts the interval $\overset{\sim}{\text{ق}} 0$ and making a fret as before, write $\overset{\sim}{\text{ك}}\overset{\sim}{\text{ت}}\overset{\sim}{\text{و}}\overset{\sim}{\text{س}}$.

After that, divide into four parts the entire length of the string, from $\overset{\sim}{\text{ج}}$ to 0 and making the fret the same way, write $\overset{\sim}{\text{ز}}$; thus you have the tones of the triphony fretted on the pandpouris.

§.94. If you wish to fret on the pandpouris the tones of the second and the third tetrachord, you suppose that $\overset{\sim}{\text{ز}}$ is $\overset{\sim}{\text{ج}}$ and repeat the above.

§.95. The ratios of the string's various lengths - where the frets of the tones of triphony are made - to the entire string are expressed numerically thus:

$$\begin{array}{cccc}
 1 & \frac{5}{6} & \frac{22}{27} & \frac{3}{4} \\
 \overset{\sim}{\text{ج}} & \overset{\sim}{\text{ق}} & \overset{\sim}{\text{ك}}\overset{\sim}{\text{ت}}\overset{\sim}{\text{و}}\overset{\sim}{\text{س}} & \overset{\sim}{\text{ز}}
 \end{array}$$

§.96. It is obvious that the tones of all three systems have the same ratios, the reason being this: The diapason system is composed of triphony and trochos (§.91.) So when the diapason begins with triphony, the intervals of its tones are equal with the intervals of the latter up to the point it extends; that is

ne pa bou ga di ke zo Ne
 ne pa bou Ne

When it begins with trochos, then the intervals of the tones of the two systems are equal up to the point that the trochos extents, thus:

pa bou ga di ke zo ne Pa
 pa bou ga di Pa

§.97. One and the same note is possible to appear both as higher and lower than the remaining notes, depending on its relation to them; thus among the notes $\overset{\sim}{\text{ق}}$, $\overset{\sim}{\text{ك}}\overset{\sim}{\text{ت}}\overset{\sim}{\text{و}}\overset{\sim}{\text{س}}$, $\overset{\sim}{\text{ز}}$, and $\overset{\sim}{\text{ج}}$, $\overset{\sim}{\text{ق}}$ is lower than $\overset{\sim}{\text{ك}}\overset{\sim}{\text{ت}}\overset{\sim}{\text{و}}\overset{\sim}{\text{س}}$, $\overset{\sim}{\text{ز}}$ and $\overset{\sim}{\text{ج}}$; $\overset{\sim}{\text{ك}}\overset{\sim}{\text{ت}}\overset{\sim}{\text{و}}\overset{\sim}{\text{س}}$ is lower than $\overset{\sim}{\text{ز}}$ and $\overset{\sim}{\text{ج}}$, but higher than $\overset{\sim}{\text{ق}}$; $\overset{\sim}{\text{ز}}$ is lower than $\overset{\sim}{\text{ج}}$, but higher than $\overset{\sim}{\text{ق}}$ and $\overset{\sim}{\text{ك}}\overset{\sim}{\text{ت}}\overset{\sim}{\text{و}}\overset{\sim}{\text{س}}$; $\overset{\sim}{\text{ج}}$ is the highest of all.

§.98. One and the same note is possible to appear as either higher or lower of itself, under a change of system; thus: among the notes,

$\overset{\text{ل}}{\underset{\text{و}}{\text{ق}}}$ $\overset{\text{ل}}{\underset{\text{و}}{\text{ح}}}$, if we descend on the trochos, it will be found to be low $\overset{\text{ل}}{\text{س}}$; if we descend on the diapason system, it will be found high $\overset{\text{ل}}{\text{س}}$, the difference being one semitone. Similarly, among the notes $\overset{\text{ل}}{\underset{\text{و}}{\text{ع}}}$ $\overset{\text{ل}}{\underset{\text{و}}{\text{د}}}$ $\overset{\text{ل}}{\underset{\text{و}}{\text{ر}}}$ $\overset{\text{ل}}{\underset{\text{و}}{\text{ز}}}$, if one ascends on the trochos, the interval $\overset{\text{ل}}{\underset{\text{و}}{\text{ز}}}$ $\overset{\text{ل}}{\underset{\text{و}}{\text{ر}}}$ is found to be a major tone; if one ascends on the diapason, the interval $\overset{\text{ل}}{\underset{\text{و}}{\text{ر}}}$ $\overset{\text{ل}}{\underset{\text{و}}{\text{ز}}}$ is a minor tone.

§.99. A sound emitted by the human mouth or by a string, without other higher tones to be predetermined, is called buzzing; it may stand in the place of every note in any of the systems. For example, in the tetra-chord system, if one frets on the canon the interval of a major tone, then of a minor tone followed by a minimum tone, it is obvious that the buzzing has the place of the note $\overset{\text{ل}}{\underset{\text{و}}{\text{ز}}}$, the next of $\overset{\text{ل}}{\underset{\text{و}}{\text{ر}}}$ and the next to this, $\overset{\text{ل}}{\underset{\text{و}}{\text{د}}}$, and the last, $\overset{\text{ل}}{\underset{\text{و}}{\text{ع}}}$. If the intervals fretted are a minor tone, a minimum and then a major, the buzzing has the place of $\overset{\text{ل}}{\underset{\text{و}}{\text{ر}}}$, the next of $\overset{\text{ل}}{\underset{\text{و}}{\text{د}}}$, the next of $\overset{\text{ل}}{\underset{\text{و}}{\text{ع}}}$ and the last of $\overset{\text{ل}}{\underset{\text{و}}{\text{ز}}}$.

§.100. Among the notes, some are called melodic and some are in prose. Melodic are the ones used by chanters and instrumentalists. In prose are the ones used by orators and by us in our speech.

CHAPTER XII

On the Martyriæ of the Diatonic Genos

§.101.

THE MARTYRIÆ, as has already become obvious in the foregoing (§.44, 45, 46.), stand as keys to the neumes by which melody is written, because each neume might stand for every note and does not indicate on every point one only note. Therefore, we use the martyriæ in order to uncover the starting point of the melody's notes: in order to show which is the note we start with, and thus determine the notes of the quantitative neumes of the melody.

§.102. The martyriæ are placed at the beginning of every melody, at various places in its course, and some times at the end. At the beginning of the melody, the martyria is written in order to determine with the note it reveals, the notes of the succeeding neumes. For example, at the beginning of the parallage, the $\overset{\pi}{\eta}$ is written, indicating the note pa. This shows that the ison is pronounced pa, the apostrophos ne, the other apostrophos zo etc.

§.103. In the course of the melody the martyria is written for the reason mentioned but also as a confirmation of one's accuracy. Because when a chanter comes across a martyria and finds that the note of the last neume is the same with that of the martyria, he confirms that his chanting is accurate and the writer correct. Otherwise, either the chanter has erred or the writer. In the mid of the melos "Κύριε ἐκέκραξα" of the first echos, for example, lies the martyria $\eta\overset{\sigma}{\eta}$. If the chanter pronounces ga on the neume before it, he is correct, if not, he is wrong. The same purpose has the martyria when written at the end.

§.104. Since it appears that the original mele of psalmody were four, the original martyriæ were also four:

η η η η .

All the rest derive from these, in the following way.

§.105. From η are created: first, the martyria of the neagie, that in early times was written η or η , but we write it η and represent only the note ne by it; second, the martyria of the agia, that is of the tetra-

phony, a fifth higher, which in early times was written $\overset{\zeta}{\Delta}$ but we write $\overset{\Delta}{\Delta}$ and represent note di by it; then, the martyria of the ninth above it, that we write $\overset{\pi'}{\Delta}$ and represent the note Pa by it; next, the martyria of the twelfth above it, which we write $\overset{\Delta'}{\Delta}$ representing Di by it; next, of the note a fourth below, that we write $\overset{\Delta}{\Delta}$ and represent the di by it; and finally, of the octave below ne, written $\overset{\Delta}{\Delta}$.

§.106. From η are created: first the martyria of the aneanes, that in older times was written η or $\overset{\eta}{\eta}$ but we write $\overset{\pi}{\eta}$ and represent only the note pa by it; next, of the annanes, or else, of the fifth above, which in early times was written $\overset{\zeta}{\eta}$ but we write $\overset{x}{\eta}$ and represent the note ke by it; then, the note one octave above it, which we write $\overset{\pi'}{\eta}$ and represent the Pa; next, of the twelfth above it, which we write $\overset{\eta'}{\eta}$ and represent the ke by it; next of the note a fourth below, that we write $\overset{\eta}{\eta}$ and represent the ke by it; and finally, of the octave below, written $\overset{\eta}{\eta}$ and representing the note pa.

§.107. From ν are created, first the martyria of the necheanes, that in early times was written $\overset{\nu}{\nu}$ but we write $\overset{\beta}{\nu}$ and represent only the note bou. Then, the one of the nechanes a fifth above it, which in early times was written $\overset{\zeta}{\nu}$ but we write $\overset{\beta'}{\nu}$ and represent the note zo by it; then of the octave above it, that we write $\overset{\beta'}{\nu}$ and represent Bou by it; next, of the twelfth above it, that we write $\overset{\nu'}{\nu}$ and represent Zo by it; then again the one of the fourth below it, that we write $\overset{\zeta}{\nu}$ and represent the zo by it; and again the one of the octave below, that we write $\overset{\nu}{\nu}$ and by which we represent the bou; finally, the martyria of the eleventh below it, written $\overset{\nu}{\nu}$ and indicating the zo, because the $\overset{\nu}{\nu}$ having no peculiar melos to itself, is included in the ν .

§.108. From ξ are created, first the martyria of the nana, written in early times $\overset{\xi}{\xi}$, though we write $\overset{\xi}{\xi}$, with which we represent only the note ga; then, of the fifth above it, that we write $\overset{\xi'}{\xi}$, by which we represent Ne; next, of the octave above it, that we write $\overset{\xi}{\xi}$ and represent Ga; and finally, of the octave below it, written $\overset{\xi}{\xi}$ and representing ga.

§.109. Within the diatonic genus itself, the different systems have different martyriæ. For example, the note an octave above the π is indicated by the martyria π' when the melos is in the diapason system, but when it is in the trochos, the same note is indicated by the martyria π'' , because the π' requires ascent of a minor tone, though the π'' requires ascent of a major tone. The same is understood for the ρ and the ρ'' .

§.110. Within the diatonic genus itself, the phthorai too alter the martyriæ. When the phthora of the nana is put upon di for example, the martyria of this note becomes Δ . The melos is, nonetheless, always indicated by one of the four original martyriæ. The consonant letters of the seven syllables of the diapason's notes indicate the distance from the ison. For example, the $\rho\rho$ of the martyria $\rho\rho$ indicates that the melos is nana and Δ indicates that the interval is a fifth from note ne.

§.111. A melody is called netoeides when it expands in the area of high notes. It is called hypatoeides when it expands in the area of low notes. It is called mesoeides when it expands in the area of the in between notes. Consequently, some of the martyriæ are said to be of netoeides melody, some of hypatoeides and some of mesoeides. Here you have two plates containing the martyriæ.

$\rho\rho$	β	π	δ	Octaves below
ρ	β	π	ν	
	ρ	α	δ	Fourths below
	ρ	α	Δ	
	ρ''	α'	Δ'	Twelfths above
	ρ''	α'	δ''	
ρ'	β'	π'	ν'	Octaves above
$\rho\rho$	α	α	δ	
ρ'	ρ	α	Δ	Fifths above
$\rho\rho$	ρ	α	δ	
ρ	β	π	ν	First
$\rho\rho$	α	α	δ	
$\rho\rho$	α	α	δ	Initial

The martyria of the Netoecides melody	Zω	Ν̣
	κε	ξ̣
	δ̣	Δ̣
	γα	Γ̣
	βου	β̣
	πα	π̣
	νη	ν̣
The martyria of the Mesoecides melody	Zω	Ν̣
	κε	ξ̣
	δι	Δ̣
	γα	Γ̣
	βου	β̣
	πα	π̣
	νη	ν̣
The martyria of the Hypatoecides melody	ζω	Ξ̣
	κε	κ̣
	δ̣	Δ̣
	γα	Γ̣
	βου	β̣
	πα	π̣
	νη	ν̣
Zω	Ξ̣	



SECOND BOOK

CHAPTER I

On the Quality in Melody

§.112.

IF MUSICIANS WERE EXAMINING MELODY ONLY REGARDING HEIGHT AND LOWNESS, their research would be dealing with the quantity of melody alone.¹⁵ Since, however, they examine melody also as regards fast and slow, strong and weak, large and small, smooth and rough and many others as well (because, when a big stroke or blow falls in the surrounding air and hits it at many parts, a big sound results; when the blow or stroke is small, the sound too is small. When the stroke or blow falls evenly, the sound is smooth; when unevenly, it is rough. When it falls freely, the sound is strong; when it meets obstacles, it is weak),¹⁶ their observation was expanded and included the quality of melody as well. Quality relates to those occurrences that happen in the air and is perceived by us as time and the modes of generating the notes.

§.113. Time and the modes of generating the notes are the elements that can explain the quality of melos. When the notes represented by neumes are not linked with time-indications, they resemble the syllables of the grammarians, which make no sense unless employed in words. So, time is what links the notes together and brings them to the status of words. The modes of generating the notes distinguish the words from each other, in order that each will enunciate its particular significance. Because, as the “writes, come in”, “writes: coming”, “writes coming”, “rights come in”, “right’s coming” have all the same sound, but

¹⁵ It appeared that the difference between lowness and height is a kind of quantity. Claudio Ptolemaeus Chap. III, 7.

¹⁶ See, Gerasenos Nicomachus, Book I, 8.

the manner of pronunciation, due to the spelling, the punctuation or anything else that distinguishes them, in the same way, the modes of generating the notes distinguish the words of notes from each other.

§.114. Time, according to the philosophers, is measurement of an object's motion. While a melos is recited, let the hand or the foot of the musician move up and down hitting on the knee. Measuring the hand's motion, time is rendered. Time spent from one hit to the next is calculated as one chronos.

§.115. Each neume revealing one note, spends one chronos. The hyporrhoe which indicates two consecutive notes, spends two chronoi and each of its notes gets one chronos.

CHAPTER II

On the Hypostaseis

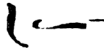
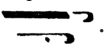
§.116.

SHORT NOTE IS CALLED THE ONE THAT SPENDS ONE CHRONOS; long note is the one that spends many chronoi. Since it often happens, though, one note to spend many chronoi or one chronos to require many notes, certain signs have been used to determine all this. These signs are written below or above the neumes of the notes. It is these signs that were named hypostaseis.


§.117. It follows that hypostasis is a soundless musical sign, which notates the quality of the melos and is written below the neumes of the notes, that is, it is subscribed to the neumes, though it might be also super scribed. It is, in other words, a sign used by musicians not to represent the notes, but in order to discern the neumes of the notes and perfect their composition, so that they will obtain the power to write the melos as the quality demands.





§.118. Among the hypostaseis, some are in-time [enchronoi] and some timeless [achronoi]. The timeless are modal; they write, that is, the modes of generating the notes. The in time are the following:











Haple	•
Clasma	↪
Gorgon	↪
Argon	↪


§.119. The haple is written • and is worth one chronos. It becomes dipole [double] .. when two chronoi are required, triple ... when three chronoi are required, tetrapole [quadruple] when four chronoi are required, pentapole [quintuple] when five chronoi are required and hexapole [sextuple] when six chronoi are required. To whichever note the haple is subscribed, this note spends two chronoi, one for its own neume and one for the haple. The haple is subscribed to the hyporrhoe ♯ and causes delay to its second note. It is also subscribed to the sort of apostrophos that may receive a gorgon  and to the antikenoma . The note of any neume subscribed by the dipole spends three chronoi. The dipole is subscribed

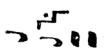
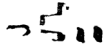
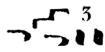
to all the neumes except to the kentemata, since they never spend more than one chronos. The note of any neume subscribed by the triple, the tetraple, the pentaple and the hexaple, spends the analogous chronoi. These signs are subscribed to the same neumes as the diple. When written apart from the neumes with a bareia, the haple signifies one chronos of silence, the diple, two chronoi of silence, the triple three chronoi of silence etc.

§.120. The clasma is written  and is worth one chronos. It is put on all the neumes except the hyporrhoe and the kentemata, because the hyporrhoe receives the haple instead of the clasma, and the kentemata are never delaying, as said before. The note of the neumes, which bears the clasma, spends two chronoi and during the delay the voice waves, so to say.





§.121. The gorgon is written  and is worth half a chronos. When it is required that two notes spend together one chronos, the gorgon is put on the second neume, thus . When it is required that three notes together spend one chronos, then it becomes digorgon and is put again on the second neume, thus . When it is required that four notes together spend one chronos, then it becomes trigorgon and is put on the second neume again, like ; and so on.





§.122. The gorgon is distinguished in a threefold manner: the half, the whole and the sesquialteran. In order to demonstrate this, let us suppose that the chronos spent by the two notes indicated by these two neumes , is 4. When it is required that the oligon spends 3 and the ison 1, then the  is put on the oligon, . When it is required that the oligon spends 2 and the ison also 2, the  is put upon the oligon . When it is required that the oligon spends 1 and the ison 3, then the  is put on the oligon . The first of these, the , is called hemigorgon; the second, the , is called gorgon and the third, the , trihemigorgon.


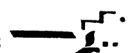
§.123. The digorgon is distinguished in a fourfold manner: When the first note spends half the chronos and the rest two notes, the other half (that is, the second and the third a quarter each), the digorgon is written . When the first note spends a quarter of the chronos, the second note, half and the third note, a quarter, it is written

. When the first and the second notes spend a quarter each and the third note, half, it is written . When the three notes divide the chronos equally among them, each receiving one third of it, then, number 3 is written after the digorgon, thus . This means that the chronos is divided into three instead of into four.

§.124. Such distinctions do not apply on the trigorgon, since it is assumed that the chronos is divided into four and that each note spends a quarter of the chronos. As regards the tetragorgon and the pentagorgon, if they are ever met, their speed does not permit such distinctions to be made.

§.125. Conclusively, the gorgon gives to the note of the neume on which it is put, the value mentioned. It deprives the previous neume of one quarter of the chronos, when it is hemigorgon; two quarters, when it is gorgon; and three quarters, when it is trihemigorgon. In the case of the digorgon, the one written  deprives the previous note of two quarters of the chronos, the one written  or  of three quarters and the one written  of two thirds of the chronos.

§.126. The argon is written . It is worth one chronos. It is put upon the kind of the oligon under which stand the kentemata  and it requires that the oligon together with the kentemata will spend one chronos and the argon itself one more chronos. A gorgon is also implied in this case, since the two neumes together spend one chronos. When three chronoi are required, the argon is doubled and written . When four chronoi are required, it is tripled and written .

§.127. When a neume has both a gorgon and an hable, like , then the gorgon acts first and the hable after. That means that since this position requires two chronoi, it is realized in two beats. At the first beat comes the note of the ison, spending half the chronos and the note of the apostrophos spends the remaining half up to the second beat. At the second beat, the note of this same apostrophos is sustained during the second chronos required for the hable. The same happens when the neume has a digorgon and a diplo, thus . During the first crhonos the three notes are spent, while during the

next two chronoi of the dipole, the sound of the second note of the hyporrhoe is sustained.








§.128. No sign is required to indicate the tempo as long as it is kept the same in the course of a melos. When, however, it is changed from fast to slow it is indicated with the $\overline{\chi}$, which asks for double the speed. When it is changed from slow to fast it is indicated with the $\overline{\chi}$, which shows that the retardation is redoubled.

CHAPTER III

On the Timeless Hypostaseis




§.129.

THE TIMELESS HYPOSTASEIS, by which is not written time, but the mode of generating the notes, and are for that reason called modal, are seven.

the Bareia	
the Homalon	
the Antikenoma	
the Psephiston	
the Heteron	
the Stavros	
and the Endophonon	

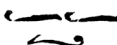
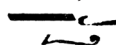
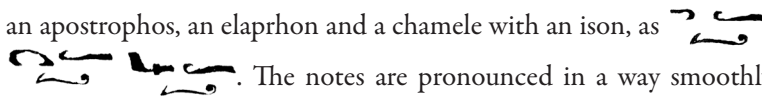
§.130. Wherever one of the seven hypostaseis is written, we distinguish the mode of recitation hereby described. The bareia calls for the note of the neume that lies after it to be pronounced with certain weight, so that the vitality of this note will be distinguished both from the previous and the following notes. The bareia is subscribed to all the neumes except the kentemata.

§.131. The homalon calls for a waving of the voice to occur in the larynx together with a certain heightening of the note of the neume to which it is subscribed. It is subscribed to all the neumes except the kentemata, the petaste and the hyporrhoe.


§.132. When the antikenoma is subscribed to an oligon which is followed by a descending neume, it calls for the sound to be pronounced with a push. When under the antikenoma is put an huple , a dipole , a triple  with a descending neume next to it, the sound is pronounced in a way suspended and non-separated. The antikenoma is put under all the neumes, except the kentemata. It is put before all of them except the hyporrhoe.

§.133. The psephiston calls for a certain power and vitality to be

given to the notes of the neumes it is subscribed. It is put under the ison and the ascending neumes that stand before descending ones, except the kentemata.

§.134 The heteron links ascending with descending neumes, an ison with an ison, as , an oligon with an ison, as  or an apostrophos, an elaphron and a chamele with an ison, as . The notes are pronounced in a way smoothly and weakly connected.

§.135. The stavros calls for the sound of the note after whose neume it lies, to be interrupted, so that the sound of the next neume will be taken with a new breath.

§.136. The endophonon calls for the note of the neumes to which it is subscribed, to be pronounced from the nose. When the neume happens to have a time-sign as well, the time is similarly spent. During the delay, that is, the sound comes out through the nose, as in .

The ancients used more timeless hypostases, which did not represent the modes of generating the notes, but a whole melody. We shall speak about these in connection with melopœia.

CHAPTER IV



On the Differences in the Interpretation of the Neumes' Notes

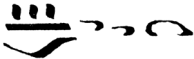

§.137.

ANCIENT ECCLESIASTICAL MUSICIANS, observing with curious eyes the interpretation of notes, expanded it to include many modes. They considered, therefore, reasonable to represent the mele with as many modes of interpretation they were able to discover. Otherwise, as the famous writer on ecclesiastical music Gabriel Hieromonachos believed, the seven neumes (the ison, the oligon, the kentema, the hypsele, the apostrophos, the elaphron and the chamele), were sufficient to represent any quantity of melody. So, they increased the neumes in order to write some of the quality of melody too. Consequently, a difference in the rendering of the notes is observed among the neumes by which the quantity of melody is notated, since the note of the oligon, for example, is rendered in one way and the note of the kentema in another.

§.138. The oligon calls for the voice to ascend disconnected. Whenever, therefore, continuous tone-by-tone ascent of notes which are susceptible of syllables is required, it is represented in the notation with the oligon only. When the oligon is subordinated to the ison or the descending neumes, its note is pronounced more vividly.

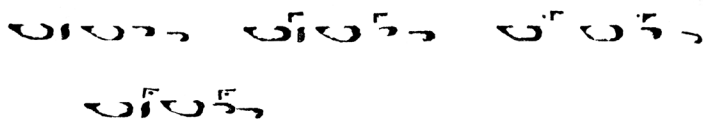
§.139. The petaste calls for a rise of the voice a little higher from the natural pitch of the tone at hand. It preserves this peculiarity when it is also subordinated by the ison and the descending neumes. The petaste is put by itself before a descending neume. It is put with a clasma before many descending neumes.

§.140. The kentemata call for the voice to be continuous and their note not to be disconnected from the previous or the following note. When written above or below the oligon, they do not correspond to a syllable of a meaningful word. If in this position there happens to be a gorgon, it is understood for the kentemata; on the beat, that is, is pronounced the note of the oligon and not of the kentemata, as in . If there happens to be an argon, thus , the kentemata are included again in the half chronos of the previous note and

on the beat is pronounced the oligon, which spends two chronoi. The analogous is understood when there happens to be a double or triple argon, as well as an hemigorgon or a trihemigorgon. It should also be known that the kentemata are not put at the beginning nor after a petaste, but between the other neumes, and that the kentemata do not replace the oligon, although the oligon may replace the kentemata, in cases that give rise to confusion, such as . Because the kentemata are here confused with the kentema, they give their place to the oligon, so that this thesis, is written . The same happens in other similar situations.

§.141. The apostrophos, the elaphron and the chamele call for the voice to descend disconnected. They all correspond to syllables. When the apostrophos is subordinated to the elaphron, it creates continuity between its two notes, on the first of which a gorgon is understood. The first note does not correspond to a syllable of a meaningful word, though the second, which is pronounced on the beat, does correspond to a syllable.

§.142. The hyporrhoe calls for its two notes, as well as the previous one, to descend continuously and with one breath. If there happens to be a gorgon, a hemigorgon or a trihemigorgon, it is understood for its first note while on the beat of the chronos is pronounced its second note. Neither the first or second note correspond to a syllable of a meaningful word. The hyporrhoe is analyzed thus:



It should be known also that the hyporrhoe, like the kentemata, is not put at the beginning of a melos, but it comes after some previous neume. It may come after any neume, except the kentemata. It is moreover superscribed to the oligon and the petaste, in which case, it subordinates them. The apostrophoi do not replace the hyporrhoe, nor does the hyporrhoe replace the two apostrophoi, unless some syllable impedes. In such a case, the hyporrhoe is analysed into two apostrophoi, on the first of which is put the gorgon.

§.143. The kentemata and the hypsele have no peculiar to themselves quality. Instead, they receive the quality of the oligon or the petaste, on which they lean, like on bodies. When it is required that the ison, which is pronounced in one way only, receives a different quality, we notate this quality with the hypostaseis.

CHAPTER V

On rhythm

§.144.

RHYTHMICS IS THE SCIENCE OF THE APPLICATION OF ALL SAID ABOUT RHYTHMS.¹⁷ A rhythm is a system composed of chronoi in certain order. It is characterized as fast and slow. Four elements are observed in rhythm: the thesis, the arsis, the noise and stillness. Thesis is the impetus of a body downwards. Arsis is the impetus of a body upwards. Noise is the striking of the body. Stillness is the stopping of the body.¹⁸

§.145. Rhythm is created with the occurrence of any motion which maintains a set order and with the measurement of the chronoi spent during it. For example, the tympanist plays rhythmically when his beats upon the instrument preserve a determined order of the chronoi. When the time spent during the beats is measured, whenever the rhythm is repeated with the following four: thesis, arsis, noise and stillness, the time of every rhythm is found to be equal and similar.¹⁹ Rhythm is observed at tympanists, at hand-clapping and at dancers, since when the slow and fast arsis and thesis of the feet occurs with certain order or certain proportion to each other, there is rhythm. It is said that the hammering of the blacksmiths when they drop the hammers upon the anvil with good order is also rhythmic.

§.146. Rhythm is perceived with three senses: sight, as in dancing; hearing, as in chanting; and touch as in when feeling the pulsations of the arteries. Musical rhythm however is only perceived with sight and hearing. In music, rhythm applies to the motions of the body, to the melody and to the text. There are five parts in rhythemics: one concerning the chronoi, one concerning the species of the feet, one concerning the tempo of the rhythms, one concerning the transformations and one concerning rhythmopœia. Matter of rhythm are the chronoi, as matter of melody are the notes. We start, therefore, with the chronoi.

- 17 Greeks in old times honoured rhythmic and everything concerning the instrumental dialects was then more varied. The Greeks are fond of learning nowadays, but then they were fond of rhythm. (Plutarch)
- 18 This definition of rhythm is encountered in Aristides. Some say that he got it from Phaedrus. According to Leophantos, rhythm is a composition of *chronoi* which are considered as regards the analogy and symmetry to each other. According to Baccheios, it is the measurement of time of any motion that occurs. According to Aristoxenos, it is time divided by any element which can contribute to rhythm. According to Nicomachus, it is an orderly composition of *chronoi*. According to Didymos, it is musical order in accordance with harmony. According to Ioannes Alexandrus, it is time-extension, time-contraction and their symmetry. Rhythm is understood in three ways: the term is used for motionless objects, like when we say that a statue has rhythm; it is also used for everything movable, like when we say that some one is marching in good rhythm; it is also used for voice, like when we say that some one's chanting has good rhythm. It is this latter that we are going to discuss here.

The inventors of rhythms were Archilochos, Olympos, Orpheus, and others. It is said that the invention of *rhythmopœia* was made at the same time with that of poetry. Some say though, that *rhythmopœia* preceded epic poetry, because, they say, the epic poets first observed the fast and slow *arsis* and *thesis* of the feet and by conveying these, they made the similar combinations of syllables, which we borrow for the creation of the meters. For this reason, these combinations were called feet. In the past, rhythm was by some called masculine and melody feminine, because melody is passive and formless and stands, in its relation to its opposite, as matter. Rhythm though, moulds the melody and moves it to set order. It stands as the creator to its creation.

- 19 Musical instruments, such as lyres, *auloi*, *phorminges* etc., are melodic because on them high and low notes are distinguished. The guitar, the *cembalo* and the like are harmonic, because they emit the notes harmonically. The *tympana*, *dumbelekia*, *tefia* and the like are rhythmic.

How is it that the sound emitted by rhythmic instruments is pleasing to hearing, while it neither rises or falls in pitch? Simply, it is said, because it has a perceptible and ordered number and moves our soul, through the sense organ, with a determined and comprehensible order, rhythm expands within an area that permits the mind to comprehend - through hearing - the order of this rhythm.

CHAPTER VI

On the Chronoi

§.147.

WE CALL MINIMUM CHRONOS THE ONE WE PERCEIVE AS ATOM: the first to be perceived by the sense, considered indivisible. In early times it was also called short and was notated with the υ . Compound is called the chronos that is divisible. Among the compound chronoi one is double the minimum and was also called long and notated with the ρ , one is triple and one is quadruple. The rhythmic chronos goes up to quadruple only.

§.148. Some among the chronoi, the ones running faster than the regular, are called circular, others, the ones that use composite notes and delay more, are called excessive. Among all the chronoi, some are called rhythmic, some arrhythmic and some rhythmoid. Rhythmic are the ones that preserve with each other an order in some ratio. Arrhythmic are the completely unordered ones. Rhythmoid are the ones that stand in between. This means that they possess part of the order of the rhythmic and part of the disorder of the arrhythmic .

§.149. The chronoi are measured with the thesis and the arsis. When the minimum chronos is on the thesis, it is notated with the 0, when it is on the arsis, it is notated with the 1. On the thesis we beat the right knee with the right hand and on the arsis, the left knee with the left hand.²⁰ As a rhythmic exercise for the beginners, we pronounce the beat of the thesis *doum* and that of the arsis *tek*.²¹

§.150. The minimum chronos has its sign non-dotted, like 0, 1; the double is dotted with the haple, like $\overset{\cdot}{0}$, $\overset{\cdot}{1}$, the triple with the dipole, like $\overset{\cdot\cdot}{0}$, $\overset{\cdot\cdot}{1}$, and the quadruple with the triple, like $\overset{\cdot\cdot\cdot}{0}$, $\overset{\cdot\cdot\cdot}{1}$. This way, the length of any chronos is shown.

§.151. Ratio is the relation of two dissimilar magnitudes to each

²⁰ One might now ask: "Since it is an arsis, why do we beat on the knee?" Indeed, in early times rhythms were practiced in a different way, but we, being after facility, follow the way it is done today.

²¹ *Doum* and *tek* are Ottoman words. Such syllables are pronounced until the student has practiced the rhythms well. Later, such pronunciations are given up and, instead, the syllables of the song are said.

other. Among the rhythmic chronoi, we observe three ratios: the equal, the duple and the sesquialtera.²² One chronos compared to itself gives the ratio of equality, like 0 1. Here, the thesis compared to the arsis, shows the equality of the chronoi. Two chronoi compared to one give the double ratio, like 0 0 1. Here the two theses compared to the one arsis appear to have double the time. Three chronoi compared to two give the sesquialteran ratio, like 0 0 0 1 1.

§.152. Between the beats of the arsis and the thesis we observe noise and stillness. Noise is emitted simultaneously with the beating on the tympanum and lasts until a second beat occurs. The duration of noise should be as required by the chronos. This duration is the result of the stopping of the hand and it is what we call stillness. We pronounce noise as said, with *doum* and *tek*. Their pronunciation during the chronos is equal to the predetermined duration of noise. Stillness is not pronounced, but it holds the hand motionless as long as noise requires, minus half a minimum chronos; then, the other hand starts to be lifted.

§.153. In order to show that with an example, let us beat this foot 0̇ 1 0̇. The right hand beats the long chronos of the thesis 0̇ on the right knee and with the pronunciation of the *doum*, noise starts. Then, the right hand becomes still until double the chronos is spent and the noise of the thesis stops and the left hand is lifted when its chronos is over 0̇, in order to beat right away after the ending of the double chronos of 0̇, by falling on the left knee and to initiate the noise of the arsis 1. And the left hand is still, and the right hands is lifted in order to beat the right knee after the completion of the one chronos of 1; when the right falls also in order to beat the noise of the thesis 0̇, then, there is stillness.

§.154. It follows that when two similar and isochronal signs are adjacent, as in 0̇ 0̇ 1̇ 1̇, the stillness of the first thesis is shorter than that of the second. Because for the first thesis it is required to lift the hand in order to beat the second thesis and thus cease the stillness, whereas the second thesis lasts during itself and the two next arses. The same occurs with the two arses.

22 By magnitude is here understood the time-lengths of the arsis and the thesis, whence the dissimilarity of the equal ratio is established. The sesquitercian ratio is also added by some. This results when the 3 is compared to 4, like in 0 1.

CHAPTER VII

On Feet

§.155.

A FOOT IS PART OF AN ENTIRE RHYTHM AND PERMITS US TO COMPREHEND RHYTHM'S WHOLE. A foot is composed of neither theses or arses alone. Instead, the theses are interwoven with the arses – either one of the former with many of the latter, or many of the former with one of the latter – to constitute the feet. Therefore, parts of a foot are the thesis and the arsis. And a foot will be diseme, as the 0 1 or the 1 0, triseme, as the 0 1 1, the 0 1̇, the 0 0 1, the 0 1̇, the 1 1 0 and the 1 0, tetraseme, as the 0 0 1 1 or the 0 1 1̇, etc. The foot 0 1̇ is said to be composed of one thesis and a diseme arsis; the foot 1̇ 0̇, of a triseme arsis and a tetraseme thesis.²³

§.156. The genera of the feet are three: the equal, the duple and the sesquialteran. Equal is the dactylic because its one thesis equals its two arses, 0 1 1. Duple is the iambic because its thesis is double its arsis, 1 0. Sesquialteran is the pæonic because its two theses have a sesquialteran ratio to its arsis, 0 0 1.²⁴

§.157. Within the dactylic genus there are six rhythmic feet:

0 1 Simple proceleusmatic.²⁵

0 0 1 1 Double proceleusmatic, that also appears as 1 1 0 0.

0 1 1 Greater anapestic.²⁶

1 1 0 Lesser anapestic

0 1̇ Simple spondaic

0 1̇ Double spondaic²⁷

§.158. Within the iambic genus there are four rhythmic feet:

1 0̇ or 0 1 Iamb

0 1 Trochee, which Bacchius calls Choreios

1̇ 0̇ Iamb orthios.²⁸

0 0 1 Trochee semantos.²⁹

§.159. In the pæonic genus there are two rhythmic feet:

0 0 1 Pæon diaguos.

CHAPTER VIII

On Meters [Measures]

§.161.

MEASURED IS CALLED THE MELOS WHOSE MELODIC NEUMES ARE SEPARATED BY VERTICAL LINES THAT ENCLOSE MELODIC FRAGMENTS OF AS MANY CHRONOI AS THE METER CONTAINS. Meters are formed in the following manner.

§.162. One thesis and one arsis, that count for two chronoi, constitute the meter marked with 2. For this meter we beat once on the knee and once in the air. This meter is identical with the proceleusmatic foot 0 1.

§.163. One thesis and two arses, which count three chronoi, constitute the meter marked with 3. For this meter we beat once on the knee and twice in the air, 0 1 1 or else, we beat a short beat on the knee and a long in the air, in which case this meter is identical with the iambic foot 0 1̇.

§.164. Two theses and two arses, which count for four chronoi, constitute the meter marked with 4. For this meter we beat twice on the knee and twice in the air. This meter is identical with the double proceleusmatic foot 0 0 1 1.

§.165. Two theses and two arses, which count for five chronoi, constitute the meter marked with 5. For this meter we beat twice on the knee and three times in the air – to the right, to the left and upwards. If we beat one long thesis, another short thesis and one long arsis, this meter becomes identical with the foot called *diaguios pæon* 0̇ 0̇ 1̇.

§.166. Two theses and four arses, which count for six chronoi, constitute the meter marked with 6. For this meter we beat twice on the knee and three times in the air – to the right, to the left and a long beat upwards. The European musicians apply still more meters which they call compound. We will not talk about them here, since we do not make use of them.

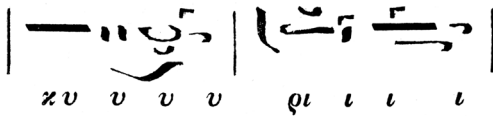
§.167. When we divide a melody - already written completely with its quantitative neumes and the qualitative signs - into any of the me-

ters mentioned by drawing the vertical lines, we have to be careful with the following.

§.168. The neumes enclosed between the vertical lines should write a melody of as many chronoi as many theses and arses are contained in the meter. If the meter, for example, contains one thesis and two arses, the vertical lines will enclose neumes which notate a melody of three chronoi, etc.

§.169. At times, at the point where a meter should be separated with the vertical line, occurs a neume which is indivisible because of the length of its note. In such a case we leave this meter undivided and divide the next. As this result to a meter of eight chronoi, that is, of two theses and two arses, and again two theses and two arses, we write on the meter the number 8 to indicate it. In related cases we write 7, 6, 5, 3 and 2.

§.170. Emphasis is when the melodic length of the syllable of a significant word starts and ends together with the meter. For example, in “Τὰς ἐσπερινὰς” the syllables *κν* and *ρι* of the word *Κύριε* receive a melodic length.



This length is worth four chronoi. If the meter in which I divide the entire troparion is of four chronoi as well, then I obey the emphasis; if not, I harm it.

§.171. The melody of the syllables *κν* and *ρι*, having a duration of eight chronoi, is enclosed in two meters marked with 4. The first meter, having the vertical line before the oligon, contains the oligon, the kentemata, the petaste and the apostrophos. The second contains the ison, the hyporrhoe, the oligon and the apostrophos, after which lies a vertical line again. The melodic length of the syllables, thus, starts and ceases together with the meter.

§.172. We start dividing the meters, either dichronous or tetra-chronous, from the point where a melodic length of a syllable occurs. If a final note, either short or dichronous or trichronous precedes, its time value will be determined from the following emphasis. For example, in the troparion mentioned, on the word *εὐχὰς* the syllable *χας* gets three chronoi because of the syllables *κν* and *ρι*.

CHAPTER IX

On Rhythms

§.173.

RHYTHMIC MELOS IS THE ONE THE MELODIC NOTES OF WHICH PRESERVE THE SAME ORDER TO THE CHRONOI OF THE RHYTHM. It is for this reason that the neumes of the melody are separated by vertical lines which enclose a melos of as many chronoi as the rhythm contains. Each rhythm is composed of the feet mentioned. It is composed either by conjunction or by period. A rhythm is in conjunction when it is composed of two simple and dissimilar feet. It is in period when composed of more and dissimilar feet.

§.174. The rhythms, therefore, in conjunction, in the dactylic genus are the following two:

$\overset{\cdot}{0} \overset{\cdot}{1} 0 1$ Greater ionic
 $0 1 \overset{\cdot}{0} \overset{\cdot}{1}$ Lesser ionic³¹

§.175. In the iambic genus they are also two, the following:

$\overset{\cdot}{1} \overset{\cdot}{0} 0 1$ Iambic bacchic
 $0 1 1 \overset{\cdot}{0}$ Trochaic bacchic.³²

§.176. The rhythms in period in the iambic genus are twelve, the following:

$1 \overset{\cdot}{0} 0 1 \overset{\cdot}{0} 1 \overset{\cdot}{0} 1$ Iambic trochee
 $0 1 1 \overset{\cdot}{0} 0 1 \overset{\cdot}{0} 1$ Bacchic trochee
 $0 1 \overset{\cdot}{0} 1 1 \overset{\cdot}{0} 0 1$ Trochaic bacchic
 $0 1 \overset{\cdot}{0} 1 \overset{\cdot}{0} 1 1 \overset{\cdot}{0}$ Epitritic iamb
 $0 1 1 \overset{\cdot}{0} 1 \overset{\cdot}{0} 1 \overset{\cdot}{0}$ Trochaic iamb
 $1 \overset{\cdot}{0} 0 1 1 \overset{\cdot}{0} 1 \overset{\cdot}{0}$ Bacchic iamb
 $1 \overset{\cdot}{0} 1 \overset{\cdot}{0} 0 1 1 \overset{\cdot}{0}$ Iambic bacchic

³¹ It was called ionic for the vulgarity of its rhythm, because the Ions were caricatured for their vulgarity. The first is composed of a simple spondaic and a diseme proceleusmatic; the second is in the reverse order. Bacchius the Old calls this rhythm bacchic, saying that it is composed of an hegemon and a spondee, $0 1 \overset{\cdot}{0} 1$.

³² They were called bacchic because they are suitable to bacchanal mele. The first of them has an iamb first and then a trochee; the second is the reverse.

$1 \dot{0} 1 \dot{0} 1 \dot{0} \dot{0} 1$ Epitritic trochee
 $1 \dot{0} 1 \dot{0} \dot{0} 1 \dot{0} 1$ Simple iambic bacchic
 $\dot{0} 1 \dot{0} 1 1 \dot{0} 1 \dot{0}$ Simple trochaic bacchic
 $\dot{0} 1 1 \dot{0} 1 \dot{0} \dot{0} 1$ Middle iamb
 $1 \dot{0} \dot{0} 1 \dot{0} 1 1 \dot{0}$ Middle trochee.³³

§.177. When these genera are mixed, more rhythmical species are produced, like:

$1 \dot{0} \dot{0} \dot{0} 1 \dot{1}$ First dochmiac.
 $1 \dot{0} \dot{0} 1 1 \dot{0} 1 1 1$ Second dochmiac.³⁴
 $1 \dot{0} \dot{0} 1 \left| \begin{array}{l} \dot{0} \dot{1} 0 1 \\ \dot{0} \dot{1} 0 0 \end{array} \right. \}$ Prosodiacs of two conjunctions.³⁵
 $0 1 1 \dot{0} \dot{0} 1$ Prosodiac of three.
 $0 1 1 \dot{0} \dot{0} 1 1 \dot{0}$ Prosodiac of four.³⁶
 $\begin{array}{l} 1 \dot{0} 0 \\ 1 1 \dot{0} \end{array} \left. \vphantom{\begin{array}{l} 1 \dot{0} 0 \\ 1 1 \dot{0} \end{array}} \right\}$ Irrational choreic.³⁷
 $\dot{0} \dot{0} \dot{1} 1 1 1 \dot{1}$ Cretan.³⁸
 $\dot{0} \dot{0} 1 \dot{1}$ Trochaic bacchic dactyl.
 $0 \dot{0} \dot{1} 1$ Iambic bacchic dactyl.
 $\dot{0} \dot{0} \dot{0} 1 1 \dot{1}$ Iamboid choreic dactyl.
 $0 \dot{0} \dot{0} \dot{1} 1 1$ Trochoid choreic dactyl.³⁹
 $0 \dot{0} 1 \dot{0}$ Iambic dactyl.⁴⁰

33 Among the twelve rhythms in period, four are composed of an iamb and three trochees, the other four, of one trochee and three iambs, and the remaining four, of two iambs.

34 Bacchius the Old says that the dochmiac is composed of an iamb, an anapest and the pæon on the basis, $1 \dot{0} 1 1 \dot{0} \dot{0} 1 1 \dot{0}$.

The pæon is composed of one choreic and one hegemon [pyrrhic] $\dot{0} 1 1 0$.

The same writer displays another rhythm which he calls enoplios [martial] and is composed of an iamb, an hegemon, a choreic and an iamb $1 \dot{0} 1 \dot{0} \dot{0} 1 1 \dot{0}$. Others say that the enoplios, called prosodiac by some, is composed of one spondee, one pyrrhic, one trochee and one iamb, $\dot{0} 1 \dot{0} 1 \dot{0} 1 1 \dot{0}$.

35 These two are composed of the two bacchic and the greater ionic.

36 The first of those is composed of one pyrrhic, one iamb and one trochee, the second, of the same three with the addition of one iamb.

37 The iamboid is composed of one long arsis and two short theses. Considering its rhythm, it looks like the dactyl; but considering the number of the word's parts, it looks like an iamb, because an iamb is 100, that is 10.

The trochoid is composed of two short arses and a long thesis.

38 It got this name from the nation.

39 The first dactyl is constructed of a trochaic thesis and an iambic arsis; the second, in the reverse order; the third receives one of the choreic on the thesis and the other on the arsis, and the third is the reverse.

§.178. So, this is how many rhythms are preserved for us by Aristides and Bacchius the Old. The Ottomans have nearly thirty-two rhythms, among which we enumerate twelve, the simpler and more handy. They apply two more signs, the 2 and the 1-. 2 indicates two short chronoi, a thesis and an arsis; 1- indicates four short chronoi. The 2 is pronounced teke, and beats first the right knee, then the left. 1- is pronounced teek, and beats first the left knee with the left hand and then both knees with both hands. Thus, 2 2 equal one 1-, but 1- is completed in one beat, though the 2 2, in four.

40 Aristides says that the Cretan rhythm consists of a trochaic thesis, a trochaic arsis and an iambic arsis. Because it seems that the text is erroneous when he says: "There exist still more rhythms, six in number," while he enumerates five rhythms, Meibom corrects him and writes:

"The Cretan rhythm consists of a trochaic thesis and a trochaic arsis $\acute{0} \acute{0} \grave{1} \grave{1}$. The iambic dactyl consists of an iambic thesis and an iambic arsis $0 \acute{0} \acute{1} \grave{1}$." The exposition of this rhythm was deduced by Meibomius from Aristides' list.

CHAPTER X

List of Ottoman Rhythms

§.179.

RHYTHM IS CALLED IN TURKISH USUL AND IS TAUGHT ABOVE EVERYTHING ELSE TO BEGINNERS. For the Turks it fulfils a double purpose. One is the same as for us. The other leads them to remember the mele that they are taught or they teach, because the Ottomans use no neumes to write the mele, but keep them in memory with the rhythms. Here below we give a list of twelve of these rhythms, the following:

Sofyan 0 0 1 or 0 2

Duhek 0 1 1 0 1 the double of which, 0 0 1 0 1 - 2 2

Semai 0 2 0 1, the fast of which, 0 1 1 0 1

Cember 0 2 0 0 0 1 1 1 0 1 - 2 2

Devri-kebir 0 0 1 0 1 2 0 1 1 1 0 0 1 - 2 2

Bereysan 0 1 0 1 0 0 1 0 0 1 - 2 2

Muhamez 0 2 0 1 0 0 1 2 0 1 2 0 1 - 2 2

Remel 0 2 0 2 2 0 2 0 1 1 0 1 0 0 1 - 2 2

Haffif 0 1 1 0 1 1 0 2 0 1 1 0 2 0 0 1 2 0 1 2 0 1 - 2 2

Sakil 0 2 0 2 2 0 2 0 1 1 0 0 1 0 1 1 0 2 0 0 1 2 0 1 2 0 1 - 2 2

Nim-sakil 0 2 0 2 2 0 2 0 1 1 - 2 2

Nim-devir 0 0 1 0 0 0 1 - 2 2

§.180. Observing the composition of Ottoman rhythms, we find that the sofyan is the same with the pæon, that the semai consists of a pæon and a spondee, 0 0 1, 0 1 as the 0 0 1 is the same with the 0 2 when played. In the same way, we might be able to analyze into feet all the Ottoman rhythms and to reflect that they are also governed by some ratio.

§.181 Nim-sakil was called a rhythm because it is part of the entire rhythm sakil. Accordingly is named nim-haffif and nim-devir, in other words, half-haffif and half-devir, parts that is of the entire rhythms haffif and devir. According to them, therefore, the division of a great rhythm constitutes a smaller rhythm. They also compose some rhythms not only of an entire rhythm and its half, but also of two, three, four and

five entire rhythms.

§.182. The beginning of a rhythm coincides with the beginning of a melody. Sometimes though, the beginning of the rhythm comes first and the melody starts on the second or third rhythmical point. The cadence of the rhythm coincides with the cadence of the melody too. Sometimes, however, the rhythmical cadence comes first.

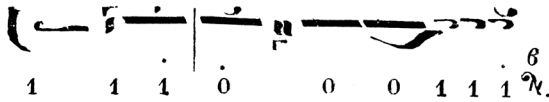
CHAPTER XI

On Rhythmic Emphasis

§.183.

RHYTHMIC EMPHASIS IS THE CONCURRENCE OF EVERY SOUND OF THE RHYTHM WITH EVERY NOTE OF THE MELODY. In other words, there is rhythmic emphasis when each neume of the melody receives one sound of arsis or thesis of the rhythm. To elucidate this, let us adapt the melody "Θείω καλυφθείς" on the rhythm $\dot{0} 0 0 1 1 \dot{1}$, which is called dactyl on the iamboïd choreic.

The image displays a musical score for the melody "Θείω καλυφθείς". It consists of eight lines of neumes (musical notation) with rhythmic symbols (0, 1, and 1 with a dot) written below them. The symbols are arranged in groups corresponding to the neumes. Some symbols have small numbers above them (2, 6, 7) and some have a pi symbol (π) above them. The symbols are: 0 0 0 1 1 1̇ 0 0 0 1 1 1̇ 0; 0 0 1 1 1̇ 0 0 0 1 1 1̇; 0 0 0 1 1 1̇ 0 0 0 1 1 1̇ 0 0; 0 1 1 1̇ 0 0 0 1 1 1̇; 0 0 0 1 1 1̇ 0 0 0 1; 1 1̇ 0 0 0 1 1 1̇; 0 0 0 1 1 1̇ 0 0 0 1 1̇ 1̇; 0 0 0 1 1 1̇ 0 0 0.



§.184. The vertical lines enclose as many melodic neumes as the rhythm, on account of its chronoi, requires. Right after the line lies an oligon with a kentema, representing the note Di. This asks for two chronoi and coincides with the sound of the 0, which requires two chronoi too. Next lie the two isa representing the notes Di Di, which demand one chronos each and coincide with the sound of 0 0, requiring also one chronos each. Then lie an apostrophos and an ison, representing the notes Ga and Ga, which require one chronos each and coincide with the sounds of 1 1, demanding also one chronos each. Next lies the oligon, representing the note Di, which requires two chronoi and which coincides with the sound of the 1, demanding two chronoi. The rhythm is then ending.

§.185. Any neume having a gorgon, a digorgon etc. is linked to the preceding note and counts as one with it. This way, it coincides with the sound of one chronos. If the preceding note has a clasma, a dipole etc., its note together with the note which has the gorgon or the digorgon is considered as coincident with the sound of the rhythmic sign. We may, therefore, say that every sound coincides with every note.

§.186. If the endings of the melodies of the other verses do not coincide with the endings of the rhythms, the end of the melody of the last verse of the troparion must end together with the end of the rhythm. For that reason, if the first three verses contain one rhythm six times, that is three times each, the last two contain the same rhythm six times, that is three each, neither the melody or the rhythm being in excess of each other.

§.187. In rhythemics, the chronos that goes by without any note for the completion of the rhythm (something that may occur in the middle of a troparion, when the rhythm is in excess of the melody), is called an empty chronos. We mark this with the huple, or the dipole or the triple depending on its length. If this empty chronos is the minimum, it is called leimma of rhythms; if it is long, that is double the minimum, it is called prosthesis.

§.188. The following might be determined about the emphasis, after many years of experience and inquiry: Which melody is peculiar to 0, which to 1 or to 0 and which to 1; which melody belongs to one rhythm and which to another; whether various rhythms belong to one melody or various melodies to one rhythm; furthermore, which rhythm starts together with the melody, which rhythm starts before the melody and which after the beginning of the melody.

CHAPTER XII

On the Modes of the Rhythms

§.189.

THREE MODES ARE CONSIDERED IN RHYTHMICS: the systaltic, the diastaltic and the hesychastic. Systaltic is the rhythm by which we can move into grievous passions; diastaltic is the one by which we incite to excitement and hesychastic the one by which we drive the soul to peace.

§.190. Those among the simple rhythms which start with a thesis are of the hesychastic mode. The ones that start with an arsis have a diastaltic mode. This is so because the former seem as if they bring into the mind some kind of rest, while the latter seem like if they bring into the mind agitation and unrest. The hesychastic mode appears more elegant when it is made of rhythms ordered in equal ratio. The diastaltic mode appears more enthusiastic when it is made of rhythms whose ratio is observed to be sesquialteran. Moreover, the rhythms in slow tempo are hesychastic and the ones in fast tempo are fervent and vigorous.⁴¹

§.191. Composite rhythms are in diastaltic mode because, being composed mostly of unequal rhythms, they are passionate and bring agitation and disturbance to the soul. They become even more passionate when they are composed of several rhythms of various genera, because the composite rhythms that remain in one genus move the soul less, but those that change into other genera drug the soul with force to every change and oblige it to follow and identify itself with variety.

§.192. Psalmody being considered of the systaltic and the hesychastic modes, is more often set to rhythms of equal ratio, long and extended. The pyrrhic, that is the war dances, being considered of the diastaltic mode, are set to rhythms of sesquialteran ratios and of short, that is simple, chronoi. The dances that stand in the between and are considered of the diastaltic mode, the ones that do not lead the soul into passion but motivate it to move the body with pleasure, are set to rhythms of duple ratio but composite.

41 The more peaceful of rhythms are those beginning with theses, which restrain the intellect at the outset; those beginning with a sound on the arsis are agitating. The ones having complete feet in periods are better formed, though the ones that have the endings only are the opposite. The ones that have short empty chronoi are simple and trivial, though those that have long empty chronoi are more majestic. The ones ordered in equal ratio are more elegant because of evenness. Those in super particular ratio are for the reverse reason vibrant. The ones in duple ratio are medial as they partake of unevenness because of the inequality and of evenness because of the rhythms' integrity and the perfection of the ratio. Of rhythms in equal ratio the ones composed of short chronoi only are fastest and more fervent, but ordered. The ones composed of mixed chronoi stand in between. The ones whose feet happen to be composed of the longest chronoi produce a sense of even more order. Because of this we see that the short chronoi are useful in war dances, the mixtures in the medial dances and the longest chronoi in sacred hymns, which used extensions, demonstrating a fondness and single occupation with these and composing the heart of men by the equality and length of the chronoi into orderliness, as this is the healthy condition of the soul.

Those observed in sesquialteran ratio were more enthusiastic, as afore said. Of these, the epibatos has more motion, agitating the soul with the double thesis, but lifting the intellect upwards with the size of the arsis. Of those that are in duple ratio, the simple trochees and iambs exhibit speed and are fervent and danceable, while the orthoi and marked trochees, having more long sounds, lead to dignity. So, such are the simple rhythms.

The composite ratios are certainly more passionate because most often the ratios of the rhythms constituting them are unequal and give a very agitating impression. Moreover, they do not always preserve the same order of their unordered rhythms, but they might start with a long and end on a short, and the reverse; and sometimes they begin from the thesis, sometimes the other way to produce the design of the period. This is even more the case with those ratios composed of more than two rhythms, for the unevenness in them is greater and, therefore, by increasing the varied motions of the body, they bring the intellect into no little agitation." Aristides. Book II, 97.

CHAPTER XIII

On the Alteration of Rhythms

§.193.

AS THE SOUL REJOICES THROUGH THE EYES WITH THE VARIETY OF COLOURS, through touch with the variety of touches, through tasting with the variety of food and through smelling with the variety of smells, in the same way the soul is variably disposed with the variety of sounds and rhythms, through hearing. For this reason, the musicians having certain aim make use of the alteration in rhythms.⁴²

§.194. Alteration is to change either the rhythms or their tempo. Therefore, the faster or slower declamation of melos, if it occurs when moving from one rhythm to another, is called rhythmic alteration.⁴³ When the same rhythm is preserved, while its chronoi retard or speed up, it is called Alteration of tempo.

§.195. Tempo is the velocity or retardation of the chronoi. That is, when the ratio of the theses to the arses is preserved but the size of each chronos moves differently. For example, if we have the rhythm 0 0 0 1 1 1, which is called trochoid choreic dactyl, which we meet in various mele, we find that while the ratio of the three theses to the three arses is preserved, time spent in one melos for this same rhythm is less than in another, in such a degree that the melos containing the rhythm ten times spends equal time with another containing the same rhythm five times. In rhythm, therefore, the ratio of the theses to the arses is predetermined but the tempo is undetermined.

§.196. Tempo alteration appears in all the cheroubika and the kœnonika that have kratemata. The alteration is notated $\overset{\frown}{\chi}$ for the fast and $\underset{\frown}{\chi}$ for the slow, because the cheroubika and the kœnonika are chanted in slow tempo but the kratemata, in fast. Nonetheless, no matter if their tempo is altered or not, they preserve from beginning to end one and the same rhythm.

§.197. Tempo alteration is not always allowed. It is allowed in the cheroubika and the kœnonika because of their kratemata, as well as in other papadic mele like the polyeleoi, pasapnoaria, œkoi, mathemata,

dochæ etc. In doxologies tempo alteration to the faster is allowed in Ἅγιος ὁ Θεὸς etc. It is allowed to the slower in the Asmatikon. In the calophonic heirmoi it is allowed in those melodic theses that are indicated with tempo marks.

42 “We observe that many such things occur with rhythms, as, while the ratio determined by the genera remains, the sizes of the feet change, because of the tempo’s power; or, while the sizes remain, the feet become dissimilar. And this size has the power both on the foot and on the conjunction. It is obvious that the differences of divisions and shapes happen on a stable size. To conclude, rhythmopœia moves in many movements of many kinds, although the feet by which we mark the rhythms have simple and always the same movements.” Aristoxenos, Book II, 34.

43 Thus, the rhythms of the pestes move to semai, according to the Ottomans.

CHAPTER XIV

On Rhythmopœia

§.198.

RHYTHMOPŒIA IS THE POWER TO CREATE RHYTHMS. RHYTHMOPŒIA IS DIVIDED INTO THREE: LEPSIS, chresis, mixis. Lepsis is to know which rhythm to make use of. Chresis is to render the correct arses to the theses. Mixis is to interweave the feet of the rhythms with each other, because perfect rhythmopœia is the one where all rhythmical shapes are included.

§.199. If you consider the creation of a rhythm, you should display all the minimal chronoi and separate them in rhythmic shapes. If these shapes have to each other a ratio that exists in the chronoi of the feet, then the shape is rhythmical; if not, then reshape them again until the division of the number has a ratio.

§.200. So, when there is a decade, 0000000000, you should observe that a rhythm cannot be made out of a pair and an octave, because rhythmically, the fourfold ratio is not good. If you divide the octave into a triad and a group of five, again in this mode you still have not a rhythmic ratio. But if you divide the five into three and two, 000, 00; 000, 00, then each three has a sesquialteran ratio to each diseme. Therefore, dekaseme consists of those.

§.201. Or, again, divide the decaseme into six and four 000000, 0000, constituting a rhythmic shape of hexaseme and tetraseme, which have a sesquialteran ratio. Lets, finally, divide the dekaseme into two pentasemes 00000, 00000; those may either be both simple, having thus the ratio of equality, or divide them as composite into triseme and diseme, as said above.

§.202. The lepsis, therefore, showed us three rhythmic formations, 000, 00, 000, 00; 00000, 00000; 000000, 0000. The chresis will render the correct arses to the theses, since no foot consists of theses alone. If in the first rhythmic formation you make out of the three points of the first group of five, two theses, one long and the other short, and out of the other two points, a long arsis, the first group of five becomes a

diaguios pæon $\dot{0} 0 \dot{1}$; the same happens with the second group of five of this shape. Therefore, the entire decaseme rhythm gives two diaguios pæons $\dot{0} 0 \dot{1}, \dot{0} 0 \dot{1}$; because it was divided in sesquialteran ratio, which governs the pæonic genus.

§.203. In the second rhythmic formation, which consists of a group of six and a group of four and has the sesquialteran ratio 000000, 0000 if you make three long theses and two arses, long also, you have the epibatos pæon $\dot{0} 1 \dot{0} 0 1$.

§.204. In the third rhythmic formation, consisting of two groups of five and having the ratio of equality, if you make out of the first points five short theses and out of the remaining five points, five short arses, you create the quintuple proceleusmatic. Since, however, this foot is not in use, you should analyze the group of five into a triad and a pair $0 0 0, 0 0$. Thus, you produce a trochee out of the triad, $\dot{0} 1$, and a proceleusmatic out of the pair, $\dot{0} 1$. In a similar way it is possible to produce an iamb and a proceleusmatic, $1 \dot{0}, 0 1$. out of the other group of five.

§.205. Mixis interweaves the feet that are prepared and constructs an entire rhythm. For example, when a pæon is interwoven with another pæon, a decaseme rhythm is constructed $\dot{0} 0 \dot{1} \dot{0} 0 \dot{1}$. But when a pæon is interwoven with a proceleusmatic and an iamb, this decaseme rhythm is constructed $\dot{0} 0 1 0 1 1 \dot{0}$.

§.206. If a spondee is interwoven with a proceleusmatic, $\dot{0} \dot{1} 0 1$ is produced, called greater ionic. When one iamb is interwoven with three trochees, $1 \dot{0} 0 1 \dot{0} 1 \dot{0} 1$ is produced.

§.207. Mixis interweaves not only feet with feet, but also rhythms with feet and rhythms with rhythms, to set up a body of rhythms. An example is the porsodiac of three, composed of a proceleusmatic foot and a bacchic rhythm $0 1 1 \dot{0} \dot{0} 1$. This porsodiac $1 \dot{0} \dot{0} 1 \dot{0} 1 0 1$ was composed of a bacchic rhythm and a greater ionic rhythm. So, that much we may say about rhythms, which were stated by Aristides Quintilianus.

CHAPTER XV

On the Cheironomia

§.208.

CHEIRONOMIA ACCORDING TO THE ECCLESIASTICAL MUSICIANS IS MOTION OF THE HAND DONE WITH THE PURPOSE TO MAKE A MELODY VISIBLE AND TO MEASURE TIME ELAPSING, in accordance with the rules of rhythemics. As the ecclesiastical musicians say:

The cheironomia is law handed over to us by the Holy Fathers. The chanter begins the cheironomia the instant his voice is emitted, in order to indicate, by this cheironomia, the melos that has started. The chanter is using the cheironomia as an assistant who knows the various ratios, so that he might sing harmonically and not carelessly.

§.209. It is said that the cheironomia was indispensable to the chanter, because by it he was able to see the compositions of the quantitative and qualitative neumes by which every melody was written. Therefore, whoever knew the cheironomia well, chanted harmoniously, rhythmically and orderly. Today, however, it is of no other use to us but as information about the etymologies of some neumes which got their name from the cheironomia.

§.210. The ison was thus called because it keeps the sound unbending. Its cheironomia was done the way we do the sign of the Cross, three fingers forming the symbol of the Holy Trinity.

§.211. The oligon was called thus because with it we ascend a little, that is, an interval of one tone, while with the kentema we ascend two tones discontinuously, and with the hypsele, four tones. We compare the oligon with the kentema and the hypsele, because the first inventors of the neumes used those three neumes only for the ascent. The cheironomia of the oligon was done with the gesture that symbolises our Lord's holy hand when he said: "Shoot the net to starboard and you will make a catch."

§.212. The petaste got its name from the cheironomia, because when done, the hand went up and skimmed. This gesture was done with the five fingers held together and appeared as if the hand was fly-

ing the way the Lord's hand is symbolised when he said to the paralytic: "Take up your bed and walk".

§.213. Etymologically, the kentema derives its name from its cheironomia, because the person who did it formed his index finger as if pricking. The two kentemata had the same cheironomia. Both cheironomia were done the way divinity and humanity are symbolised.

§.214. The hypsele was so called because no other neume rises the voice so high. The chamele was so called because no other neume lowers the voice so much; and what lies low down is called chamelon. The hypsele and the chamele had no cheironomia for themselves alone, as does the kenetema, because four neumes, the kentema, the hypsele, the elaphron and the chamele were called pneumata and had a common cheironomia with the somata, which is what all the rest neumes were, except for the hyporrhoe, which was neither soma nor pneuma.

§.215. The apostrophos was so called because it turns the voice away from high pitch towards low and is the reverse of the oligon. The elaphron was so called because two notes were descending with lightness and not the way they descend with the two apostrophoi. The hyporrhoe was thus named, because, it is said, the voice flows in the larynx like water among small stones.

§.216. From the emphasis it seems that the cheironomia had the genus of a dactylic rhythm and was executed on the double proceusmatic foot, or else, the meter 4, which is accomplished in two these and two arses (§.164). Because old mele, chanted while the cheironomia was still practiced are found to preserve the emphasis (§.170) when measured with that meter.⁴⁴

44 The cheironomia begun to be practiced in the church right away with the use of chanting. It reached its highest point under the emperor Theophilos the year 830 A.D. because it was indeed performed by kings too; and this emperor found it very entertaining to do the cheironomia even in joyful celebrations. After the fall of the Roman Empire, the cheironomia decayed gradually but was preserved at least up to the year 1640, as at that time a certain Jacob, a Venetian barbarian, asked the protopsaltes Demetres Tamias from Crete, what is the reason for the custom of the cheironomia and the chanting of the terere in the Eastern Church. At the request of Demetres Tamias the answer was given by the philosopher Gerasimos, a Vlach and Cretan. In our days, however, the application of the cheironomia is absolutely unknown. "With the blessing and nodding of our most holy Archbishop, they (the four domestikoi of the Great Church), start the God-pleasing praise, formulated by the very lips of our most wise King Leon, sent from God. And together with the utterance of this and the artful motion of the cheironomia, all persons attending, sing and chant unanimously the sacred song, as if dropped from the honey-dropping lips of all the faithful subjects." Constantinos Porphyrogenetos, Vol. IV, p. 429.



THIRD BOOK

CHAPTER I

On the Genera in Music

§.217.

GENUS IN MUSIC IS DIVISION OF A TETRACHORD. The genera in music are three, the diatonic, the chromatic and the enharmonic. Diatonic genus is for us,¹ the one that fills in the diapason system with seven tones, three major, two minor and two minimum (§.51)

§.218. Tetrachord is order of notes sung successively, whose extremes are symphonous with each other on the diatessaron system. For example, zo ne pa bou is called a tetrachord because it consists of four successive notes and because the extreme zo is symphonous with the extreme bou.

§.219. The ancient Greeks called diatonic genus on the diapason system what was also known as Pythagorean octachord, which is

ke, zo, ne, pa, bou, ga, di, Ke.

Pythagoras discovered that this proceeds from low to high in the following order: leimma, tone, tone, that is zo-ne, ne-pa, pa-bou (which is the diatessaron system) and again, leimma, tone, tone, that is bou-ga, ga-di, di-ke (which is another diatessaron). Then he added at the beginning the proslambanomenos, Ke, at the distance of a tone.

§.220. The ratio of the interval of a tone is 9:8. The ratio of the interval of the leimma to that of the tone is 13:27. All the intervals of the Pythagorean octachord were known with these numbers, as stated by Aristides:

¹ We say "for us" because our diatonic genus is different from that of the ancient Greeks and from the one of the Europeans, as it will become obvious in the following.

9216, 8192, 7776, 6912, 6144, 5832, 5184, 4608
ke, zo, ne, pa, bou, ga, di, Ke.

§.221. When these seven intervals were doubled, the bisdiapason system was produced, which Pythagoras divided into five tetrachords, from the proslambanomenos to the nete hyperbolaion: tetrachord hypaton, tetrachord meson, tetrachord synemmenon, tetrachord diezeugmenon and tetrachord hyperbolæon.

				tetrachords
tone	Nete hyperbolæon	2304	ke	
tone	hyperbolæon diatonos	2592	di	
leimma	trite hyperbolæon	2916	ga	hyperbolæon
tone	nete diezeugmenon	3072	bou	
leimma	syn. diat. + trite diezeug.	3888	ne	diezeugmenon
apotome	paramesos	4096	zo	
leimma	trite synemmenon	4374	zo ϑ	synemmenon
tone	Mese	4608		
tone	meson diatonon	5184	di	
leimma	parhypate meson	5832	ga	meson
tone	hypate meson	6144	bou	

tone	hypate diatonos	6912	pa	
				hypaton
leimma	parhypate hypaton	7776	ne	
tone	hypate hypaton	8192	zo	
	Proslambanomenos	9216	ke	

§.222. The hypaton tetrachord contains the strings zo, ne, pa, bou. The meson tetrachord contains the strings bou, ga, di, Ke. The synemmenon tetrachord contains the strings ke, zo ϑ, zo, ne or zo, zo, ne pa. The diezeugmenon contains the strings zo, ne, pa bou and the hyperbolæon tetrachord contains the strings bou, ga, di ke.

§.223. Synaphe is called when there is a common note in the midst of two tetrachords sung successively, as zo, ne, pa, bou; bou, ga, di, ke, whence the term synemmenon tetrachord. Diazeuxis is called when there is the interval of a tone between two tetrachords sung successively, as ke, zo, ne, pa; bou, ga, di, ke, hence the term diezeugmenon tetrachord.

§.224. The proslambanomenos does not conduce to the formation of the lower string's tetrachord. It was added for no other reason, but to complete the lower octave and to lead the Mese to the middle of the bisdiapason system, in other words, of the fifteen-chord.²

§.225. Our scale of the diatonic genus

pa bou ga di, ke zo ne Pa

consists of two similar disjunct tetrachords. Their similarity results from the proportionally equal intervals of their tones, as the six intervals within the two tetrachords are found equal when examined

² The proslambanomenos, says Aristides, was called so because it is not associated with any of the tetrachords mentioned, but is put in additionally in order to form an octave with the mese, as its tonal ratio to the hypate hypaton is equal to the ratio of the mese to the paramesos. Hypate hypaton was called the string next to the proslambanomenos because it is the first string to be put in the first tetrachord and in old times the first was called hypaton. Parhypate is the one lying next to it.

in pairs. For example, pa-bou is equal to ke-zo, bou-ga is equal to zo-ne and ga-di is equal to ne-Pa. In any other way considered, they are unequal.

§.226. If one wants to know how the intervals of the scale of our diatonic genus on the diapason system are represented with numbers, we say that this is what we found the closer to truth possible:

$$1 \quad \frac{8}{9} \quad \frac{22}{27} \quad \frac{3}{4} \quad \frac{2}{3} \quad \frac{11}{18} \quad \frac{7}{16} \quad \frac{1}{2}$$

di ke zo ne pa bou ga Di.³

It follows that we find the ratio between two tones by observing the relations of these fractions and by multiplying the numerator of the first by the denominator of the second and again the numerator of the second by the denominator of the first. For example, pa : bou :: $\frac{2}{3}$: $\frac{11}{18} = 36 : 33 = 12 : 11$. And again, ke : zo :: $\frac{8}{9}$: $\frac{22}{27} = 216 : 198 = 108 : 99 = 12 : 11$.

§.227. The European musicians, having understood that the vibrations of the strings are different from their various lengths, thought it reasonable to define the ratios of the tonal intervals with the vibrations. They say, therefore, that the numbers of the vibrations that illustrate their tones are in the reverse ratio to the strings' lengths. They are as following:

$$1 \quad \frac{8}{9} \quad \frac{4}{5} \quad \frac{3}{4} \quad \frac{2}{3} \quad \frac{3}{5} \quad \frac{8}{12} \quad \frac{1}{2}$$

ut re mi fa sol la si Ut.

§.228. When we want to find the ratio between two of their tones,

³ The interval di-ke is larger than the ke-zo and the ke-zo is larger than the zo-ne. If it is supposed that di-ke is equal to 12, then, ke-zo will be equal to 9 and zo-ne equal to 7. On the string, consequently, we find the ratio of di-ke to ke-zo to be equal to $\frac{1}{3}$: $\frac{1}{12}$ and its ratio to zo-ne equal to $\frac{1}{3}$: $\frac{7}{108}$.

Proof

Since $12 : 9 :: \frac{1}{3} : \chi$, then $12\chi = 9 \cdot \frac{1}{3}$ and $\chi = \frac{1}{12}$. And again, since $12 : 7 :: \frac{1}{3} : \chi$, then $12\chi = 7 \cdot \frac{1}{3}$ and $\chi = \frac{7}{36}$ and $\chi = \frac{7}{36} = \frac{7 \cdot 3}{36 \cdot 3} = \frac{7}{108}$.

One could experience this truth as follows: He takes two pandourides, one of which is not fretted, while the other is fretted with the tones of our music as precisely as possible. He then makes the buzz of the unfretted padouris symphonous with the ne of the fretted one and supposes that this buzz is di. He then plays on the fretted pandouris pa and searches for its symphony on the unfretted pandouris. Wherever he finds it, he writes ke. He then divides this newly found interval di-ke into twelve sections. Then, he makes the same buzz symphonous to pa and plays bou; then he looks for its symphony and wherever he finds it, he writes zo. He then makes the same buzz again symphonous with bou, plays ga, looks for its symphony and wherever he finds it, he writes ne. Then he observes the newly written notes and finds out that ke is written on 12, bou on 9 and ga on 7.

we do as said above (§.226). When we want to find the ratio of two tones, one of their kind, the other of our kind, then we represent every tone with two notes and two fractions and, doing as above, we find the ratio of each tone separately. For example, when we want to know what is the ratio of di to re, we do as follows: Since $ga : di :: \frac{9}{16} : \frac{1}{2} = 18 : 16 = 9 : 8$ and since $ut : re :: 1 : \frac{8}{9} = 9 : 8$, then di is equal to re.

Here is a table where are noted down some intervals, the most necessary to know:

di : ke	9 : 8	re : mi	10 : 9
ne : pa	9 : 8	sol : la	10 : 9
ga : di	9 : 8	ut : re	9 : 8
pa : bou	12 : 11	la : si	9 : 8
ke : zo	12 : 11	mi : fa	16 : 15
bou : ga	88 : 81	si : ut	16 : 15
zo : ne	88 : 81	fa : sol	9 : 8
pa : di	4 : 3	la : re	27 : 20
ke : pa	4 : 3	mi : la	4 : 3
di : Di	1 : $\frac{1}{2}$	re : Re	1 : $\frac{1}{2}$
pa : Pa	1 : $\frac{1}{2}$	la : La	1 : $\frac{1}{2}$

CHAPTER II

On Semitones

§.229.

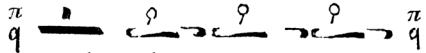
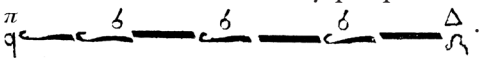
TONES HAVE BEEN CALLED THE SEVEN INTERVALS OF THE DIATONIC SCALE PA BOU GA DI KE ZO NE PA. When any one of them is divided into two, but not exactly in the middle, and we consider one of the resulting intervals, this is called a semitone.⁴

§.230. When at the interval of a tone, considered ascending, the interval of a semitone is added so that one interval is made out of the two, their result is called diesis. Diesis, in other words, is the increase of a tone; when, that is, the tone is silenced and, instead, the semitone over it is pronounced. The diesis is notated with the sign δ . The decrease of the tone, that is, when the tone is silenced and, instead, the semitone below it is pronounced, is called hyphesis and is notated with the sign ρ . Both the diesis and the hyphesis refer to the higher pitch. When they refer to the lower, the reverse occurs. This means that the increase of the tone produces an hyphesis and its decrease, a diesis.

§.231. So, I do a diesis, if for example when descending from ke, I omit the tonal interval of di and take instead one or two thirds of this tone; or else, one, two or three quarters of it. In the same way I do dieses to all other intervals of the diatonic scale. We are able to observe all this on a string only.⁵

§.232. I do an hyphesis when, descending from ke, I omit the tonal interval of di and, adding one or two thirds, or one or two or three quarters, I get this interval thus composed and pronounce di. The same way, I do hypheses to all the other intervals of the diatonic scale.

§.233. To sum up, diesis is the note of a tone of the scale which has been raised by a semitone. For example, in the scale pa bou δ di ke zo δ Pa, the two dieses show that the notes ga and ne are pronounced a semitone higher than the natural ones. Hyphesis is the note of a tone of the scale lowered by a semitone. For example, in the scale pa bou ρ di ke zo ρ Pa the two hypheses signify that the notes ga and ne are recited a semitone lower than the natural ones.

§.234. When the diesis or hyphesis of a tone is recited, the note of the tone whose diesis or hyphesis we pronounce, is completely silenced, because our music, as well as that of the Ottomans, requires that the scale is filled in with seven intervals. In European melodies though, the tone, the diesis and the hyphesis might all be recited. When we wish to write such melodies, therefore, we use the ison on which we add the hyphesis or the diesis. For example, here is how the melody di di ga ga bou pa pa is written: π  and here is how the melody pa pa bou bou ga ga is written: π 

4 Semitone does not mean the tone divided exactly in two, as twelve into six and six, but indefinitely, as twelve into eight and four, or nine and three etc. So, the tone ga-di is divided into two intervals, the higher of which is one third and the lower, two thirds etc. Therefore, the latter interval might be further divided. The semitones of the tones bou-ga and zo-ne, however, are the smallest and cannot be further divided, because they are considered as one quarter of the major tone each, that is as 3 : 12.

5 The signs δ and ρ are used indefinitely for any interval greater or smaller than a tone. When exact inquiry into these is required, this is how they are notated, in ascent:

Increase		Decrease	
the δ for one quarter	$\frac{1}{4}$	the ρ for one quarter	$\frac{1}{4}$
the δ for two quarters	$\frac{2}{4}$	the ρ for two quarters	$\frac{2}{4}$
the δ for three quarters	$\frac{3}{4}$	the ρ for three quarters	$\frac{3}{4}$
the δ for one third	$\frac{1}{3}$	the ρ for one third	$\frac{1}{3}$
the δ for two thirds	$\frac{2}{3}$	the ρ for two thirds	$\frac{2}{3}$

CHAPTER III

On the Differences in Notes

§.235.

OF WHAT HAS BEEN SAID, IT BECOMES OBVIOUS THAT ONLY THE THREE MAJOR TONES OF OUR DIATONIC SCALE ARE EQUAL WITH THE ONES OF THE ANCIENT GREEKS, the other being unequal. The leimma of the Ancient Greeks or the semitone of the Europeans si-ut are smaller than our minimum tone bou-ga. For this reason the notes of our diatonic scale are recited differently, some being identical, some higher and some lower. Ga and di are recited on the same interval as the European ut and re and are in no way differing from them in height or lowness. Ke is slightly higher than mi, zo is a semitone higher than fa, ne is slightly lower from sol, pa is slightly lower too than la and bou is little lower than si.

§.236. Nearly all the hyptheses of the Europeans are little lower than our hypthesis. Although all our notes can become hyptheses or dieses, fa and ut of the Europeans cannot become hypthesis and si and mi cannot become dieses.

§.237. All notes are distinguished into three kinds, as for instance: pa natural, pa diesis and pa hypthesis. Zo, though is distinguished into four kinds: zo natural obtained from the diapason system, which forms a minor tone in the interval zo-ke, zo barys obtained from the trochos and pronounced aanes, which forms a major tone in the interval zo-ne, zo hypthesis and zo diesis.

§.238. Notes give another impression to hearing in ascent and another in descent. The ecclesiastical musicians, therefore, gave to one tone one name at the ascent and another at the descent. For example pa was pronounced annanes when related to ne, but aneanes when related to bou. This is what the quality of notes is about (§.73).

§.239. The diesis and the hypthesis do not change the quality of the notes, unless they are recited. For example, in the intervals pa bou ga di ♯ zo, if I stay around the notes pa bou ga di and do the cadence on di, the note di has the quality of the agia (§.73). But if I touch, even for

a while, on the hyphesis of ke, then, di has the quality of the necheanes. The pronunciation contributes also to the quality of notes. Thus, the quality of the annanes demands a pronunciation agreeable and smooth; and this quality is also transmitted to the notes pa and ke. But the quality of the neanes demands a pronunciation joyful and pricking; and this quality is transmitted to the notes bou and zo. The quality of the nana is buzzing and voluminous and is transmitted to ga. The quality of the agia is masculine and rough and is transmitted to di.

CHAPTER IV

On the Chromatic Genus

§.240.

CHROMATIC GENUS IS THE ONE IN THE SCALE OF WHICH EXIST SEMITONES DERIVED FROM HYPHESES, OR FROM DIESES OR FROM BOTH HYPHESES AND DIESES. The scale with the hyptheses is:

ne ϑ bou ga, di ϑ zo Ne.

The one with the dieses is:

pa bou ζ di, ke zo ζ Pa.

The scale with both dieses and hyptheses is:

pa ζ ϑ di, ke ζ ϑ Pa.

In this scale we find two dieses and two hyptheses.

§.241. Chroma in music is what has the power to paint the quality created by the notes of the diatonic scale and produce the quality of a different ethos. This is what the dieses and the hyptheses can do. Just one hypthesis is able to paint the series of notes in a tetrachord and make it seem as something completely different. The change becomes even greater with two hyptheses.⁶

§.242. The chroma, Euclides says, is sung at descent with a trisemitone, a semitone and a semitone again, like ga ζ bou ϑ pa ne ζ, the interval ga-bou being a trisemitone as the ga is in hypthesis and bou in diesis – the interval bou-ga being a semitone and the pa-ne another semitone. At the ascent, it is sung reversely: semitone, semitone and trisemitone, ne ζ pa bou ϑ ga ζ.

§.243. The chromatic genus is not confined to give one only scale, as is the diatonic, but it can construct two entirely chromatic scales and two mixed, listed here below:

ne ϑ bou ga di ϑ zo Ne	}	The entirely chromatic
pa ϑ ζ di ke ϑ ζ Pa		
pa ζ ϑ di ke zo ne Pa	}	The mixed. ⁷
pa bou ga di ke ϑ ζ Pa		

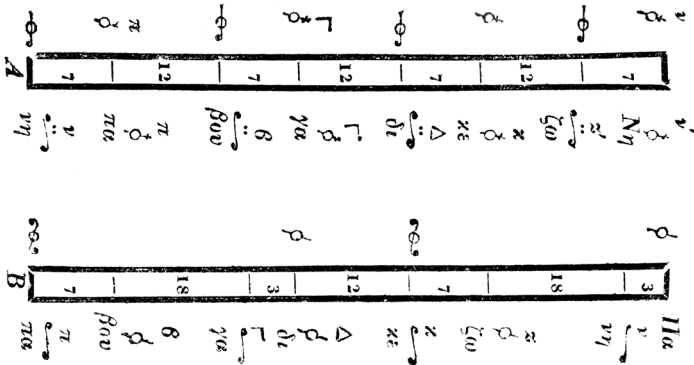
§.244. The chromatic scale ne ϑ bou ga di ζ zo Ne does not form

tetrachords, but trichords which are absolutely similar and conjunct to each other in this manner:

ne ϑ bou, bou ga di, di ϑ zo, zo ne Pa.

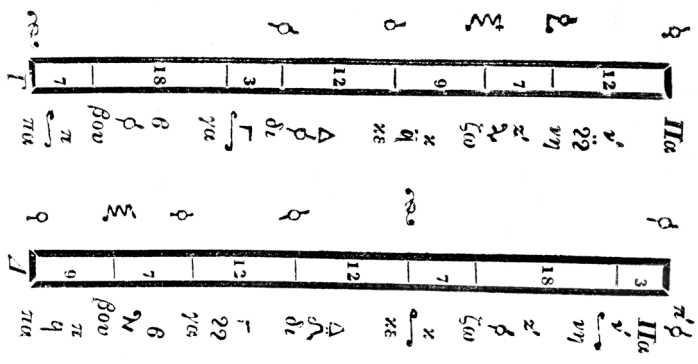
When this scale starts with di and its direction is towards lower pitch, it requires that the interval di-ga is a major tone, ga-bou a minimum tone, bou-pa a major tone and pa-ne a minimum tone. When it is directed towards higher pitch, it demands that the interval di-ke is a minimum tone, ke-zo a major tone, zo-ne a minimum tone and ne-Pa a major tone. It follows that among the notes of the this chromatic scale, only bou, ga and di are identical with the notes bou, ga and di of the diatonic scale, though the rest are movable; because, in this chromatic scale the interval bou-ne comprises a major tone and a minimum tone, though in the diatonic scale it comprises a minor and a major tone. The same holds for the interval di-zo.

§.245. The chromatic scale pa ϑ ϑ di, ke ϑ ϑ Pa consists of two tetrachords. In each, the semitones are situated in such a way that the interval pa-bou is equal to ke-zo, bou-ga equal to zo-ne, ga-di equal to ne-Pa and the entire tetrachord pa-di is equal to the tetrachord ke-Pa. The interval pa-bou is equal to a minimum tone, the bou-ga is a trisemitone and the ga-di a semitone, that is it equals 3/12.



6 The different ethos that the change of the genus causes to a melody may be experienced this way: On an instrument, play in the chromatic genus a melody of the diatonic genus. You will then realize that it is altered as much as a Greek Homeric verse is altered in verbal speech, when pronounced by an Arab who ignores the Greek language.

7 It is possible to generate even more entirely chromatic or mixed scales, about which we speak later. The ones listed here are the most commonly used and they constitute echoi.



CHAPTER V

On the Notes of the Chromatic Genus

§.246.

THE ECCLESIASTICAL MUSICIANS HANDED OVER TO US FOUR NOTES IN THE CROMATIC GENUS:

necheanes, nenanō, neanes, nenano.

Among these notes, we use the two middle ones when we ascend and the two extreme when we descend. For example, the tune on which we chant the scale A, ne ϑ bou ga di ϑ zo Ne:

$\nu\eta$
 Ne ε χε α βεσ ϑα ϑω ϑε α βεσ
 βε ϑα ϑω ϑε α βεσ βε ϑα ϑω ϑε
 ε α βεσ βε ϑα ϑω βε χε α βεσ
 βε ϑα ϑω ϑε α βεσ βε ϑα ϑω ϑε α βεσ
 βε ϑα ϑω ε χε α βεσ

applying the intervals of a minimum and a major tone as defined (§.244).

§.247. We chant with the same notes the scale B, pa ϑ ϑ xx di ke ϑ ϑ Pa and their melody is written with the same neumes, but the notes preserve the intervals defined (§.245). The necheanes of the scale A, therefore, differs from the necheanes of the scale B as the former sounds with the interval of a minimum and a major tone, though the latter, with the interval of a minimum tone and a trisemitone. For

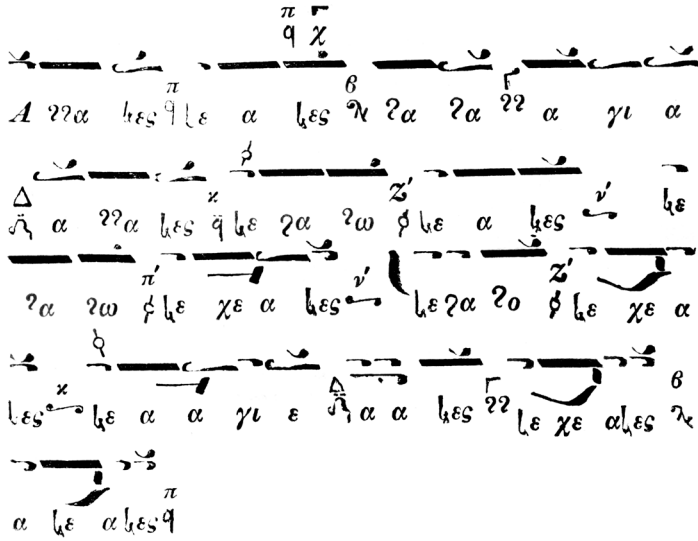
the same reason differ from each other the notes neanes, nenanō and nenano.

§.248. Among the eight notes of the chromatic scale B, four, the pa, di, ke and Pa are immovable, that means that they are the same with those in the diatonic scale, their pitch not differing from them in lowness or height. The remaining four move into hyptheses and dieses. The martyria of each appears at the scale B.

§.249. The mixed scale having two dissimilar tetrachords, one chromatic, the other diatonic, requires that the chromatic is pronounced with the chromatic notes and the diatonic with the diatonic ones. The notes of the mixed scale C, pa ϑ δ di ke zo ne Pa are, therefore, chanted and written thus: $\overset{\infty}{\pi\alpha} \overset{\Gamma}{\chi}$.

The image shows four lines of musical notation for a mixed scale C. Each line consists of a series of notes connected by lines, with various symbols above and below them. The symbols include pi (π), beta (β), gamma (γ), and infinity (∞). The notes are written in a stylized, handwritten font. The first line starts with 'Nε' and ends with 'λες'. The second line starts with 'λε' and ends with 'α'. The third line starts with 'α' and ends with 'αλες'. The fourth line starts with 'λε' and ends with 'α'. The notes are arranged in a way that suggests a specific melodic sequence.

§.250. The first tetrachord of the mixed scale D, pa bou ga di ke ϑ δ Pa, is said with the diatonic notes, but its second tetrachord is said with the chromatic notes. Their melody is chanted and written thus:



§.251. Examining the chromatic notes with regard to their quality, we find that the neanes and necheanes are emitted freely and brilliantly, the sound being pronounced with delicacy and sweetness. This quality prevails over the entire chromatic scale A. The nenanō and nenano are pronounced gravely and wildly and the voice is emitted with volume and a certain degree of mournfulness. This quality prevails over the entire chromatic scale B.⁸

§.252. The martyriæ of the chromatic scale A are done by adding the consonants of the monosyllable notes to those two signs $\overset{\cdot}{\cdot}$ ϕ . Thus, di has the martyria $\overset{\Delta}{\phi}$, ke has the martyria $\chi\phi$, etc. The martyriæ of the chromatic scale B are done by adding the above to these two signs $\overset{\cdot}{\cdot}$ β . So that di has the martyria $\overset{\Delta}{\beta}$, ga has the martyria $\overset{\Gamma}{\beta}$ etc. In mixed scales, the martyriæ of the chromatic notes are done as said above, and those of the diatonic notes as said in §.101.








⁸ Neanes and necheanes are in essence one word and indicate just one note, because the note that we call neanes when ascending, we call necheanes when descending. Consequently, they both preserve one kind of quality. Similarly, the nenanō and the nenano are just one word which indicates just one note. They both, therefore, have the same quality.


CHAPTER VI

On the Parallage of the Chromatic Genus

§.253.

IF WE HAVE SAID THAT IN THE DIATONIC GENUS IT IS MORE USEFUL TO DO THE PARALLAGE WITH THE MONOSYLLABLE NOTES, we did it in order to get rid of difficulties and turn to facility. In the chromatic genus, however, we say that the parallage must be done with the polysyllable notes until the sense of hearing gets satisfactorily used to them. Then, it will be possible to use the monosyllable notes also.⁹

§.254. For the praxis of the parallage, we see before the melody, if it is chromatic and which martyria is written. If we see the martyria , it becomes obvious that starting note is di, pronounced neanes; if it is the , it becomes obvious that starting note is ke, pronounced neanes; if it is the , it becomes obvious that starting note is ne, which is pronounced necheanes; if it is the , it becomes obvious that starting note is pa, pronounced necheanes; if it is the , the starting note will be ga, pronounced nenanō; if it is the , starting note will be di, pronounced in the same way and if it is the , starting note will be ga, pronounced neanes.

§.255. Lets write this parallage with the neumes used to write the diatonic parallage. As before the neumes is written the martyria , pronounce the ison necheanes, the first apostrophos, nenano and the second, necheanes; next, the first oligon, nenanō, the second, neanes and the third, nenano; then again, the first apostrophos, necheanes etc.

The parallage of the chromatic genus sung successively:

§.256. Concerning non successive singing, as well as all the neumes

⁹ When teachers teach this highly melodic genus, they should pay attention that the students observe carefully the pronunciation of these monosyllable notes, because after been taught the diatonic genus, the students get used to pronounce them with the intervals of this genus and then, it is not easy for them - hearing the notes pronounced differently in the chromatic genus - to recite them on the chromatic intervals. And this is the medium through which our ancestors preserved up to us this genus of melody.

^π Πα νη ζω νη | πα βου πα νη | πα ββ γα ββ
πα ββ γα δι | γα ββ γα δι | κε δι γα ββ
γα δι κε ζω | κε δι γα δι | κε ζω νη
ζω κε δι κε ζω | νη πα νη ζω κε δι κε ζω
νη ζω κε δι | γα δι κε ζω | κε δι γα βου
γα δι κε δι | γα ββ πα ββ | γα δι γα ββ
πα νη πα ββ | γα ββ πα νη ζω νη πα ^π (α).

of notes and the hypostases, whatever has been said about the diatonic genus is to be understood for the chromatic also.

CHAPTER VII

On the Enharmonic Genus

§.257.

ENHARMONIC GENUS IS THE ONE IN THE SCALE OF WHICH ARE SEMITONES, actually quarters of a major tone, either as hypheses or dieses or as both hypheses and dieses.

As hypheses thus:

pa bou ϑ di ke zo ne Pa.

As dieses thus:

pa ó ga di ka zo ne Pa

As dieses and hypheses, thus:

pa ó ga di ke ϑ ne Pa.

§.258. Harmony is called in music the genus that has in its scale intervals of a quarter of the major tone. Such an interval is called enharmonic hyphesis or enharmonic diesis, as the interval which is half a major tone is called chromatic diesis. Since the minimum tone, considered equal to 7, gives when divided into 3 and 4, a quarter and a third of the major tone, when we get an interval bou-ga, equal to 3, we find the enharmonic diesis, which when we apply in the scale we perform the enharmonic genus. Aristides says, the enharmonic genus is characterised by the dieses that are quarters of the tone.

§.259. In Euclid's times the enharmonic genus was sung in descent as ditone, diesis, diesis, or else, ditone, quarter, quarter. In ascent it was sung reversely, diesis, diesis, ditone, or else, quarter, quarter, ditone. But in our days melodies of such scales are not preserved. Instead, one enharmonic diesis and one enharmonic hyphesis exist in two tetrachords, not in one.

§.260. In the scale pa ó ga di ke ϑ ne Pa there are one diesis and one hyphesis of the enharmonic genus as the intervals bou-ga and ke-zo have a size no greater than nearly a quarter of the major tone, while zo hyphesis is here lower than the one in the chromatic scale Pa ϑ ó di, ke ϑ ó, Pa (§243).

§.261. The two tetrachords of the same scale, pa ó ga di, ke ϑ

ne Pa, are dissimilar regarding their middle intervals. For this reason, when the melody of the enharmonic genus starts with ga, it is zo hypothesis that should be symphonous with ga and not the note ne. What is accomplished in the diatonic and the chromatic scales with the tetraphony, is accomplished here with the triphony:

ne pa ó ga, ga di ke ϑ, ϑ ne pa ϑ.

Therefore, here too, conjunct similar tetrachords are constructed because their middle intervals are equal: ne-pa is equal to ga-di, pa-ó equal to di-ke, ó-ga equal to ke-ϑ etc.

§.262. The mixed scales of diatonic and enharmonic are two as well:

pa bou ga di, ke ϑ ne Pa

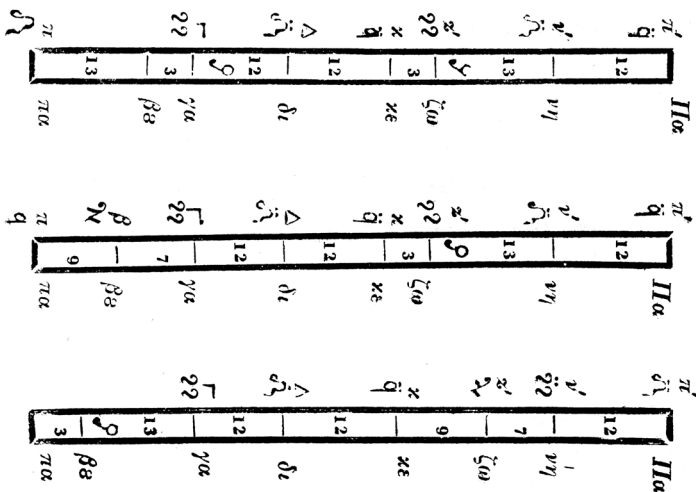
pa ϑ ga di, ke zo ne Pa.

The mixed scales of chromatic and enharmonic are two more:

pa ó ga ϑ ke zo ne Pa

pa ó ó di ke zo ne Pa.

The intervals of the first are as follows: pa-bou is greater than the major tone, bou-ga is a quarter of it, ga-di is its half and di-ke is a trisemitone. The intervals of the second scale are: pa-bou is greater than the major tone, bou-ga is equal to a major tone, ga-di is a quarter of a major tone.



CHAPTER VIII

On Shades [Chroæ]

§.265.

IMMOVABLE NOTES ARE THE TONES WHICH ARE NOT ALTERED WITH THE CHANGE OF GENUS, BUT REMAIN ON ONE TENSION. Movable or transferred notes are the tones which are altered with the differences of the genera and do not remain on one tension, in other words, the notes that indicate some times minor, some times major intervals in the various compositions of the tetrachords.

§.266. Shade is a special division of genus. Ancient Greeks produced the shades from the different divisions of the tetrachords, leaving the extremes of the tetrachord as immovable notes, while making the middle notes movable. The shades known to Euclid and mentioned by him are six, one in the enharmonic genus, three in the chromatic and two in the diatonic.

§.267. The first shade is characterised by quarter-tone dieses and is called enharmonic. Its intervals were expressed numerically thus: $6 + 6 + 48 = 60$. diesis, diesis, ditone. The second shade is characterised by dieses that are the third of a tone and is called chroma malakon. It was expressed numerically thus: $8 + 8 + 44 = 60$, diesis, diesis, trisemitone plus diesis. The third shade is characterised by dieses which are sesquialteran to the enharmonic diesis. It is called shade of sesquialteran chroma, $9 + 9 + 42 = 60$, sesquialteran diesis, sesquialteran diesis, trisemitone plus diesis. Peculiar to the fourth shade is a structure of two disconnected semitones. It is called tonic, $12 + 12 + 36 + 60$, semitone, semitone, trisemitone. The fifth consists of a semitone, an interval of three dieses and one of five. It is called malakon diatonic, $12 + 18 + 30 = 60$.¹⁰ Finally, the sixth shade has a semitone, a tone, and a tone. It is called syntonic diatonic, $12 + 24 + 24 = 60$, or $24 + 24 + 12 = 60$.

§.268. Because we consider the seven intervals of the diatonic scale

¹⁰ Close to this shade is our diatonic genus.

as tones, we are able to use six of their semitones and thus produce many scales which are representative of the shades. To do this, let us assume that the diatonic scale is the basis and let us call the scales that can possibly derive from it, shades.

§.269. When an alteration is done on one note of the scale, let us call it one-unit alteration; when on two, a two-unit, when on three, three-unit, when on four, a four-unit, when on five notes, a five-unit alteration, and when on six notes, a six-unit alteration.

§.270. Let us make the proslambanomenos and the eighth higher note, the Mese, the two extreme immovable notes - regardless if they lie on a tone or a semitone - and let us make all the in-between notes movable, depending on need. Although it is possible to produce out of one tone two dieses or two hypheses, it is impossible to put both in the scale of one diapason because then, the diapason will include eight intervals, which is inapt.¹¹

11 This is inapt for us and the Ottomans for the reason given (§.59). It is usual and possible for the Europeans because they can fill in the diapason [octave] with up to twelve intervals.

CHAPTER IX

How Many Possible Shades There Are

§.271.

LET US ASSUME THAT THE PROSLAMBANOMENOS OF THE DIATONIC SCALE PA BOU GA DI KE ZO NE DOES NOT BECOME DIESIS OR HYPHESIS WHILE THE REMAINING SIX NOTES BECOME BOTH. With the one-unit alteration, it is possible to produce twelve shades out of this scale,¹² by moving the notes into dieses or hypheses:

pa ϑ ga di ke zo ne. ¹³	pa ϝ ga di ke zo ne. ¹⁴
pa bou ϑ di ke zo ne. ¹⁵	pa bou ϝ di ke zo ne. ¹⁶
pa bou ga ϑ ke zo ne. ¹⁷	pa bou ga ϝ ke zo ne. ¹⁸
pa bou ga di ϑ zo ne. ¹⁹	pa bou ga di ϝ zo ne. ²⁰
pa bou ga di ke ϑ ne. ²¹	pa bou ga di ke ϝ ne. ²²
pa bou ga di ke zo ϑ. ²³	pa bou ga di ke zo ϝ. ²⁴

§.272. With the two-unit alteration, when two notes of the scale move into dieses and hypheses, sixty shades are produced,²⁵ eight of which are listed here:

pa ϑ ga di ke zo ϑ. ²⁶	pa ϝ ga di ke zo ϝ. ²⁷
pa ϑ ga di ke ϑ ne. ²⁸	pa ϝ ga ϝ ke zo ne. ²⁹
pa ϑ ϝ di ke zo xx. ³⁰	pa ϝ ϝ di ke zo ne. ³¹
pa bou ϝ di ke zo ϝ. ³²	pa bou ga ϝ ke ϑ ne. ³³

Up to sixty shades are produced in a similar way.

§.273. With the three-unit alteration, 160 shades are produced,³⁴ four of which are listed here:

pa ϝ ϝ di ke ϑ ne. ³⁵	pa ϑ ga ϑ ke ϑ ne. ³⁶
pa bou ϝ di ke xx ϝ. ³⁷	pa bou ϑ di ϑ zo ϝ. ³⁸

The remaining scales are produced in the same manner with three-unit alteration, up to 160.

§.274. With the four-unit alteration 240 shades are generated.³⁹ With the five-unit alteration 192 shades are produced;⁴⁰ and with the six-unit, 64.⁴¹ So, when the pa is proslambanomenos the shades that are

produced in the diatonic scale of the diapason are 728.⁴²

§.275. When it is assumed that the proslambanomenos is on a semitone, then, only two scales –the ones that have all their notes as hyphe- ses or dieses– are not included in the 728. Since, however, there does not exist any melody the scale of which has the proslambanomenos on a semitone and which has not at least one tone in the entire diapason, we do not mention them. Furthermore, when pa is not proslambanomenos, two more shades are produced from each tone, one with the pa hyphe- sis, the other with the pa diesis. As the proslambanomenoi that may possibly have the pa diesis and hyphe- sis are six, twelve more shades are produced. To conclude, out of one diatonic scale of the diapason, it is possible to derive 740 shades.

§.276. You can find out which shade each given scale refers to, by making pa –if it is not on a semitone– the proslambanomenos. For example, the scale ke ϑ ϑ pa bou ϑ di refers to the shade pa bou ϑ di ke ϑ ϑ; di ke ϑ ϑ pa ϑ ga refers to the pa ϑ ga di ke ϑ ϑ. etc.

§.277. It is considered reasonable that the ecclesiastical musicians use one of these shades as scale when composing, as long as they give evidence that before, some other ecclesiastical musician made use of the same shade too in some psalmody, and as long as they keep close to one of the eight echoi. Daniel, for example, used the shade zo ne pa bou ϑ di ϑ in the doxology he composed, but the same shade was also used by Balasios and Petros the Glykys in calophonic heirmoi. Moreover, Daniel kept close to the echos barys.

- 12 If alteration signified diesis only, then $\phi = 1$. Because it signifies both diesis and hyphesis, it equals 2. Moreover, since the notes on which these are applied are six, $2 \cdot 6 = 12$.
Because the makams of the Ottomans consist mostly of scales, we note those few scales and their makam names.
- 13 When this scale produces melos, it is called makam kurdi.
- 14 This is called busselik.
- 15 This, cazkar.
- 16 This, hicaz.
- 17 This, sebah.
- 18 This, hisar.
- 19 This, huzzam.
- 20 This, evic.
- 21 This, acem.
- 22 This, mahur.
- 23 This, zivil.
- 24 This, sehnaz. The protopsaltes Panagiotēs Chalatzoglou composed the heirmos «Εφριξε γῆ» on the scale acem.
- 25 Because the signs for the alteration are two and each is taken twice, the two together are $2 \cdot 2 = 4$. Moreover, because the notes on which the two-unit alteration is applied are six, then $(6 \cdot 5) / 2 = 15$. And $15 \cdot 4 = 60$.
- 26 This is called zail kurdi.
- 27 This, sehnaz busselik.
- 28 This, acem asiran. An example of this is a doxology by the teacher Chourmouzios on the echos barys, ϕ ne pa ϕ ga di ke ϕ .
- 29 This is called hisar busselik.
- 30 The scale of the second plagal.
- 31 Nisavereki.
- 32 Perfect sehnaz.
- 33 Arezbar. Here zo hyphesis is the zo barys, obtained from the trochos in descent, which is a semitone lower than the zo of the diapason.
- 34 Because the signs of the alteration are three and each equals 2, all three equal $2 \cdot 2 \cdot 2 = 8$. Moreover, because the notes on which the three-unit alteration is applied are six, $\frac{6}{3} \cdot \frac{6}{2} \cdot \frac{6}{3} = 20$; and $8 \cdot 20 = 160$.
- 35 This is called nissabur
- 36 This, subuleh
- 37 Humayun.
- 38 Karcihar.
- 39 Because the signs of the alteration are four, according to the above, they equal $2 \cdot 2 \cdot 2 \cdot 2 = 16$. Moreover, since the notes on which the four-point alteration is applied are six, $\frac{6}{4} \cdot \frac{6}{2} \cdot \frac{6}{3} \cdot \frac{6}{4} = 15$; and $15 \cdot 16 = 240$.
- 40 Because the signs of the alteration are five, they are equal to $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 = 32$. Moreover, because the five-unit alteration is $\frac{6}{5} \cdot \frac{6}{3} \cdot \frac{6}{4} \cdot \frac{6}{3} \cdot \frac{6}{5} = 6$, then, $32 \cdot 6 = 192$.
- 41 The signs of the alteration being six, they are equal to $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 = 64$. Moreover, because no other tone remains besides the proslambanomenos, there is no augmentation of the shades with the six-unit alteration, since $\frac{6}{6} \cdot \frac{6}{2} \cdot \frac{6}{3} \cdot \frac{6}{4} \cdot \frac{6}{5} \cdot \frac{6}{6} = 1$. And if we multiply 64 by 1, we get 64.
- 42 Because $12 + 60 + 240 + 192 + 64 = 728$.



FOURTH BOOK

CHAPTER I

On Echos

§.278.

ECHOS IS NOISE EMITTED FROM LIVING AND LIFELESS BODIES.⁴³ Noise is the state of stricken air.⁴⁴ Noise is the most primitive and general of what is audible. It is produced from the motion of the air, caused by the stroke of the noise-producing body. This body need not move entirely, but its particles only might vibrate, tremble or move. There are three things to be observed about noise: the noise producing body stricken, the air put into motion by it, and the sense of hearing hit by the moving air.

§.279. Depending on the various kinds of vibrations of the noise-producers, the air, waving in different ways, produces different distinct noises, each with its proper word: echo, warble, buzz, knock, bray, purl, brawl, stroke, din, clank, clash, shriek, roar, wail, phone,⁴⁵ sigh, speech, whisper, thunder, hiss, rustle, bellow, howl, row, gnash, bark, howl, neigh.

§.280. The musicians, having observed the ways these sounds are emitted, have at times, imitated them with great effectiveness. For ex-

43 This definition is by Aristotle. Echos (sound) is also called eche poetically. Echo is the re-sounding of shouting. Musicians in general are most interested in this echo.

The archimandrite Anthimos Gazes defines sound as: "Sound is a waving motion of the air produced by the vibrating motion of the parts of a body. Such a motion is the result of some attack. The waves or vibrations of the air, hitting at the tympanum of our ears, inflict in our souls a feeling through the nerves."

44 This definition is by Claudius Ptolemæos. Aristotle defines noise as follows: «Noise is the motion of that which is able to move the way that prominent particles move away from smooth ones, when stricken.»

45 «Phone is stroke in the air, which at a certain time, reaches the soul through the ears, that send it forward through certain paths, until it is spread in the liver.» Plato Timæus. p. 21.

ample, in the heirmos “Ἐν βυθῷ κατέστρωσε ποτέ” at the word *ἁμαρτιαν* [sin], Petros the Glykys imitated braying very becomingly. Daniel too, in “Μνήσθητι δέσποινα” at the word *στεναγμόν* [sigh] repeats the “ah” many times. Petros the Lacedæmonian in “Νέους εὐσεβεῖς” at the word *διασυρίζον* imitates hissing. There are numerous other such imitations by others too.

§.281. To musicians, in particular, echos is a systematic scale upon which a melody is worked out by proceeding in a predetermined way. Echos, in other words, is the scale of a system on which the musicians work out the melody by advancing on a predetermined way, that is, by starting with a specific note, delaying on specified notes, keeping specified intervals and ending on specified notes. All those were defined by ancient musicians.

§.282. Echos is the concept of a melody established on the habit of knowing which notes to leave out, which to keep, which to begin with, and which to end on.⁴⁶

§.283. What in old times was called mode, species, scheme or tone, differs little, if any, from our echos. It was called mode because it supposedly revealed the ethos of the melos’ spirit. The modes were created by preserving the same sizes of the systems and the same number of intervals while altering only the order and the combinations. The tetrachord system had three modes,⁴⁷ the pentachord had four,⁴⁸ and the diapason had seven.⁴⁹

§.284. In order to explain in an example the modes of the diapason, let us call our minimum tone, a semitone. So, in this system and in the diatonic genus, first mode was the one whose semitone was first in descent and fourth in ascent, like Ga bou pa ne zo ke di ga. It was called Mixolydian.

Second was the one whose semitone was third in descent and first in ascent, like bou ga di ke zo ne pa bou. It was called Lydian.

Third, the one whose semitone was second in both directions, like pa bou ga di ke zo ne Pa. It was called Phrygian.

Fourth was the one whose semitone was first in descent and third in ascent, like ne pa bou ga di ke zo Ne. It was called Dorian.

Fifth was the one whose semitone was fourth in descent and first in ascent, like zo ne pa bou ga di ke Zo. It was called Hypolydian.

Sixth was the one whose semitone was third in descent and second in ascent, like ke zo ne pa bou ga di Ke. It was called Hypophrygian.

And seventh, the one whose semitone was second in descent and third in ascent, like di ke zo ne pa bou ga Di. It was called Hypodorian.

46 Aristides calls this peteia. He says that some notes are left out because every species of melody has limited extremes in ascent and descent.

47 The modes consisted of the relation the semitones had to the tones. Euclides, therefore, calls first, the mode of the diatessaron system which has the semitone first of all the tones of the system, in descent, like ga bou pa ne. He calls second, the mode the semitone of which lies second among the tones, in descent, like di ga bou pa. Third, he calls the mode the semitone of which lies third among the tones, in descent, like ke di ga bou, or else said, first in ascent, like bou ga di ke. The modes of the diatessaron system are the same in the two other genera as well. In the pentachord there were four modes.

48 In order to examine the modes of the diapente system in the chromatic and enharmonic genera, we have to consider the trisemitone or the ditone as one tone. In this system, therefore, first mode was the one that had the tone first in ascent, $\text{P } \text{G } \text{di ke zo}$. Second was the one that had the tone second in ascent, $\text{pa } \text{P } \text{G } \text{di ke}$. Third was the one that had the tone third in ascent, $\text{ne pa } \text{P } \text{G } \text{di}$. Fourth was the one that had the tone fourth in ascent, $\text{zo ne pa } \text{P } \text{G}$.

49 Euclides, claiming that the modes were seven, produces them as shown. Others, however, have augmented their number and enumerate up to fifteen. He lists those fifteen modes in order, showing as well the signs of each. They are according to him: Lydian, Hypolydian, Hyperlydian, Aeolian, Hypoaeolian, Hyperaeolian, Phrygian, Hypophrygian, Hyperphrygian, Ionic, Hypoionic, Hyperionic, Dorian, Hypodorian, Hyperdorian.

Each of them has the proslambanomenos that befalls it in the diapason. This is affixed to them in all three genera.

CHAPTER II

On the Eight Echoi After Manuel Bryennios

§.285

THE EIGHT ECHOI OF MELODY, are not placed at random on the instrument, but each has a determined place on it, which characterises the varied species of melody. Because, the echoi differ each other in no other way but in their position in the high or low range of the voice and the instrument.

§.286. First and highest species of melody is this which coincides with the hypermixolydian tonos. This is called First echos by the melopœoi.

Ke di ga bou pa ne zo ke.

§.287. Second species of melody is this which coincides with the Mixolydian tonos. This is called Second echos by the melopœoi.

Di ga bou pa ne zo ke di.

§.288. Third species of melody is the one that coincides with the Lydian tonos. It is called Third echos by the melopœoi.

Ga bou pa ne zo ke di ga

§.289. Fourth species of melody is the one that coincides with the Frygian tonos. It is called Fourth echos by the melopœoi.

bou pa ne zo ke di ga Bou

§.290. Fifth species of melody is the one that coincides with the Dorian tonos. It is called First plagal echos by the melopœoi.

pa bou ga di ke zo ne Pa

§.291. Sixth species of melody is the one that coincides with the Hypolydian tonos. It is called Second plagal echos by the melopœoi.

ne pa bou ga di ke zo Ne

§.292. Seventh species of melody is the one that coincides with the Hypophrygian tonos. It is called Barys echos by the melopœoi.

zo ne pa bou ga di ke Zo

§.293. Eighth species of melody is the one that coincides with the Hypodorian tonos. It is called Fourth plagal echos by the melopœoi.

§.294. The reason why one echos was called First, the other Second, is according to this writer two fold. The melopœoi when they judge from high and low melos, they call one echos First, the other Second up to the eighth, proceeding on the series of numbers. When they judge what species of melody is higher and what is lower, observing the notes of the tetrachord systems, they name the echoi not according to the order of higher or lower melos, but according to the order of the notes within the tetrachord systems; because in every tetrachord system the highest note is called First and the lowest, Fourth.

{ ke di ga bou }
 { ٩ ٠ ١ ٢ ٣ }

§.295. Every echos contains seven intervals and eight notes. The first and highest is called nete; the fourth lowest, mese; the seventh lowest, hypate; and the eighth, proslambanomenos.

§.296. Every echos starting from its mese, if proceeding upwards, by necessity must stop when reaching its nete, and if it proceeds downwards, it must stop on its proslambanomenos; because no echos can ascend above its nete or descend below its proslambanomenos. If it does, it either spoils its character, or it modulates to another echos, higher or lower.

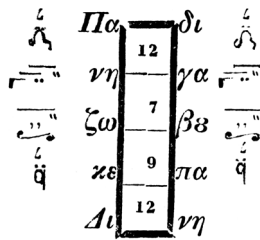
§.297. From what this writer states, it is deduced that the eight echoi were defined on the diatonic genus of melody, and that modulating from one genus to another does not alter an echos. Therefore, every melody of the chromatic genus belongs to one of the eight echoi mentioned; the same applies to melodies of the enharmonic genus, of any mixed genus and the rest.

CHAPTER III

On the Eight Echoi After the Psalmodists

§.298

CHURCH MUSICIANS CONSTRUCTED THE FOUR ECHOI ON A PENTACHORD'S FOUR TONES, THE FIRST OF WHICH WAS MAJOR, the second minor, the third minimum, and the fourth major again, as demonstrated.



So, when they wished to find the First echos, they intoned an ascending note, consisting of a major tone, which was annanes. When they wished to find the second, they intoned an ascending note, consisting of a major and a minor tone, which was neanes.¹ With the third, they intoned an ascending note, consisting of a major, a minor and a minimum tone, which was nana. With the fourth, they intoned an ascending note consisting of a major tone, a minor, a minimum, and a major tone again, which was the agia. This becomes evident also from the martyriai, as $\overset{\text{♩}}{\text{ε}}$ shows two tones, $\overset{\text{♩}}{\text{α}}$ three tones, $\overset{\text{♩}}{\text{δ}}$ four tones, due to the superscripted hypsele. Therefore, Manuel Chrysaphes says: "If you go one note beyond the First echos, you always find the second echos; if you go beyond it two notes, the third; if three notes, the fourth."

§.299. The four authentic echoi were constructed on the said tetra-chord, considering its notes in ascending order. Considering its notes in descending order they produced four more echoi, that they named

¹ This neanes differs to the chromatic neanes in the quality of melody because of the intervals. Since the chromatic demands the ascending intervals minimum and major tone, though the diatonic, major and minor.

plagal. The high tetrachord therefore of the scale $\overline{\omega} \overline{\sigma} \overline{\eta} \overline{\lambda}$, $\overline{\rho} \overline{\sigma} \overline{\eta} \overline{\lambda}$, which consists of two similar tetrachords, contains the authentic echoi, and the low tetrachord, the plagal echoi. They also constructed the trochos as an octopus in order to contain as many notes as there were echoi. Every plagal echos therefore, stands four tones below its authentic echos. And if one wishes to find the plagal of an authentic echos naturally, he descends four tones chanting five notes; and the fifth note represents the plagal echos sought.



§.300. The plagal echos was thus called, says Byrennios, because its mese stands by the hypate of the authentic, as becomes evident in the above diagram. Still better, it was called plagal because on this mese, the melody starts to bend and proceeds on the low range of the voice. Therefore, property of the authentic echoi is belonging to the high range of the voice; while of the plagal echoi, in its low range.²

2. Equivalent to our plagal was for the ancient Greeks the hypo. In relation to this, Athenaeos says that the musicians, having seen the amount and simulation of beauty and virtue in harmony's ethe, called it hypodoric as they call hypoleukon what resembles the white and hypoglyky what is not sweet but nearly so. Therefore, they called hypodorian what is not completely dorian.

CHAPTER IV

On the Constituents of the Echoi

§.301.

THE CONSTITUENTS OF THE ECHOI ARE FOUR: the apechema, the scale, the dominant notes and the cadences. Points of recognition are two: the apechema and the cadences, because an echos is recognized right away from the apechema or the cadence of some verse chanted before.

§.302. Among the cadences, some are final, some perfect and some imperfect. Final cadences are those that carry the melody which belongs to the end of the troparion or any other melos. Perfect cadences are the ones that carry a melody that belongs to the end of periods in the middle of a troparion or any other melos. They occur, in other words, there where the meaning is completed and a full stop is written by the grammarians, although there follow still more words for the conclusion of the entire troparion or melos. Imperfect cadences are the ones that carry a melody belonging to the ends of clauses or their fractions in the middle of a troparion, where there is no conclusion of the meaning and the grammarians write semi-colon or comma. These cadences, occurring on notes other than the ison of the echos, are called imperfect, because the ison is considered the starting point of every melody and it seems that the ear desires to sense that the melody returns back to it. Because, once the sense of hearing is predisposed in favor of some starting point, a cadence occurring elsewhere, leaves it in suspense. It is for this reason that when many cadences in various points or in many troparia are imperfect, it becomes necessary that the last point or the last troparion gets an imperfect or a perfect cadence.

§.303. Ison of the echos is called the basis on which each echos starts. If it is assumed that the first echos has as ison the note ke, the first plagal will have as ison the note pa. Next, if we assume that the second echos has as ison the note zo, its plagal will have as ison the note bou. In like manner, if it is assumed that the third echos has as ison the note ga, echos barys will have as ison the zo below it. Finally,

CHAPTER V

On Apechemata [intonation formulae]

§.307.

APECHEMA IS THE PREPARATION OF THE PSALMODY TO BE CHANTED AND IS REALISED WITH ONE OF THE POLYSYLLABLE NOTES (§.66). It is also called enechema.²

That is, before we start chanting whatever melody, we chant one among the polysyllable notes, in order that we touch on the melody when the echos is already known. If there should be a verse precluding the troparion, it performs the role of the apechema and should cadence like it.

§.308. When before a melody the martyria only of the echos is written, the apechema cadences on the ison of the echos (§.303). However, in the case that the beginning of the melody is written two tones higher, like $\overset{\lambda}{\pi} \overset{\lambda}{\eta} \text{ — } \overset{\lambda}{\theta}$, three tones, like $\overset{\lambda}{\pi} \overset{\lambda}{\epsilon} \text{ — } \overset{\lambda}{\rho}$, or four, like $\overset{\lambda}{\pi} \overset{\lambda}{\eta} \text{ — } \overset{\lambda}{\theta}$ etc. (having next to the martyria the neumes that indicate them), the apechema should cadence upon the note a second, a third or fourth higher, whatever is notated. Therefore, the plagal of the first echos has the apechema aneanes, when it ends on pa and its martyria is $\overset{\lambda}{\pi} \overset{\lambda}{\eta}$. When the martyria however is $\overset{\lambda}{\pi} \overset{\lambda}{\eta} \text{ — } \overset{\lambda}{\theta}$, the apechema will be the annanes or the precluding verse ending on ke, because the melody is prescribed quatro-phone, that is quatro-tone.

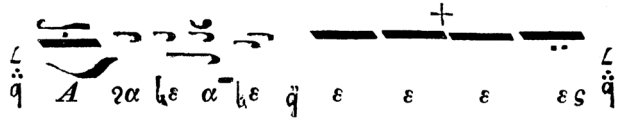
The plagal of the second echos has the apechema necheanes, when it ends on pa and has the martyria $\overset{\lambda}{\pi} \overset{\lambda}{\epsilon}$. When the martyria, though, is $\overset{\lambda}{\pi} \overset{\lambda}{\epsilon} \text{ — } \overset{\lambda}{\rho}$, the apechema will be nenanō or the precludig verse ending on di.

In like manner, the fourth echos has the apechema agia when it ends on di and has the martyria $\overset{\lambda}{\pi} \overset{\lambda}{\theta}$. However, when the martyria is

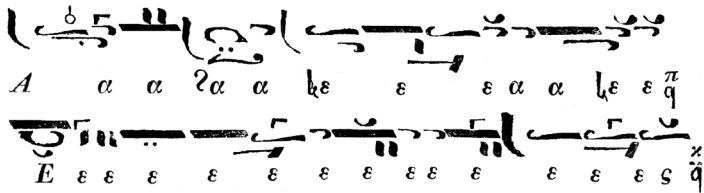
² Enechema is the imposition of the echos. It may also be done with monosyllables, but with the polysyllables, a beginner receives elementary knowledge on the quality.

that of the legetos, L , its apechema becomes the necheanes or the precluding verse ending on bou.

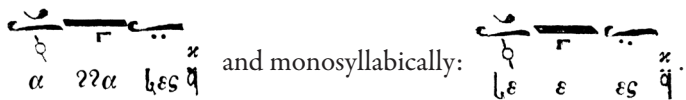
§.309. The apechema of the first echos was written by ancient psalmodists:



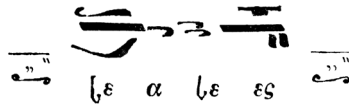
As preserved through tradition, the melody of this is written in our system thus:



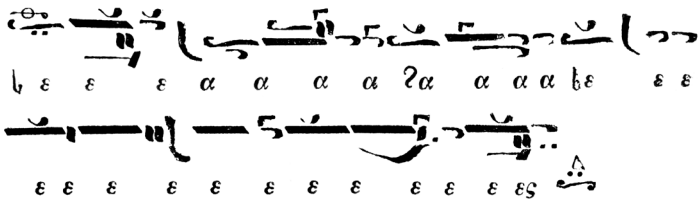
According to recent psalmodists it is



§.310. The apechema of the second echos was written by ancient psalmodists:



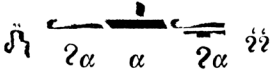
Its melody was preserved through tradition such as is written here in our system:



Recent psalmodists use this apechema for the second echos:



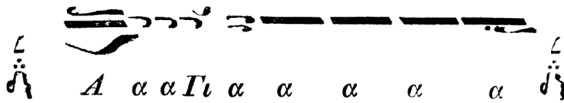
§.311. The apechema of the third echos was for ancient psalmodists:



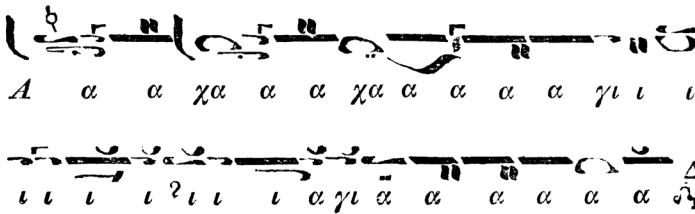
We explain its melody thus:



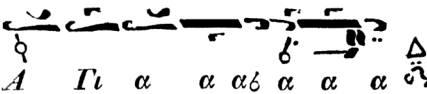
§.312. The apechema of the fourth echos was for ancient psalmodists:



Its melody explained through tradition is expressed by the neumes of our method:



In the explanation of Petros the Peloponnesian the apechema of the fourth echos has this melody:



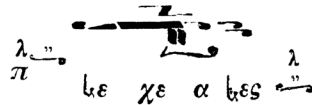
§.313. The apechema of the first plagal echos is written and chanted by us with this melody:



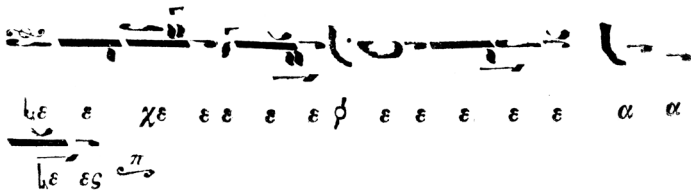
Ancient psalmodists wrote it in the same way, but its melody was such as is represented below with the neumes of our method:



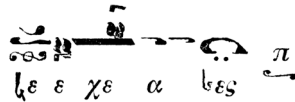
§.314. The apechema of the plagal of the second echos was written by ancient psalmodists:



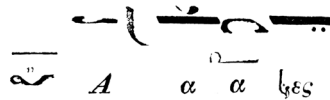
According to tradition, the melody deduced of this thesis is the one we write below:



By us, it is written and chanted in the following way:



§.315. The apechema of the echos barys was written by ancient psalmodists:



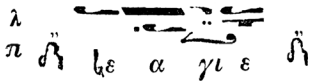
Its melody according to the tradition of notation turns out to be the one hereby exposed:



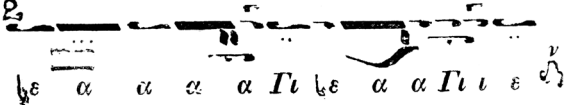
It is written and sung by us in the two following ways. The cases in which one way is preferred over the other will become obvious in §.358.



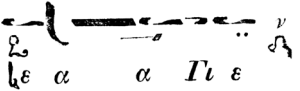
§.316. The apechema of the fourth's plagal was written by ancient psalmodists:



When what is thus written is explained, it has the melody hereby written:



The apechema of this echos by us is sung and written, polysyllabically thus:



and monosyllabically, thus:

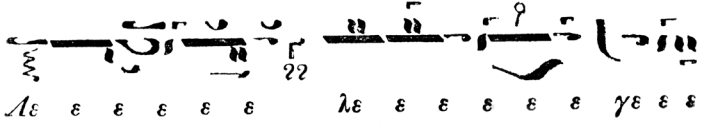


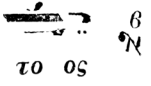
Both however serve the same purpose.

§.317. The echoi of psalmody are eight. The apechemata preserved though are ten, because the fourth echos and the plagal of the second have two apechemata each. The second apechema of the fourth echos was written by ancient psalmodists:



Explained in our notation, it carries the melody written below:

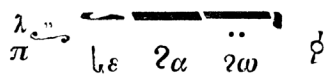




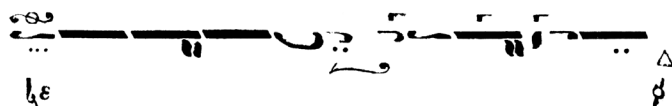
According to Jacob it is sung and intoned monosyllabically thus:



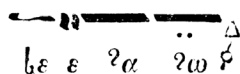
The second apechemata of the plagal of the second echos was written by ancient psalmidists:



This carries the following melody when explained into our method:



A more brief way to write the nenanō, which is also more handy, is:



You should know, however, that the melody of the apechemata might be differently expressed too and that there exist apechemata done in other ways too. All, however, prepare the echos.

CHAPTER VI
On the First Echos

§.318.

THE ECCLESIASTICAL MUSICIANS CALLED FIRST, the echos the apechema of which is done with the annanes. If this word is not said entire, the intoned nes indicates ascent of one major tone and the quality of the annanes. Its ison is the note ke in the sticherarion and pa in the papadike.

§.319. It was called first echos because its apechema consisted of one major tone, which was the first to be found. Because if we look at the diatonic notes of the diapason system for the harmonic relation 6, 8, 9, 12, and if 6 is put on di, then 8 will be on ne, 9 on pa and 12 on Di, like:

6	8, 9	12
di	ke zo ne pa	bou ga Di

Therefore, it was not the minor or the minimum tones that were first known to the harmonists, but the major, the tone that has the ratio 1/8. So, the Pythagoreans, believing that note pa is the first to be pronounced, called it trophos.³

§.320. The first echos makes use of a diatonic scale, in most cases on the Trochos, which is as follows:

ne, pa bou ga di, ke zo ne Pa.

That is, it calls for the two tetrachords to be similar; the interval pa-bou to be equal to the ke-zo, the bou-ga equal to the zo-ne and the ga-di equal to the ne-Pa. The note ne stands as proslambanomenos in the scale and contributes to the completion of the pentachord ne pa bou

³ “Among the numbers 5, 13, 35, the Pythagoreans called 5 a trophos note, believing that among the intervals of a tone it was the first to be pronounced. They called 13, leimma, giving up the division of the tone into equal parts. They called 35 harmonia because it is obtained by two cubes a, of one even and one odd number, containing the arithmetic and the harmonic analogy of four numbers, that is 6 and 8 and 9 and 12.” Plutarch.

ga di and to the formation of the tonal interval ne pa, which is equal to di ke, as note di is considered to be the proslambanomenos of the pentachord di ke zo ne Pa. If further ascent is required, we form another similar higher tetrachord, considering pa as proslambanomenos. The analogous is done when further descent is required.

§.321. Dominant notes in the first echos, when the melos is argosyntheton, are pa and ga or ke and ne. Transgressive notes are all the rest. When the melos is gorgosyntheton, dominant notes are pa and di and transgressive, all the rest. Sign for the phthora of the first echos is the \acute{o} which is put on ke. When, however, it is transposed on another note also, this note should abandon its own sound and, instead, pronounce the ke and give the quality of the annanes, so that the parallage of the remaining melos will be done as if starting on ke.

§.322. The imperfect cadences in the first echos are done on the notes pa and di, the perfect, on pa and ke, and the final on pa. On every cadence a martyria is put. On note ke is put the martyria $\overset{\text{z}}{\underset{\text{z}}{\text{q}}}$; on di, the $\overset{\Delta}{\underset{\text{z}}{\text{h}}}$; on ga, the $\overset{\text{r}}{\underset{\text{z}}{\text{z}}}$; on bou, the $\overset{\text{b}}{\underset{\text{z}}{\text{h}}}$; on pa the $\overset{\text{z}}{\underset{\text{z}}{\text{q}}}$; on ne, the $\overset{\text{r}}{\underset{\text{z}}{\text{h}}}$; on the zo of the trochos system, the $\overset{\text{z}}{\underset{\text{z}}{\text{z}}}$, but on that of the diapason, the $\overset{\text{z}}{\underset{\text{z}}{\text{z}}}$; on the ke of the trochos, the $\overset{\text{z}}{\underset{\text{z}}{\text{h}}}$, but of the diapason, the $\overset{\text{q}}{\underset{\text{z}}{\text{h}}}$; and on the di of the trochos, the $\overset{\text{q}}{\underset{\Delta}{\text{h}}}$, though on that of the diapason, the $\overset{\text{q}}{\underset{\Delta}{\text{h}}}$. In the same way are constructed the remaining martyriæ, as they appear in the following diagram.

§.323. The first echos starts a major tone higher from the buzz (every note might be considered the buzz), four tones higher from its plagal and the plagal of the second echos or its ison. It starts two tones higher from the third echos and the echos barys, three tones higher, or one minor tone lower, from the fourth ending on bou, one major tone, or – depending on our needs – five tones higher from the fourth plagal. In certain circumstances, though, some of these are violated.

§.324. The ethos of the first echos preserves a character which is either modest and dignified or grandiose and majestic. If it is identical with the ancient Dorian, Plato considered that its modesty is suitable for the amelioration of the ethos. Disregarding the remaining dialects of the echoi, he judged the Dorian fit to men who are good warriors and moderate persons, because this dialect appeared to him capable to strengthen the soul of the wise, and moderate the soul of the foolish.⁴

In the Octoechos, the following verses are found:

Wondering at your sounds
The art of musical composition
Places you, oh value, first in order.
Being called the first echos
Of musical art,
We use first the First
To bless the holy texts!
You are assigned to bring us
The first and the best.
The first prizes of all victories
Are yours everywhere.

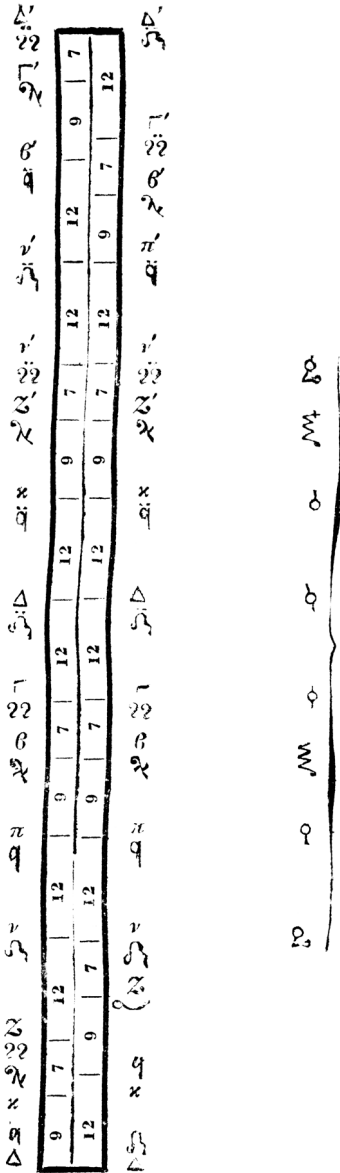
4 “The Dorian harmony shows masculinity and grandeur; not relaxation and gaiety, but sadness and strength; nor is it embellished or variegated.” Athen. Deipnos.

Concerning the Dorian mode, see §.284. In manuscripts concerning music preserved, it is said that the first echos was called Dorian by the Ancient Greeks. It got its name from the Doric people, because they are the first known to have applied it. It was invented, it is said, by Thamyris from Thrace and was used in all three genera. However, we use it in the diatonic genus only, because the tones of our diatonic genus are fixed.

Aristophanes wants the Dorian only harmony tuned on the lyre, most often; he does not want to consider any other. Plutarch says the Dorian dialect expresses the grandiose and the dignified, and the Lydian, the pathetic. Galenus reports the following about the Dorian: “The musician Damon, happening to be by some aulos players, where some youngsters were playing in the Phrygian mode and were acting as if they were close to madness, ordered them to play on the Dorian and they immediately stopped the frenzied behaviour.” On the doctrines of Hippoc. and Plat.

Basil the Great also, in his advice to the young relates the following concerning the Dorian mode: “It is said that Pythagoras, coming across a merry group of drunkards, ordered the aulos-player, the leader of the group, to alter the harmony and play on the Dorian mode for them. They came so successfully back to their senses, that they threw the crowns of leaves off their heads and disappeared in shame.”

§.325. The martyriai of the diatonic genus in the trochos



The martyriai of the diatonic genus in the Diapason / The phthorai of the diatonic genus.

CHAPTER VII

On the Second Echos

§.326.

THE ECCLESIASTICAL MUSICIANS CALLED SECOND THE ECHOS THE APECHEMA OF WHICH IS DONE WITH THE NEANES, which indicates an ascending minimum tone and a major tone. If this word is not pronounced entire, then the intoned nes indicates the quality of the neanes. Its ison is the note bou. Because of the similarity of the ditone, it might also have as ison di and ne.

§.327. It was called second echos, because we find its ison if we ascend two tones, one major and one minor, from the buzz from which we find the ison of the first echos when we ascend one major tone. Consequently, the ison of the second echos is a minor tone higher than the ison of the first echos. This is so when the first echos has as ison the pa. If it has ke as ison, the second will have di as ison, which is a more natural ison, since the diatonic scale gives its apechema with the intervals bou-ga and ga-di.

§.328. The second echos applies a chromatic scale which proceeds by a similar ditone, as follows: Starting on note di, we find the interval di-ga to be a major tone and the ga-bou, a minimum tone etc., as said in §.244, so that this scale is constructed:

ne ϑ bou ga, di ϑ zo Ne.

Quite often though it applies this scale (§.245):

pa ϑ ϑ di, ke ϑ ϑ Pa.

§.329. Dominant notes, in the first scale of the second echos are bou and di. The signs of the phthoræ of the second echos are two, the ϑ and the ϑ̄. The ϑ̄ is put on the notes di, bou, ne and the remaining ditones. The ϑ is put on the notes ke, ga and the remaining ditones. When transposed on some other tone, this should abandon its own note, and sound the one indicated by the phthora, taking its quality, while the parallage of the remaining melos should be done according to its image. The dominant notes of the other scale are discussed in the chapter On the Plagal of the Second Echos.

§.330. The imperfect cadences of the second echos are done on bou, the perfect, on di, and the final, on di and, rarely, on bou. The signs of the martyriæ of this echos are $\overset{\nu}{\underset{\cdot}{\text{v}}}$ for the note Ne, $\overset{\pi}{\underset{\cdot}{\text{p}}}$ for pa, $\overset{\beta}{\underset{\cdot}{\text{b}}}$ for bou, $\overset{\Gamma}{\underset{\cdot}{\text{g}}}$ for ga, $\overset{\Delta}{\underset{\cdot}{\text{d}}}$ for di, $\overset{\xi}{\underset{\cdot}{\text{k}}}$ for ke, $\overset{\zeta}{\underset{\cdot}{\text{z}}}$ for zo, $\overset{\nu'}{\underset{\cdot}{\text{n}}}$ for ne, and so on.

§.331. The apechema of the second echos starts on bou if it ends on di, but on ne, if it ends on bou. The interval bou-ga is a major tone, and the pa-ne, a minimum tone. This ne, therefore, is little higher than the diatonic ne. The second echos itself starts on bou or on di. When transposed from the first echos, it either starts naturally a minor tone higher, or it modulates on its own ison. In like manner, when transposed from the fourth echos ending on bou, it starts on its own ison. When transposed from the first, second and fourth plagals, it starts four tones higher. When transposed from the third echos and the barys, it starts two tones higher.

§.332. The ethos of this echos, if it corresponds to the one that in ancient times was called Lydian,⁵ has a character that animates and encourages but grieves and instills passion into the souls as well. This echos seems to lean towards delicacy and drive the soul to cowardice. It is said, therefore, that Orpheus was taming the wild beasts with this echos. Plato calls the Lydian mode proper to drinking parties and unrestrained; he disregards it therefore because it makes the soul of the young vain. We find these verses in the Octoechos, expressing its ethos:

Although you were given the second place,
 Your pleasure is first, honey-pouring echos.
 Your honey-flavoured, most sweet chant
 Builds up the bones, gives joy to the hearts.
 The Sirens sung all their chants on the second;
 So mildly does your honey-dropping chant flows.

⁵ Some say that Amphion invented the Lydian mode. Others, say that Olympus was the first to play on the aulos on the Lydian mode a funeral at Pytho. Pindar says in his Pæans that the Lydian mode was first played in public at the marriage of Niobe. Dionysos Iambos tells us that Torebos was the first to use Lydian music. Nicolaos of Damascus says that the son of Zeus and Torrhebia, wandering by some lake – called Torrhebia because of her – heard the singing of the nymphs, whom the Lydians called muses, learned their music and taught their songs to the Lydians.

CHAPTER VIII
On the Third Echos

§.333.

THE ECCLESIASTICAL MUSICIANS CALLED THIRD THE ECHOS WHOSE APECHEMA IS DONE WITH THE NANA, which shows an ascending tritone, that is an interval containing three tones, a major, a minor and a minimum. When this word is not said entire, the intoned ne requires a buzzing and voluminous pronunciation. It has as ison the note ga. But in the Papadike it also has the ne over the tone ga.

§.334. It was called third echos because if we ascend three tones – one major, one minor and one minimum – from the buzz from which when ascending one major tone we find the ison of the first echos, and when ascending two tones – one major and one minimum – we find the ison of the second echos, we find the ison of the third echos. So, the ison of the third echos is a minimum tone higher than the ison of the second and a minor plus a minimum tone higher from the ison of the first echos.

§.335. The third echos makes use of the following enharmonic scale: pa Ǿ ga di ke ϕ ne Pa.

As in this scale there is no minor or minimum tone, but instead, there are five major tones and two quarters of the major tone, it belongs to the diatessaron system, or triphony.

ne pa bou Ǿ ga, ga di ke Zoϕ
 ᾠ ᾗ ᾠ τος ᾗ ᾗ, ᾠ ᾗ ᾠ τος ᾗ ᾗ (§.261 and §.57)

§.336. Dominant notes in the third echos are pa, ga and ke. Sign of the pthora of the third echos is the ϑ. When this is on ga, it requires that this ga is a natural tone, and the remaining ascending and descending intervals of the tones, are as determined in the scale of the echos. When put on the notes zo and bou, it wants them on hypthesis. When put on any other note, it wants this note to abandon its own sound and pronounce the ga, creating the quality of nana, so that the parallage of the remaining chant will be executed on the image that this pthora requires.

§.337. In the third echos, the imperfect cadences are done on ke, the perfect on pa and the final on ga, since after the third echos starts pointing bou diesis, it turns towards ke, where it does an imperfect cadence; then, turning downwards, it points on bou natural and does a perfect cadence on pa; finally, turning upwards, it takes bou diesis and does a final cadence on ga. Rarely, it does an imperfect cadence on ne as well. The signs of the martyriæ in the third echos are the ones assigned to the first echos also, except for the martyria of Zo, which is written $\overset{\curvearrowright}{\underset{\curvearrowleft}{\text{z}}}$, and of bou, three tones above it, which is on hyphesis and its martyria is written $\overset{\curvearrowright}{\underset{\curvearrowleft}{\text{b}}}$. The note seven degrees below is on diesis in the third echos, and its martyria is seldom written, because no cadence occurs on it.

§.338. The apechema of the third echos starts on ne and ends on ga. The verse precluding this echos starts on ke and ends on ga, when the martyria of the troparion is simply $\overset{\curvearrowright}{\underset{\curvearrowleft}{\text{z}}}$ or $\overset{\curvearrowright}{\underset{\curvearrowleft}{\text{g}}}$. When an elaphron stand by it, like $\overset{\curvearrowright}{\underset{\curvearrowleft}{\text{r}}}$ or $\overset{\curvearrowright}{\underset{\curvearrowleft}{\text{πα}}}$, then the verse ends on pa. The third echos itself starts on ga. When transposed from the first echos, it starts two tones higher or lower. When transposed from the plagals of the first and of the second, it starts two tones higher. When transposed from the second, it starts one tone higher. The same happens when transposed from the fourth echos ending on bou. When transposed from the plagal of the fourth, it starts three tones higher and when from the barys, it starts with its ison.

§.339. The ethos of the third echos, assuming that its the one that the ancient Greeks called Phrygian, preserves a rough, warm, arrogant, impetuous and horrifying character. For this reason Athenaeos says that trumpets and war-instruments sounded the Phrygian mode. As the verses in the Octoechos illustrate, it also preserves masculine, inellegant and simple character.

Though third, you resemble
the chief of manly toil, oh Third.
Inellegant, simple, completely masculine indeed
Your song, oh Third, and we honour you.
Equal to your number you rank as a leader,
You befit to the masses, Third, being skilfully constructed.

CHAPTER IX

On the Fourth Echos

§.340.

THE ECCLESIASTICAL MUSICIANS CALLED FOURTH THE ECHOS WHOSE APECHEMA IS DONE WITH THE AGIA, which is often met in mele written with musical neumes. In order to create the quality of the agia, it should be chanted with rough and masculine pronunciation. The fourth echos has as ison the notes di, pa and bou.

§.341. It was called fourth because if we ascend four tones from the buzz from which by ascending one major tone we find the ison of the first echos, two tones – one major and one minor – we find the ison of the second echos, three tones – one major, one minor and one minimum – the ison of the third echos, we find the ison of the fourth echos. When, therefore, buzz is the ne, the ison of the first echos will be pa, of the second, bou, of the third, ga and of the fourth, di. When the buzz is di, ison of the first echos will be ke, of the second, Zo, of the third, Ne and of the fourth, pa. When the ison of the first echos is ke, of the second, di and of the third, ga, then the ison of the fourth is found to be bou.

§.342. The fourth echos makes use of a diatonic scale on the diapa-son system. For this reason, when the agia, which receives two isa – pa and di– has pa as its ison, it descends four tones which have similar intervals with the four notes descending from di. Although there is found no difference between the two isa of the agia in descent, in ascent the difference is great because of the dissimilarity of the intervals, since, indeed, the interval di-ke differs from pa-bou, ke-zo differs from bou-ga etc. When the fourth echos has as its basis, that is, as its ison, the note bou, then its apechema is the legetos. Manuel Bryennios calls the echos with this ison, fourth, but the psalmodists after him call it mid-echos of the fourth, because it is in the midway between di and ne. They call it legetos, wherefrom derives our martyria β .

§.343. Dominant notes in the fourth echos are di and bou, when the ison is bou, in which case it is required that the hypthesis of ke is

sometimes heard. When the ison is pa or di, the dominant notes are pa, di and zo. Sings of this echos' phthoræ are the ξ for note bou, the ζ for di and every other sign defined in the diatonic scale of the diapason (§.325). It should be known that when two tones higher the melos of the neanes is heard, there is no need to indicate this, because the basis of agia is di. When, though, two tones higher is the nana, then the basis of the agia is pa, and in order to indicate this, the ξ should be put on the first ascending tone, or the ϕ on the second, etc.

§.344. When the fourth echos has bou as its ison, the imperfect and perfect cadences are done on di and bou, and the perfect and final on bou. When its ison is di, the imperfect cadences are done on pa and zo, and the perfect and final on di. When its ison is pa, the imperfect cadences occur on di and bou, and the perfect and final on pa. According to recent composers, the final cadences are on bou. The signs of the martyriæ in this echos are the ones determined for the first echos on the diapason system (§.325).

§.345. The fourth echos having the ison on pa, starts with note pa, on which ends the precluding verse. When its ison is bou, the precluding verse ends also on bou. When transposed from other echoi, the quantity of ascent or descent it receives, depends on the isa of those echoi.

§.346. According to the Anastasimatarion by Petros, the fourth echos differs from the first in that it points to the neagie on the fourth ascending tone, which means that it proceeds on the diapason, whereas the first, which proceeds on the trochos, points to the aneanes at the fourth descending tone. They differ further, as to the dominant notes, because the first has as dominants pa and ga, though the fourth has bou and di. Also, they differ in the cadences, as the first has imperfect cadences on ga and perfect or final on pa, though the fourth echos has imperfect cadences on di, perfect on pa and final on bou.

§.347. The ethos of the fourth echos preserves festive and dancing character. When its ison is di, its character is dignified and grandiose, when it is bou, it is passionate and sensual, and when it is pa, it is humble inciting the heart to put into motion its spiritual powers. Here is how its ethos is expressed in the Octoechos:⁶

You, the festive, the dancer, oh Fourth,
You, the pride of musical criticism,

You mould the dancers skilfully
And reward the voices and the beating on the cymbals.
The crowds of dancers praise you, oh Fourth,
Because you are fully musical.

6 If the fourth echos is the one that the ancient Greeks called Mixolydian, it was invented by Sappho. Indeed, before her, the musicians knew three only modes, the Dorian, the Lydian and the Phrygian. Receiving this mode, the musicians combined it with the Dorian, elements of which they transmitted to its ethos.

“The Mixolydian is pathetic, fitting to tragedy. Aristoxenos said that it was Sappho who found first the Mixolydian and the tragic poets were taught it by her, combining it thereafter with the Dorian. As the one expresses majesty and dignity and the other, passions, tragedy consists of these mixed elements.” Plutarch.

CHAPTER X

On the Plagal of the First Echos

§.348.

THE PSALMODISTS CALLED PLAGAL OF THE FIRST, the echos whose ison is four tones below the ison of the first echos, which means that if the ison of the first echos is on the note ke, the ison of the first plagal will be the note pa. Its basis or ison should be such that it will permit the echos to ascend freely seven tones and to point at the first echos four tones higher. Such a note is pa, which is the ison of this echos in the papadic and the stichiraric mele. The heirmologic mele require as ison of this echos the note ke, but with the phthora of pa, so that the descent is done as if from pa, because three tones below is the aneanes instead of the necheanes. The apechema of this echos is the aneanes, which indicates ascent and descent of two notes –one minor and the other, minimum – and which does not require a proslambanomenos for the measurement of the interval below pa. Instead, it reveals itself measured with the diatonic intervals above it.

§.349. This echos makes use of the diatonic scale on the diapason system. As it often has zo on hyphesis, and because the interval zo-ke is observed to be a quarter of the major tone, this echos uses a mixed scale composed of the diatonic and the enharmonic genera, such as:

pa bou ga di, ke ϑ ne Pa.

Sign of the phthora of the second plagal, when it makes use of the mixed scale, is the ϑ, which put upon zo, it wants it on hyphesis. When, however, this echos makes use of the diatonic scale, then the ϑ is put on pa or one of the sings indicated for the diatonic phthoræ (§.325) is put on its proper place, and thus this fact becomes known. We use such a phthora when some alteration occurs, because otherwise, it is needless.

§.350. This echos has dominant notes in the sticheraric and the papadic mele, pa, di and ke. It also wants the hyphesis on zo to be heard. Dominant notes in the heirmologic, it has ke and ne. In this case, zo

should not be heard much on hypheſis, but natural. For diſtinction, when zo is on hypheſis, the ſign ϣ is put on it.

§.351. In ſticheraric and papadic mele the imperfect cadences are done on di and ke, the perfect and final, on pa. In the heirmologic, the imperfect cadences are done on ne, the perfect on ke and the final on pa and ke. When the cadence in the heirmologic is on pa, the closing period descends from ke naturally and not as if descending from pa. Signs of the martyriæ of the firſt plagal are the ones determined for the firſt echos on the diapason ſystem. When, however, it makes uſe of the mixed ſcale, then it applies the martyriæ indicated in §.262.

§.352. The apechema of the firſt plagal ſtarts on pa and ends on pa. When tranſpoſed from its authentic, the echos itſelf ſtarts four tones below; when tranſpoſed from the third and the barys, it ſtarts one or three tones below; when tranſpoſed from the ſecond plagal, it ſtarts on its own iſon; when tranſpoſed from the fourth ending on bou, it ſtarts a tone below; and when tranſpoſed from the plagal of the fourth, it ſtarts one tone above.

§.353 The firſt plagal differs from the firſt echos in that the firſt aſcends from its baſis leſs than the firſt plagal and aſcends more. It alſo differs from the firſt as to the dominant notes and the imperfect cadences. It differs from the fourth as to the dominant notes and the fact that the fourth likes the hypheſis of ke, though the plagal of the firſt likes the hypheſis of zo.

§.354. The ethos of the firſt plagal in the ſticheraric and the papadic mele inclines towards compaſſion and lament. In the heirmologic in faſt tempo it inclines towards ſtimulation and dancing. In the heirmologic in ſlow tempo, towards laxneſs and languidneſs.

You are mournful and very compaſſionate,
But often you dance in good rhythm,
Oh you, the muſical mind that art has known.
Which is the deviating inclination of the plagals?
Your are fifth in order, but firſt in your kind,
because you are and, hence, you are called
The firſt of the plagals.⁷

⁷ Its lamenting quality is exemplified in “*Ἡ ζῶη ἐν τάφῳ*” and the “*Ἄξιον ἐſτί μεγαλύνειν σε*”. Compaſſion is exemplified in “*Τῷ Σωτῆρι Θεῷ*” and the “*Χαίρεις ἀσκητικῶν ἀληθῶς*”. Its dancing character is demonstrated in the “*Πάſχα ἱερὸν ἡμῖν σήμερον*” in faſt tempo. The lax character is demonstrated the *Katabasiae* in ſlow tempo.

CHAPTER XI

On the Plagal of the Second Echos

§.355.

THE PSALMODISTS CALLED PLAGAL OF THE SECOND THE ECHOS WHOSE APECHEMA IS THE NECHEANES, which indicates ascent of a semitone, a trisemitone and another semitone, and the same descent. Its basis or ison should be such that it will permit it to ascend freely seven tones and meet the second echos four or, at times, three tones above it. Such a note is pa which is the ison of the second plagal in the papadic and sticheraric mele. The heirmologic have ke or di as ison of this echos. It is recognised by the chromatic intervals pa-bou and bou-ga and does not require a proslambanomenos for the measurement of the interval below pa. It is also recognised, as the psalmodists said, by the lying of its authentic on it.

§.356. Its scale is the following chromatic scale:

pa ϑ ε di, ke ϑ ε Pa

consisting of two similar chromatic tetrachords. Signs of the phthoræ for this scale are two, the ϑ put on pa and ke, which refers to ascent and indicates a semitone, a trisemitone and a semitone, as the numbers in the diagram (§.245) illustrate, and ε, which is put on di and the Pa above it. This refers to descent and indicates a semitone, a trisemitone and a semitone, as illustrated in §.245. It often makes use of the following mixed scale as well:

pa ϑ ε di, ke zo ne Pa,

but then, on the first tone of the diatonic tetrachord we come across, the sign of one of the diatonic phthoræ (§, 325) is put for distinction. In heirmologic mele, however it applies the chromatic scale we talked about in §.328.

§.357. In the sticheraric and the papadic mele this echos has as dominant notes pa, di and ke and demands that ga is heard on diesis in order that di is coloured by it. In the heirmologic, its dominant notes

are di and bou, when its ison is di.

§.358. This echos' imperfect cadences are done on di, its perfect and final, on pa. Sometimes it has also final cadences on di, as its apechema is often done with the nenanō, like in the funeral “Ἄγιος ὁ Θεός”. In the heirmologic, the imperfect and final cadences are done on di and the final on bou.

§.359. The apechema of the second plagal echos starts on pa and ends on pa, when it is necheanes, but it starts and ends on di when it is nenanō. This echos, when transposed from its authentic, starts three or four tones below, as it does when transposed from the first echos which has ke as its ison. When transposed from the first plagal and the fourth, including the one ending on $\overset{\theta}{\bullet} \mathbf{N}$, it starts two tones below; when transposed from the fourth plagal, it starts one tone higher.

§.360. It differs from all other echoi for belonging in the chromatic genus. It differs from the second, because this extends more in the high register and less in the low, though the second extends less in the high register and more in the low. Still, it differs as to the dominant notes and the perfect cadences, since in the stichera, the second does the perfect cadences two tones below the basis, though the second plagal does them on its basis.

§.361. The ethos of this echos preserves a character suitable to funeral songs and to sacred and elevated celebrations. This hold for the sticheraric and the papadic mele. In the heirmologic, however, where the quality of the neanes is pre-eminent while that of the nenanō is not heard, its character is joyful. Its joy is double the second's joy, as it becomes evident in these verses:

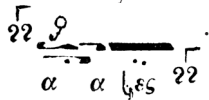
Though you are the sixth chanter,
First of all you advance.
In double composition you bring all the pleasures
And your being second secondary comes.
You, the honey-flavoured, the sweet, the cicada,
Who loves you not, oh second of the plagals?

CHAPTER XII

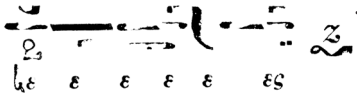
On Echos Barys

§.362.

THE PSALMODISTS NAMED BARYS THE PLAGAL OF THE THIRD FOR REASONS THAT GO BACK TO ANTIQUITY. It is said that Hermes, inventing a seven-stringed lyre, taught that the notes and the echoi are seven. The lowest of the seven notes was zo and, therefore, the echos whose ison was zo was called echos barys. When, later, Pythagoras and his followers augmented the strings and the notes to eight, they did not want to change the name of echos barys and bring into complete oblivion the ancient kind of lyre. The apechema of the barys in the stichera and the heirmologic mele is done this way



In the papadic and in the calophonic heirmoi it is done thus:



The first apechema indicates descent and ascent of a quarter of the major tone. The second, indicates ascent of a major tone and descent of a major and a minimum. The first apechema has ga as basis, while the second starts on ne and ends on zo.

§.363. In the heirmologic and the papadic mele, echos barys has the following enharmonic scale:

pa ς ga di ke ϑ ne Pa,

which, however, is not the one of the third echos, but has the following difference: in the third echos the interval ke-zo is a quarter of a major tone, but in echos barys it is a minimum tone. In the old sticherarion and in the papadike it makes use of the diatonic scale. Nevertheless, in the stichera, it approaches the enharmonic scale around the cadences, and in this case, it is identified with ϑ put on ga, or on the hypthesis of zo or of bou.

§.364. In the stichera and the heirmologic mele, its dominant notes are zo, di and bou, as is evident in the Anastasimatarion by Petros, where this echos is pointing right from the beginning at the diesis of bou or the hypthesis of zo. In the old sticherarion and in the papadike, the dominant notes vary according to various ideas. When echos barys proceeds on the enharmonic scale, sign of its phthora is the ρ, put on ga and on the hypthesis of zo and bou. When it proceeds on a diatonic scale, sign of its phthora is the ξ put on zo; also, any of the eight signs of the phthoræ, put on the proper note, as determined (§.325).

§.365. When echos barys makes use of the enharmonic scale, the imperfect cadences are done on di and on ne and, rarely, on pa; the perfect and final are done on ga. When though it makes use of the diatonic scale, the imperfect cadences are done on di, the perfect on pa and zo and the final on zo. The signs of the martyriæ for this echos are those for the third and the first echoi.

§.366. The apechema of echos barys in the sticherarion and the heirmologion, starts and ends on ga. In the papadike and the calophonic heirmologion, it starts on ne and ends on zo (§.362). When the barys of the stichera is transposed from the first echos with an ison on ke, it starts two tones below; when transposed from the second and the fourth ending on bou, it starts a minimum tone above; when transposed from the first and the second plagal, it starts two tones above; when transposed from the fourth plagal, it starts three tones above; and when from the third, it starts on its own ison.

§.367. Echos barys differs from the other echoi because of its enharmonic scale. It differs from the third, in its dominant notes and its cadences. In the papadic mele, echos barys differs to all other echoi in its ison and the cadences.

§.368. The ethos of the barys inclines to tranquillity. Especially when it makes use of the enharmonic scale, it preserves a serene and peaceful character, able to moderate the impetuousness of the third echos and calm down the spirits. Therefore, it is not favourite among the young people or the gentlefolk, but rather, among old and simple people. Indeed, its ethos is expressed as such in the verses of the Octoechos:

Oh chant familiar to the low-rank soldiers
You bend under your weight,
Simple echos, your surname to the barys,
You love to reflect amidst the cries of hate.
You are the chant of men, oh secondary third,
And your variety by all simple people is loved.

CHAPTER XIII

On the Plagal of the Fourth Echos

§.369.

THE PSALMODISTS CALLED PLAGAL OF THE FOURTH THE ECHOS THE APECHEMA OF WHICH IS DONE WITH THE NEAGIE, which preserves majestic and serious pronunciation and indicates ascent and descent of either a major tone, or of a major and a minor, or of a minor and a minimum, etc. Its basis, or ison is such that it ascends freely seven tones and descends freely three tones; four tones higher it points to the agia, and three tones lower, to the neagie. Such a note is ne. When, however, it has as its ison the note ga, then, in reality its ison is three tones higher, but the melos proceeds from ga as if from ne, which means that two tones higher it indicates the sound of bou instead of ke, as is exemplified in “Ἴδὸν ὁ νυμφίος ἔρχεται” and others (§.308).

§.370. The scale of the fourth plagal is the diatonic of the diapason system, but quite often zo gets a diesis, in which case the \mathcal{S} is put on ne for the sake of lucidity. The sign of the phthora of the fourth plagal is \mathfrak{z} , put on ne. On the higher octave the \mathfrak{z} is put. When, however, this echos has ga as its ison, then the \mathfrak{z} is put on ga and this note abandons the sound of ga and, instead, ne is pronounced. Therefore, as the intervals are altered, the parallage of the remaining melos is realised as if from ne.

§.371. Dominant notes in the stichera and the heirmologic mele are ne, bou and di, because right from its beginning, the echos points to a melody that belongs to bou, while it returns at times to the ison, or, at other times, when directed towards high pitch, it points to di and ascends up to its octave to do the cadence either on di – when it is imperfect – or – when it is perfect – on its ison.

§.372. The imperfect cadences occur on di, bou and ne; the perfect on ne and seldom on di, and the final, on ne. The signs of the martyriæ in the fourth plagal are no others but the ones determined for the first echos on the diapason system.

§.373. The apechema of the fourth plagal starts on ne and ends on

ne. When, though, the melos before it is ditone, the precluding verse ends on bou; when it is tritone, the verse ends on ga, as said (§.308). The fourth plagal itself starts on ne, and the precluding verse, starting on di and descending diatonically, ends on ne. When this echos is transposed from the first and its plagal or from the second plagal, all of which have pa as ison, it starts a tone lower. When transposed from the second and the fourth, that have bou as ison, it starts two tones lower. When transposed from the third and the barys that have ga as ison, it starts three notes lower.

§.374. The difference of the plagal of the fourth to the chromatic and the enharmonic echoi lies on the scale. Its difference on the diatonic echoi lies on the ison, the dominant notes and the cadences.

§.375. The ethos of the fourth plagal preserves a character that leans towards charm and pleasure and is attracting passions. For this reason, the komoi were mostly composed on this echos. It also leans towards modesty, to which contributes mostly the slow tempo and the transposition from ne to ga. (§.363)

The verses in the Octoechos say the following about it:

You, fourth among the plagals and their seal,
You bring within you every beautiful chant
And broaden the sounds of singing.
The crown of the echoi you are,
Being both their commander and end.
Because you are the extreme of the notes
And their end,
I call you twice the end of notes, and the end.

§.376. When it is asked to show the basis or ison of each of the eight echoi mentioned, the order they preserve from high to low pitch, the martyriæ that indicate them and are written before the mele, or the martyriæ of notes within the mele, written somewhere in the middle of the melody, it is possible to express all that, the way they are presented in the plate below. As the notes of the diapason are seven and cannot procure with isa all eight echoi, pa becomes the ison of both the first plagal and the second plagal. It is observed that the plagals do not preserve the order of their authentic echoi, which is due to the fact that

the eight ehoi of psalmody were constructed upon the trochos and not upon the diapason.

ke			first
di			second
ga			third
bou			fourth
pa			pl. first
ne			pl. fourth
zo			barys

Isa of the ehoi

Martyria of the ehoi

Martyria of the notes

Ehoi

CHAPTER XIV

On Transpositions, or Phthoræ

§.377.

THE MUSICIANS REALIZED, after much observation, that when they remain for long on one note or on one echos, the ethos of the echos, becoming very familiar, produces satiety and satiety is followed by annoyance. If before the production of satiety, they found out, they pass over to some other echos, a new ethos enters the minds of the listeners, and it awakens them and makes them attentive. So, they learned to pass from note to note, from genus to genus and from echos to echos methodically, in order to avoid, through variety, the disgust produced by the monomodal ethos of a melody.

“Monody is irksome to everybody and produces satiety, but variety is pleasant.”⁸

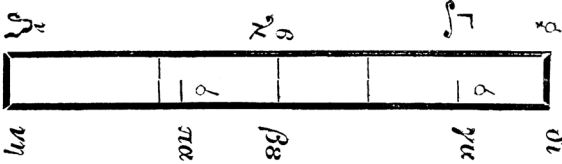
§.378. This “passing over” is called phthora. When done from note to note, as discussed in §.370, it is also called transposition, but when it is done in any other way, it is only called phthora. Transposition is to consider as ison some note other than the natural ison of the echos, obeying the proportions of the intervals of this note’s scale instead of the natural note’s scale. For example, the natural ison of the second echos is, as said, di. When instead of di, I take ke and keep the proportions of the scale, starting from ke as if from di, then I chant the second echos in transposition, considering ke as di, di as ga, ga as bou etc. The same occurs also in §.370.

§.379. Phthora is alteration occurring in melody by transposition from genus to genus, from echos to echos, or from a scale to another scale. We use sixteen phthoræ the signs of which are hereby exposed. Eight of them are diatonic, the ρ, ϑ, ζ, φ, δ, ζ, ρ. Five are chromatic ρ, ϑ, φ, ϑ, ϑ and three are enharmonic, the ρ, ϑ, ϑ.

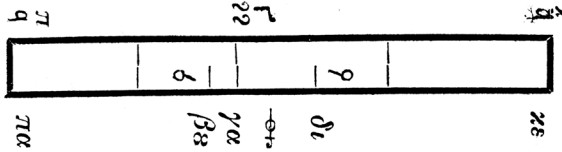
§.380. We have already talked about thirteen of them in *passim*, at the place that each has in the eight echoi. Here we speak

⁸ Plutarch in his speech on the education of children.

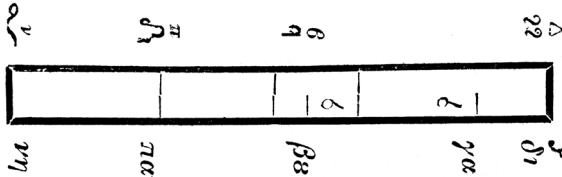
about the remaining three. We start with ϑ. This is put on note di and asks for ga and pa to become dieses, like di ϑ bou ϑ ne. Put anywhere else, it requires the same ascending intervals. Here is its scale.



§.381. Wherever the sign of this phthora ϑ is put, the note acquires the melody and the quality of the neanes and asks for a diesis above it and an hypthesis below it, so that the first descending interval will become a quarter of the major tone.



§.382. This phthora ϑ is put on di and the melos proceeding to low pitch, wants the first note to be a quarter of a major tone lower and the second, to be a major tone lower. From there on it progresses towards high pitch and preserves the same intervals.



§.383. In brief, it should be known that every phthora has a tying and a resolution. At the tying the sign of the phthora is put there where the alteration of the echos or anything else starts. The alteration does not occur before the sign, but after it. At the resolution the sign of the former echos is put and the alteration here too occurs after the sign. For example, if one chants a melos of the first echos and wants to do a phthora to the second echos, the sign ϑ is put on ke, indicating thus that all the components of the first echos come into existence. It is then assumed that ke is as di, di as ga, ga as bou and so on. When, later,

it is required to do the resolution, the δ is put on the affected by the phthora di that is on note ke and it is thus indicated that the echos of the melos returns back to where it came from. The resolution might be done with any other sign of the diatonic phthoræ, required by the first note we come across to.

§.384. At times, a musician might tie after one phthora some other, and then bring the resolution. For example, if one chants in the fourth echos and comes across the \ominus on di, he knows that he should proceed on the scale of the second echos until he sees the resolution. If he then comes across the δ on the same di, he does not do the resolution, but instead, he has to proceed on the scale of the second plagal until he sees the resolution. The resolution of each phthora is done either with the δ put on di or with any other of the diatonic phthoræ.

§.385. Sometimes, a third phthora might occur and then, one, two or more resolutions follow. All this is praiseworthy. What does not deserve praise, however, is when one ties a phthora in a melos and does not bring in the resolution. The following is always obeyed, regardless of how or when a phthora is done:

I. Instead of the note indicated by the phthora, the note on which the sign of the phthora is put is the one considered. The analogies of the tonal intervals are based on this note and the notes by which the parallage of the chant is done are said on this basis.

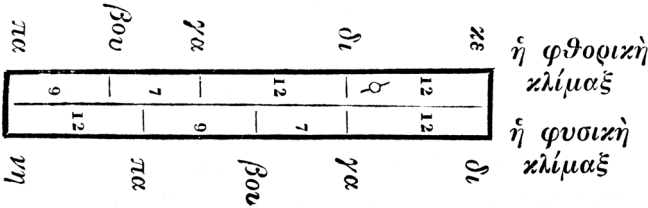
II. Every phthora ought to be agreeable. It is good, therefore, to do some kind of preparation and thus give the impression that the phthora is put where it belongs.

III. A melos affected by a phthora may have imperfect and perfect cadences on the image of this phthora. Consequently, it receives the martyriæ which are peculiar to this phthora.

IV. After the part affected by the phthora, there ought to be a resolution prepared in such a way, that it will be agreeably heard.

§.386. One diesis or one hyphesis in a tetrachord does not constitute any system of phthora, and consequently, no resolution is required. When the diesis or the hyphesis last from beginning to end of a melos, while they are not included in the scale of the echos, then, next to the martyria of the echos is written the note with the diesis or the hyphesis, like echos $\overline{\omega}$, $\kappa\epsilon\delta$; echos $\overset{\zeta}{\delta}$, $\nu\eta\delta$.

§.387. Because of the pthoræ, it so happens that the voice deviates towards low or high pitch. The reason is that when the resolution of the pthora occurs on a note which is below the natural, the voice goes towards low pitch and vice versa. For example, if I alter ga into di with a pthora, and then I do the resolution on the ga introduced by the pthora, the voice deviates a semitone. If I do the resolution on pa or di, the voice will not deviate because of the equality of tones.



This effect was observed by ancient musicians also, who when there was a fall of the voice one tone lower, they added one tone which they called Dynamis. See in the Doxastikarion of Jacob, the third of the questions, in “αὐτὸν ἰκέτευσέ”.

§.388. In every alteration it is necessary that there is a common note, interval or scale. The commonality is based on the similarity of the intervals. When in an alteration the two echoi have similar notes in common, the alteration is melodious, but when they have dissimilar notes, the alteration is not melodious. Melodious for example, will be the alteration of the fourth echos into the second, because the intervals di ga bou are similar in common to both echoi.

The alteration of the first plagal to the second plagal will also be melodious because the notes ne pa and di ke are similar in both echoi, etc.



FIFTH BOOK

CHAPTER I

On Melopœia

§.389.

MELOPŒIA IS THE POWER TO CREATE MELOS. We create melos not just by chanting different long known psalmodies, but also by inventing and writing our own new mele pleasing to the listeners (§.12.). Melopœia, therefore, differs from melos-singing because the latter is the recitation of melos, while melopœia is a poetic state. Melopœia distinguishes three loci of sound, the mesoeides, the netoeides and the hypatoeides. The mesoeides proceeds from ζ to ζ' higher, the netoeides ascends from ζ'_N to ζ''_N , and the hypatoeides descends from ζ to ζ (§.111).

§.390. In old times they had three parts of melopœia: Lepsis, Mixis, and Chresis. By lepsis the melopœos found out on what locus to create the melody, i.e., whether to create it in the mesoeides, the netoeides or the hypatoeides. By mixis he was adapting to each other notes, registers, genera and echoi. Chresis was the varied working-out of melos.

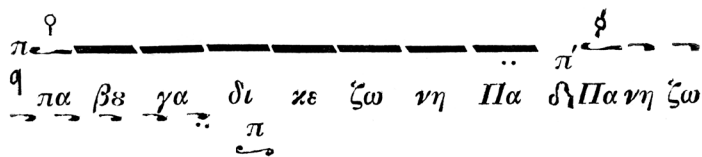
§.391. Chresis had four kinds: Agoge, Ploke, Petteia and Toné. And Agoge [direction] had three kinds also: straight, declining and peripheral. Straight is the direction which ascends in succeeding notes, as

π
η $\pi\alpha\ \beta\omicron\upsilon\ \gamma\alpha\ \delta\iota\ \kappa\epsilon\ \zeta\omega.$

Declining is the direction that descends in succeeding notes, like

ζ'
 $\chi\ \zeta\omega\ \kappa\epsilon\ \delta\iota\ \gamma\alpha\ \beta\omicron\varsigma\ \Pi\alpha.$

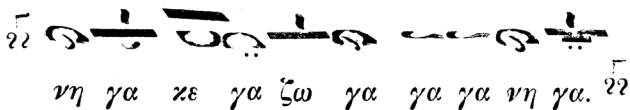
Peripheral is the direction that ascends diatonically and descends chromatically, like



or vice versa.

§.392. Ploke drops the notes one after the other at the distance of two or more discontinuous intervals, projecting the lower ones or the higher first. As an example of the ploke, look at the discontinuing parallage (§.46).

§.393. Petteia is the attack occurring many times on one note, like



§.394. Toné is a lasting persistence on one note during more than one chronos, done in one pronunciation of sound, that is one tone, using one note. Toné, regardless if it occurs at the beginning of a melody, in the middle of it or towards its end, is notated with the pentaple, when six chronoi are spent, the tetraple, when the chronoi are five, etc. (§.119).

§.395. To these four kinds of Chresis, it is possible to be added by us, silence. Silence is when one chronos goes by between the notes of a melody, without pronunciation either in order to complete the rhythm or the meter, or for any other reason (§.119).

§.396. Ethe in melopœia were three, the diastaltic, the systaltic and the hesychastic. They were called ethe, because by them the state of the soul was observed and corrected. Diastaltic ethos is the one by which majesty and virile disposition of the soul, heroic deeds and related passions are expressed. Tragedy uses this ethos most and among the others, the ones that preserve this character. This ethos is idiosyncratic of our first and third echos.

§.397. Systaltic is the ethos by which the soul is driven to humility and to cowardly disposition. This state of soul fits to erotic passions, laments, compassions and the like. This ethos is idiosyncratic of our second echos and all the plagals except the barys.

§.398. Hesychastic is the one which is followed by serenity of the

soul and a state of freedom and peacefulness. It suits to hymns, pæans, songs of praise and the like. This ethos is idiosyncratic of our echos barys and our first echos.

§.399. Alteration is also considered in melopœia. Alteration is the transposition of something similar to a dissimilar place. It is distinguished in four kinds, of genus, of echos of system and of melopœia. Alteration of genus we do when from the diatonic we go to the chromatic or the enharmonic and vice versa. We do alteration of echos, when from one echos we go to another, we do alteration of system, when from the diapason we go to the pentachord or the tetrachord, and vice versa. We do alteration of melopœia when from the diastaltic we go to the systaltic or the hesychastic and vice versa. These are the most important conclusions about melopœia, drawn from the writings of the philosophers Aristoxenos, Euclid and Aristides, that have been preserved to our days.

CHAPTER II

How Psalmodies Were Sung

§.400.

THE ECCLESIASTICAL MUSICIANS WROTE AND CHANTED THE VARIOUS KINDS OF PSALMODY ON RHYTHMS, according to which they executed the cheironomia, and invented mele suitable to their purposes. They also composed theses of musical neumes in order to write the synopsis of the piece to be chanted and deliver methodically their work to their students. And when their students composed mele, they imitated the manner of their teachers.⁹ This very much contributed to the preservation up to our days of the differences in the mele of the psalmody's species.

§.401. Species of psalmody are the following: Anoixantaria, Kekragaria, Doxastika, Stichera, Dochai, Troparia, Apolytikia, Anastasima, Kathismata, Hypakoai, Antiphona, Polyeleoi, Pasapnoaria, Canons, Odæ, Heirmoi, Katabasia, Kontakia, Oikoi, Megalynaria, Exapostelaria, Aenoi, Prosomœa, Idiomela, Heothina, Doxologies, Asmatika, Mathemata, Typika, Makarismoi, Eisodika, Trishagia, Alleluaria, Cheroubika, Koinonika, Calophonic Heirmoi, etc.

§.402. These species of psalmody are reduced to four genera of melos: the old Sticheraric, the new Sticheraric, the Papadic and the Heirmologic. The old sticheraric melos is the one found in the Anastasimartion, in old stichera and in the Doxastikon by Jacob. Therefore, on the sticheraric melos are chanted doxastika, stichera, anastasima, aenoi, prosomœa, idiomela and heothina.

§.403. The new sticheraric melos is the one found in the Anastasi-






⁹ "The teachers prior to us were in agreement with each other and with themselves, and differed in no way, following the model canon of science ... The gracefully named maistor Coucouzeles does not alter the stichera in his anagrammatisms, but follows them by step, although he was able too – indeed, he was much abler than today's teachers – to compose his own mele, having nothing in common to their model stichera. But, had he acted thusly, he would neither act correctly nor according to science. For this reason, he follows the path of the old stichera precisely and alters them, if at-all, obeying the rules of science. And whoever comes after him imitates in the katanyktika whomever was successful in this art before; and the same holds for the kratemata and the megalynaria." Manuel Chrysaphes.






































matarion by Petros the Peloponnesian. On this melos are chanted doxastika, stichera, anastasima, exaposteilaria, ænoi, prosomœa, idiomela, heothina, kathismata, antiphona and eisodika.

§.404. The papadic melos is preserved in the koinonika and the cheroubika. On this melos are chanted anoixantaria, kekragaria, dochæ, polyeleoi, pasapnoaria, oikoi, megalynaria, asmatika, mathemata, eisodika, trishagia, alleluaria, cheroubika and kratemata.

The doxologies, the verses of the polyeleoi, the “Μακάριος ἀνὴρ” and the like partake of both the new sticheraric and the papadic mele.

§.405. The heirmologic melos is the one found in the Heiromologion by Petros Byzantios. On this melos, consequently are chanted troparia, apolytikia, anastasima, kathismata, hypakoæ, antiphona, canons, odæ, heirmoi, kontakia, megalynaria, exaposteilaria, ænoi, makarismoι, verses of the “Θοῦ Κύριε” etc., doxologies, typika, eisodika and the katabasiae that are chanted in slower tempo. The calophonic heirmologion partakes of both the heirmologic and the papadic melos.

§.406. The mele mentioned were written with fifteen neumes for the notes, because besides the ten neumes discussed in §.27, the ecclesiastical musicians made use of five more neumes, three ascending: the oxeia , the pelaston , the kouphisma  and two descending: the syndesmos  and the kratemohyporrhoon .

§.407. They also used more hypostaseis than the ones mentioned in §.116 for the cheironomia and for the enrichment of melos. Here they are all, named and noted: Parakletike , Stavros , Epegerma , Synagma , Eso Thematismos , Exo Thematismos , Choreuma , Ouranisma , Seisma , Thes kai Apothes , Thema Haploun , Tromikon , Ekstrepton , Tromikon Synagma , Psephiston Synagma , Parakalesma , Heteron , Psephiston Parakalesma , Hemiphonon , Hemiphthoron , Enarxis , Kratema , Kylisma , Antikenokylisma , Lygisma , Clasma , Xeron Clasma , Argosyntheton , Gorgosyntheton , Piesma , Bareia , Diple , Gorgon , Argon , Homalon , Psephiston , and Apodoma .

§.408. If one wishes to understand the melos written in the fifteen neumes mentioned and the hypostaseis enumerated, he may accomplish this by comparison. If, for example, he wants to learn what sound

did the kratemohyporrhoon notate, he has to take the koinonikon of Daniel in echos $\overset{\lambda}{\pi} \overset{\text{q}}{\text{q}}$, notated in the old and the new method and he will easily find out by comparison. If he further wishes to learn how the sound of the ouranisma was produced, diatonically, he has to look at the “Τὴν παγκόσμιον δόξαν” of Chrysaphes how the words “τύλην, οὐρανός, Θεοῦ” are written by him and how by us. If he wishes to see how it was chromatically, he may look at the “Παρηλήθεν ἡ σκιὰ” at the word “ἔμεινας”. He could do the same for the psephiston parakalesma and all the rest, because the neumes and the hypostaseis we spoke about, change their capacity when they change note, as for example, the parakalesma which wrote one sound on note pa and another on note bou, etc.

CHAPTER III

The Contemporary Way of Composing Mele

§.409.

THE ETHOS OF THE ECHOS TEACHES TODAY'S MUSICIANS TO CHANT MELE, either empirically, or artistically or scientifically. The ones that act empirically do not know the musical neumes or anything else among what is taught artistically or scientifically in music, but through much exercise and long practice, they obtain the facility and skill to chant troparia in any of the eight echoi proposed. A chanter chants empirically a troparion on the first echos, for example, and he is not in doubt that he is indeed chanting on the first echos nor does the audience think else wise, even if it includes scientifically trained musicians. Nevertheless, they chant imperfectly because they do not write the chant with the musical neumes (§.6) and are unable to say it always in the same way, every time they wish to.

§.410. Those that chant artistically know the musical neumes and keep in their imagination, as far as their sense can judge, what they have been orally taught. When their nature has a gift for music, and if they do much exercise and training, they obtain the ability to write with musical neumes whatever chant they hear or imagine and to chant it always in the same exactly way, because they do chant artistically (§.7).

§.411. Those who chant scientifically know the musical neumes and keep in their imagination, as far as their intellect can judge, what they have been orally taught. They know the causes and reasons of the musical outcome. When their nature is musically gifted and they insist in exercise and training, they obtain the ability to invent chants, which have the power to move the soul of the auditor to whatever state they wish.¹⁰ They construct imposing melodies and use the neumes appropriately. Besides, as they are philosophers and men of high rank, they

¹⁰ Terpander united with his melody the Lacedæmonians who were divided. Plut. Vol. II, p. 1146. Diodor. Vol. II, p. 639.

Solon drove with his melody the Athenians to the island of Salamis etc. Plut. in Solon Vol. I

compose their own verses, choosing words that fit to their aims. Thus, with the three powerful means, melody, rhythm and text, they accomplish every aim. Amphion inspires with his melody those that were building the walls of Thebes. Orpheus tames the wild beasts. Timotheos arms Alexander during a meal,¹¹ etc.

§.412. To those that chant empirically we have nothing else to advise than to imitate as much as possible the ones that chant artistically or scientifically. If they wish any of their chants to be preserved, they could dictate it to some artistic musician to write it down, if he considers it worthy.

§.413. To those that chant artistically we advise, if the chanted piece is a prosomœon, to use the chant identical as preserved to us either by Petros or by some other teacher or, at least, we advise him that his own chant does not deviate from the melody and the rhythm with which the teachers before him rendered the original prosomœon.

§.414. If it is idiomelon, he should take care primarily with the echos' ethos and, after writing its martyria, to start the melody with the dominant notes. Whenever he comes across a comma in the words of the text, he should bring his melody to an imperfect cadence of the echos. Whenever he comes across a semicolon, he should bring the perfect cadence of the echos. Whenever he comes across a full-stop in the middle of the text, if it is at the end of a large period followed by another large period, he should do a perfect cadence; if it is the end of a short clause or of a regular clause followed by the same, he should bring an imperfect cadence. A final cadence he should only bring when the text ends and there follows a sermon by the priest. As an example, here is a text as composed by Petros:

The teacher of faith, and servant of speech, Andrew, let us praise; because he fishes from the sea's bottom men and, holding in his hands the cross as a pen and destroying the power as an esparto, he drives back the souls from the fallacy of the enemy and brings to God a well-accepted gift. Always faithful, let us praise him and the group of students to Christ, to mediate so that He will be merciful to us the Day of Judgement.


¹¹ Basil the Great, in his advice to the young.


After the martyria of the echos, he starts the melody with the dominant notes di and ne and brings an imperfect cadence on di on *faith*, then another imperfect on bou, on *speech*, then a perfect on *praise*, and all the rest is obeyed as we have said.


§.415. The master melopœos may also make use in his melos of a phthora, depending on the meaning of the text; but he should do it rarely, imitating Petros the Peloponnesian, who created many troparia without any phthora. Because frequent phthorae are evidence of a weakness of the melopœos, since he is not able to find much material in one echos and finds refuge in many. When he is to make a tying and a resolution of the phthora, he should look for what is pleasing to the listeners' judgement and in agreement with melodious alteration (§.388). The same are also observed when one is asked to compose any other species of psalmody that belong in the chant of the new sticherarion (§.403).

§.416. In brief, this is the way that the skilful melopœos should create mele on the new sticherarion. Now, we ask, how should he create mele of the old sticherarion? In our days, this is seldom required, because there exist stichera, doxastika and the rest composed by ancient musicians and one can make use of those. Nevertheless, in case one of the melopœoi, wishes to create such a melos, we advise him to do a lot of exercise and training and investigation in the old sticherarion and, drawing from it, to adapt the old mele on the words of his text, as up to now, foreign mele have not been introduced in the old sticherarion and he need not become the leader of such a forgery. When he borrows the mele and interprets them into our method, he should take them entire, not truncated, and observe by comparison the way the neumes mentioned in §22 and §407, and the hypostaseis (§.118. §.126, §.407) were used in old times. If at the beginning we did not approve of the ancient value of all the neumes and all the hypostaseis, it was because we wanted the elementary only, but the melopœos wishing to work with all of them, is advised to give them much attention and, by comparison, to penetrate deep into them and understand how they were used by our fathers. Then, after he discovers their interpretation he should use them, depending on the requirements. Then, he will be able to hope that he too is composing a melody out of ecclesiastical

theses, delivered by our fathers.

§.417. Chanting on the papadika is of great demand today and especially for the cheroubika and the koinonika. The melopœos should know that after the martyria of the melody, starts a rhythmless melody which is like a prelude. In it the direction of the echos is indicated both in ascent and descent. Next, a perfect cadence is done on the ison of the echos. This kind of melody is called parakletike, because ancient melopœoi expressed such a melody with the paraklitike, which was originally written .

§.418. The melopœos draws most of the material from the melodies left by old musicians on the same poems. He is greatly helped to this by frequent reading and study of old works, which he is able to do by comparison. Because, after obtaining the knowledge of the interpretation of many neumes and hypostaseis, and the ability to adapt them on different notes, he can easily use them repeatedly without being accused of being tautologous. Daniel used eleven times the kratemohyporrhoon in one koinonikon on the echos . Petros used six times the pelaston in the koinonikon “Σωτηριαν ειργάσω”. The newly notated piece should be – or, at least, appear to be – an invention of the melopœos because it is not enough to draw chants from others and use them beyond measure, but the melopœos too should have some material invented recently either by him or by others in some other mele. He should though use this material in a different way in order to distinguish the original melos. Because at times some new mele appear even some new scales. And if he has not any original melos, he should not attempt to do a new chant, but use the ready made.¹²


§.419. The mele may be extended by restatement, repetition, imitation of the meaning, alteration and restitution. Restatement is to do the ascent or the descent of a melody with the same thesis.¹³ Thus, Petros in the koinonikon “Ανέβη ὁ Θεὸς ἐν ἀλαλαγμῶ” ascends from ne to di with restatement. In the “Ἐπεφάνη ἡ χάρις τοῦ Θεοῦ” of echos , he applies restatement on Ἐπεφάνη twice, and on σωτήριος, he uses the first restatement twice and the two following, many times.

¹² “As the musicians, who do not use only what they are taught, but try to create others. And indeed, among musicians, novelty and originality flourish”. Xenophon. Cyr. Educ. Book I, 50.

§.420. Repetition is to apply twice a thesis or a whole melodic period on the same notes, which is very usual in the old mathemata and kratemata. Repetition was also used by protopsaltes Ioannes at the beginning of the kratema of the doxastikon of the polyeleos in echos $\lambda \ddot{q}$.

§.421. Imitation of meaning is to give a high pitch melody to meanings enclosing height – like heaven, mountain – with low pitch melody those meaning something low – like earth, abyss, hell – with joyful sound meanings that enclose joy – like paradise, victory – and with morose sound meanings of sadness – like death, condemnation etc.

§.422. Alteration is the transposition of something similar to a dissimilar place. There are four kinds of alteration: of genus, of echos, of system and of melopœia. Alteration of genus is when we pass from the diatonic genus to the chromatic or the enharmonic and vice versa. Alteration of echos is when we pass from one echos to another (§.415 and §.377). Alteration of the system is when from the diapason we pass to the pentachord or the tetrachord and vice versa. Alteration of melopœia is when from the diastaltic ethos we pass to the systaltic or the hesychastic and vice versa.

§.423. Restitution is to compose for all the endings of the text's periods one cadence, the melody of which extends to two or three four-beat measures, in the new sticherarion and up to several metres in the papadike, as in “Τὰς ἔσπερινὰς ἡμῶν εὐχὰς”, the ἅγιε κύριε, the ἄφεσιν ἁμαρτιῶν, and the ἐν κόσμῳ τὴν ἀνάστασιν, and in the cheroubikon by Petros the Peloponnesian who composed the εἰκονίζοντες, the προσάδοντες and the μέριμναν with the thesis .

§424. Since in the text of the cheroubika and the koinoika there is no final or mid full-stop, but only commas, the perfect cadences occur at the commas, the imperfect at the end of the words and the final, at the end of the Alleluia. As an example, see the cheroubikon by Petros mentioned. When, however, the melismas of the cheroubika are very extended, it is permitted to have perfect cadences where there is not

13 By thesis it is meant here the melody of one or at most two meters or rhythms. Period is the melody of many, at least two meters.

even a comma. The same holds for the koinonikon when it has many words, like the

Ο τρώγων μου τὴν σάρκα, καὶ πίνων μου τὸ αἷμα, ἐν ἐμοὶ μένει, καὶ γὰρ ἐν αὐτῷ, εἶπεν ὁ Κύριος. [Whoever eats my flesh and drinks my blood dwells continually in me and I dwell in him, said the Lord.]

But when the koinonikon has three only words, then on each occurs a perfect cadence. It should be known that the perfect and final cadences are done as determined in each echos, but the imperfect are at the will of the melopœos.

§.425. Melopœia on the heirmologic melos is very seldom demanded today, because most of the mele that would be composed on it, are prosomœa, while the rest, the ones composed by the teachers Petros the Peloponnesian and Petros Byzantios, are in fast tempo (because, indeed, the heirmologika might be in fast as well as in slow tempo, but the sticheraric mele are in slow tempo only). If it is required to compose ænoi and hesperia on the heirmologic melos, you should observe what is said about the heirmologic melos in the instructions about each echos and compose accordingly. If, for example, you wish to compose on the heirmologion, Τὰς ἐσπερινὰς ἡμῶν εὐχὰς, because the difference of the heirmologic to the sticheraric melos lies in the first echos, on the dominant notes, the cadences and the tempo, as made clear in §.321, you should start with pa, do the imperfect cadence on di, the perfect on pa, and in the course of the entire melody, hang around the dominant notes pa and di. You have a good example of this in the heirmologic chant of Petros Τὰς ἐσπερινὰς ἡμῶν εὐχὰς. At times you could have an imperfect cadence on ga, which pre-announces a final or perfect at the end of the troparion or the verse, as is obvious in the heirmologic doxology of Petros.

§.426. Standing at the highest rank of vocal art, the calophonic heirmologion, requires that the melopœos is an expert of many mele and the entire calophonic heirmologion and that he is perfectly trained in psalmody. Petros Pereketes, who composed more mele of this kind than any other before him, was the only successful with this kind of chant and no one before or after him had an equal success. Whoever, therefore, wants to compose a calophonic heirmos on his example,

after becoming a melopœos such as we described, he should observe the manner and the emphasis that he alone applied in his heirmoi and then, he will be able to compose according to the taste of his century.

§.427. In this kind of melos, it is usual to alter the tempo more frequently, to elect the material as said (§.418), to extend the melos as mentioned (§.419), rarely, to make use of a phthora and to accelerate the tempo of the melody from high towards low pitch and the reverse; also, to seek an ethos inclining to softness and joy and make the novelty obvious, as peculiar to one heirmos and absent in the rest.

§.428. After the heirmos, follows a kratema the melody of which has similarities with that of the heirmos and its tempo is twice as fast. As the words of the kratema are meaningless, the melody should have the ability to inspire the listener with the passion intended. After the kratema, comes the epiphonema, which is an heirmos the melody of which is similar, to some degree, to the previous one, but shorter.

§.429. This is how a master composes in the four genera of melos (§.402). When some empirical chanter sings a melody in order that a master musician writes it down in musical neumes, the empirical chanter should repeat the same melody twice and thrice, and the master should take care to find, first the echos of the melody and second, its tempo. The echos may be found out from its four components (§.301); the tempo, from those among the syllables of the melos that spend short chronoi, because it is easier to determine the long chronoi based on the short, than to determine the short based on the long.

§.430. The empirical musician repeats a fragment of the melody once and twice until the master understands it, notates it and writes the martyria. Then, the empirical musician says another fragment of the melody and then some more of the remaining, until the artist writes the entire melody in sections. Next, the empirical musician sings the entire melody and the master musician revises what is notated and corrects the errors.

§.431. Finally, what has been notated is tested by the master musician who sings its parallage, because if there is an error of one tone lower or higher, it is found with the parallage. A still better and more reliable test is done with some instrument, because thus, one could find an error even of a semitone or a quartertone.

CHAPTER IV

On Musical Instruments

§.432.

AS DANIEL, THE PROPHET, although taught the wisdom of the Chaldeans, did not the least harm holy and sacred preaching, thus, when a music lover acquires the knowledge of some musical instrument and its execution, if he wants to gather the useful only like the bees and to avoid the sacrilege use of the instrument, he does not harm sacred psalmody, but strengthens his musical knowledge, as a musician might look with his eyes on the instrument what the voice does in the larynx and the mouth invisibly. Furthermore, the errors that happen to escape the perception of the intellect when one composes with the voice only are revealed on an instrument and may be observed.

§.433. Among musical instruments some are wind, some stringed and other percussive, Wind instruments are the aulos, hydraulis, transverse aulos, photinx, syrinx, salpinx, gaita etc. String instruments are the lyre, kithara, kinyra, spadix, pandouris, phorminx, piktis, sambyke, lekis, trigonon, canonion, santur, harpsichord, etc. Percussive are the tympani and the like on which high and low pitch is not distinguished.¹⁴

§.434. The percussive are rhythmic instruments and please the sense of hearing with rhythm. The wind and string instruments are melodic and dispose the sense with melody. Among the melodic instruments, some are played in single notes and some in many notes. In many notes are played the kinnyra, the canonion, the kithara, the gaita, the santur, the harpsichord.¹⁵

§.435 [436]. Among the melodic instruments, the pandouris is the easiest to teach with; on it the tones, the semitones and, simply, every interval is perceived more clearly. It is also called pandoura and phandouros and among us, tambura or tambur. It has two parts, the body and the neck, on which the tones and semitones are fretted as said (§.63 and §.64). It has three strings, and the first gives the di $\overset{d}{\Delta}$, the second, the ga $\overset{22}{\underset{r}{\text{r}}}$ and the third, the pa $\overset{q}{\underset{77}{\text{r}}}$. The frets of the tones being

movable, they can be fixed according to the music prevailing in every nation. The way we do the frets of the tones, the echoi of the diatonic and the enharmonic genera sound completely, but those of the chromatic genus do not. Therefore, when accuracy is demanded from the frets of the tones, there should be as many pandourides as there are genera and systems in music, that is, six, and one should make the frets of each instrument according to them.

§.436. The aulos comes second in the instruction of music, because it represents the tones with the holes and it is not possible to remake or remove them according to our need or the need of the music of foreign nations as it was said about the pandouris. The auloi are divided into straight and transverse, depending on their application. And their kinds are many, but two are the most perfect and regular transverse auloi: the Arabic, called in Turkish ney, and the European called in French flûte traversière. The Arabic gives ne and the European, di, so that the Arabic transverse aulos is a fifth below the European. The notes emit-

- 14 “Besides the wind and stringed instruments there are others that produce noise only like the crembala, which when touched with the fingers, give a shrill noise.” Athen. Deipn.

These are called in everyday language, or better said, in Turkish, davuls, kiosia, dumb-eleks, tefs, dageredes etc.

The instrument called in Turkish dumbelek is made of a hollow wood in the shape of a cone. It is covered with skin that is smooth and dry. No holes are made to it. It is played beaten with two small sticks. What is called in Turkish kiosia, differs from the dembelek in size, as the kiosia is the larger of all the percussive instruments. It is said that there exists a kiosia inside of which are numerous small dumbeleks that resound with the sound of the kiosia. The kiosia is covered with a thick skin scratched to smoothness.

What in Turkish is called davul is an instrument made of hollow wood in the shape of a cylinder, covered on both ends with smooth, dry skins that have no holes. It is played by beating the right end with a thick wood specially shaped and the left end, with a special thin stick. The one called tef, looks like half a davul and is an instrument made of hollow wood of cylindrical shape, covered on one end only with dry and smooth skin that has no holes. When played, it is held with the left hand and beaten with the palm of the right hand and the fingers of both hands. It is very customary in dances of beasts. The one called dageres is similar to the tef mentioned, except that this is covered with the bladder of the ox or similar thin skins. It has some little bronze wheels at the sides, which make a bell noise when the dageres is beaten; it is used by the singers that the Ottomans call Hanende.

- 15 The gaita, that in our days is very much in use among the inhabitants of Turkish Europe, is an instrument made of a skinbag, filled with air through a wooden pipe thrust in the neck of the bag. At the two behind legs of the skin are thrust two pipes, one of which has no holes and gives the pa, and the other has seven holes above and one below and gives the ascent and the descent of melody with the fingers. The canon, the santur and the harpsichord are polychords and every string gives one pitch, and we do not intend to speak about them.

ted by the Arabic transverse aulos are on the trochos. They are the $\rho, \eta, \nu, \pi, \beta, \Gamma, \Delta$ which means that one same hole emits pa and ke with different blowing. The notes emitted by the European transverse aulos are on the diapason; they are $\rho, \eta, \nu, \pi, \beta, \Gamma, \Delta, \xi$ which means that from one same hole with different blowing are emitted ke and Ke.

§.437. The lyre sounds every genus and every system completely and perfectly, because the tones are not delimited and thus one is permitted to delimit and use them in every possible way, according to his needs. For this reason, however, it is not suitable for the instruction of music to beginners, as the musical intervals are not delimited and are invisible as they are in our body machine. We distinguish three kinds of lyres: the three-stringed, very much enjoyed by contemporary common Greeks, the four-stringed, most in use by Europeans, who call it with the French name violon, and the seven-stringed with which the contemporary noble Greeks and Ottomans exaggerate in sweetness and which in Turkish is called keman.

CHAPTER V

The Dispositions of the Auditors of Music

§.438.

THAT MUCH WE ADVISE WHOMEVER CHANTS ARTISTICALLY, believing that it is enough to give him the elements of melopœia. To the one that composes scientifically, aiming to rise the soul of the auditors to some passion, we say that he should know beforehand how his auditors are disposed to music. Because there are people who have a naturally bad constitution for music, who cannot distinguish a tone, a rhythm or a meter, and to whom music, even the most popular mele, sounds like buzzing or a horn call. We imagine that to them music is annoying noise, often a biting one, since they are unable to feel the slightest enjoyment or other psychic passion. The musician, therefore, is more pleasing to them when he silences than when he chants, because their sense of hearing is stiffen. Nevertheless, there are many others who have a naturally good constitution for music, who can distinguish tones, rhythms etc. The musicians may find these listeners disposed usually in three different ways. The musician should give mele suitable and appropriate to each one of these dispositions in order to please, if possible, everybody, since this is the primary aim of a musician.

§.439. First is the disposition of those people, who due to their nature or of lack of exposure to and knowledge of music, are not in the same state as the ones with stiffen hearing, but they get little moved by mele that are efficacious and have good rhythm. They get pleasure in simple rhythms or in measures clearly divided, in well-distinguished echoi and in one genus only, the diatonic. In this disposition we find common people and especially sailors and craftsmen.

For those the melopœos should not look for long rhythms and meters that encompass over fourteen chronoi or for chromatic and varied melodies, but he should use rhythms of few beats, meters of two, three or four chronoi, vivid, enjoyable and animated echoi, able to move men who are not sufficiently refined by nature or by knowledge through exposure. He should mostly use netoeides rather than hypatoeides notes,

that is, high rather than low. It is also good that the musician tells them before chanting the rhythms and the *echoi*, as they will be easier felt when the listeners learn and get used to them beforehand. These people prefer the most noisy instruments to the fine sounding ones and high-pitched to low-pitched.

§.440. Second is the disposition of some specialists and amateurs of music, who are no little stirred with a usual *melos*, but are extremely affected when they hear a new chant, one that they never heard before. Then, they become possessed by it like Ulysses when he was sailing in his boat among the Sirens. But, what happens to them when they hear *mele* that are well constructed, with rhythmical interest and inclining to joy! And what satisfaction do they get when such *mele* are chanted with brilliant, sharp voice, accompanied with a seven-stringed lyre, a three-stringed *pandouris*, a transverse *aulos* and a small *tympanum*, that is, a *dumbelek*!¹⁶

To such people the musicians should offer *mele* that are grave and long, using most the chromatic among the genera, but with transpositions to the diatonic and the enharmonic. Among the tones, he should use most the *hypatoeides* rather than the *netoeides*. As for the *echoi*, he should choose the ones that the text's meaning demands and need dictates. The rhythms should be extensive and composed of many beats. The instruments applied should be those that emit the notes gently, freely and which strike the ear faintly.

§.441. Third disposition is the one of some people who like one *echos* only and prefer it to all the rest, who like one instrument only and wish to hear only this. This is the result of prejudice, of knowledge and custom. Usually, however, they do not remain in such a disposition until the end, because age and the events of daily life are able to remove one disposition and to introduce some other. With regard to this, it is said that the two chromatic *echoi* suit to the young, the four

¹⁶ For people with such a disposition it is not good to heighten their musical inclination and knowledge to the highest degree, because from passionate lovers of music, they undoubtedly end up to unrestricted critics. They consider any *melos*, no matter how it is, excellent music, and they also find deficient the notes of even the most correct and precise tones. They become unable thus to get even one tiny part of the enjoyment they would otherwise get from music, because the extreme sensitivity makes them, at the very end, insensitive.

diatonic, to adults, and the two enharmonic, to the old.¹⁷ Concerning such partial likings, the following is also said: Some *echoi* appear suitable to be heard in spring, others in summer, others in autumn and others in winter. It is still said that some *echoi* are agreeable in the day, some at night, some in the morning, some at noon and others in the evening. To such people it is the duty of the musician to offer *mele* after he has realized which are the ones that please them, because thus, he will be able to use *echoi*, tones, rhythms and instruments that please them naturally. To conclude, it is their natural inclination that should instruct the *melopœos* what he has to do.

§.442. It is not necessary that one is a music specialist in order to feel joy when hearing a pleasing *melos*. It only suffices that he has a good sense of hearing. The love, the desire or the knowledge that accompany music, might increase the pleasure, but they do not complete it, quite the opposite, they sometimes decrease it, because art harms nature. Music is, in a way, a chain of tones that are more or less apart from each other, depending on some rules that every human being with a good organism knows by birth, because the tones refer to the organization of our bodily machine and depend either on the disposition and orderly movements of the ear's fibres or on the love we have by nature for some methodical order. For this reason there should exist some analogy between the ear, the tones and the rhythms, as in music there is at times an *hypatoeides* area the tones of which it is impossible to please the ear, and also a *netoeides* area that is impossible for the musician to apply without causing some annoying feeling.¹⁸ So, if the musician makes use of as much ascent and descent as the human voice can usually produce with little effort, he does not deviate from the analogy between the tones and the ear.

17 "There are also some preferences of certain melodic species, depending on the sex and the age, as children want joy, women, sadness, and older people want enthusiasm." Aristides *Quint.* Book II, 67.

18 Ancient Greeks, starting with the *proslambanomenos*, ascended up to the *nete hyperbolæon* (§.221), where they stopped. They accepted no ascent above the *diapason*, as *Nicomachos Gerasenos* reports: "They did not accept the human voice to descend below these chords to what they called horn-sounds, coughing, senseless, inarticulate and unmusical sounds nor did they accept high sounds similar to crowing and wolf howling, sounds unable to be composed, to fit anywhere or to produce consonance with other sounds." Aristides, Book II, 35.

§.443. When the melopœos combines tones that are between these two disagreeable extremes, with each other, it is good that this combination is such that nearly every listener will easily understand the relation of the tones to each other, because this is what leads to the liking of a melody, that is founded upon the facility of the ear to comprehend it.

§.444. The melopœos should construct the rhythms and meters clearly, easily divisible and with orderly progress. Indeed, the only way that human beings may in any way be affected by music, is by comprehending these mechanisms, as the body of the listener, submitted to them, desires to conform with the body of the musician with movements of the legs, the hands or the head, movements that happen automatically, without attention or will, like if the members of the body are dragged by the force of music.

CHAPTER VI

The Use of Music

§.445.

BEFORE THE MELOPŒOS STARTS TO CREATE A MELOS, there should pre-exist some aim in his mind, or he should conceive one, because,

Everything that moves, moves because of itself.

Since the use of music refers most to the following three, hymnology, human pleasure and various utilizations of illogical animals, hymnology gives to the melopœos the aim to arouse in the auditors' souls with awe and love of God.¹ There exist many examples of this aim of music; we enumerated them (§.401) together with our advice, as poor as our ignorance was able to provide. Homer wishing to demonstrate the use of music in hymnology, says:

And the Achaic youths, in order
To appease the god with singing,
Chant all day long a beautiful pæan.

§.446. In the use of music for human pleasure, two ideas are distinguished, the logic and the illogic. Logic refers to the affections of the soul (§.189 and 369); illogic refers to the affections of the body,

¹ "Having attributed the origin of music to God, as is our duty, our vocation being to chant in the holy church, let us glorify with compunction God, the invisible present. Because as it is said, the spiritual songs of the angelic and archangelic orders, those honey pouring siren songs, were handed over to the church complete. And as they appear before God with fear and devotion, praising him unceasingly in many different ways, one singing loud 'Holy God, Holy powerful, Holy immortal, have mercy on us', the other 'Alleluia, another 'Sanctus Sanctus Dominus Sabaoth', some other 'We praise thee. We bless thee etc.' and another something else. And as they perform their duty glorifying and praising the creator, thus we, following them and competing with each other, should stand in awe and terror and great piousness, singing together the holy songs in meaningful and meaningless words. Because the wise God-instructed men described the church as heaven, and thus do they call it. Because the terere and the tototo and the tititi and the nenannane and the rest are said to be made on the image of the angelic doxologies of meaningful and meaningless words. Because even the words that seem meaningless, convey something. And it is said: observe what you represent and you sing. Otherwise, how will you defend yourself to the judge, oh man, being of a fluid and dissolving nature? So, the terere is produced from τήρει βροῦ [observe the flow] the tototo from τότε τότε [then, then], the tititi from τί τίτι [what whose]". I found these written in some musical grammar, but they are taken from what Ioannes of Damascus has said on the subject.

bringing to it alterations analogous to the reactions it causes to lifeless bodies.² So, these ideas give to the melopœos an aim either opposite or enhancing of the prevailing affection. So that logic, when merriment prevails, if aiming at the opposite, produces sadness; if aiming to enhance it, it brings even more merriment. Likewise, the opposite aim of sadness is enjoyment; of slackness, vigour; of concern, solace; of lament, compassion; of love, good sense; of exhaustion, comfort, of enraging, taming; of wrath, calm,³ etc. The aim to enhance affections is fully obvious.

- 2 The notes are transmitted to the ear through the air, set into motion by sound; through the ear they are further transmitted to the soul, by which they are distinguished. Because music acts through the air, I do not consider it pointless to expose here the ideas of certain philosophers who wrote about the occurrences in the air caused by sound (§.278), since it will thus be understood how music acts on lifeless bodies as well.

The notes, or simply the sounds, thin out the air. During great celebrations with crowds of people were invoking loudly, it happened that birds flying in the air were falling. So, the soldiers made use of this in order to catch pigeons sent from one besieged city to another, because surface communication was not possible, in order to inform each other on their situation. Also, it is observed daily that clouds dissolve from the sound of bells and the thunder of canons. Lightning also ceases, or rather goes away from churches and from planes with many people shouting. You should however know that these effects become disastrous, even to human beings, if used untimely, that is, when the clouds are not beyond the sound's sphere; because the sound moves the air spreading it spherically.

It is for this reason also that the air carries the attack of the notes to the surrounding bodies, even those far away from the source emitting the sound or the chanter. One can indeed see in churches or theatres that the flames of candles, the smoke and the corpuscles elevated from the earth and seen in the straight lines of the sun's rays entering through any small window, vibrate in accord with the melodies and the rhythm. To this effect, however, the chanters should keep their mouths close to each other.

Air is inhaled into the body; it is swallowed and, being absorbed, enters in all our liquids. Then it is collected, as it is, with all its elements in the stomach, the intestines, the chest, especially between the ribs and the lungs, whence it is called enthoracic air. This inserted air, pressed to balance with the outer air affected by sound, exerts alterations on all the parts mentioned, affecting thus the body. And one may well imagine what huge alterations feels the body influenced by a liquid of such affinity to its own substance.

If it is permitted to us to mix suppositions with facts, the nervous liquid's nature is thought to be similar to that of the air. And if it is so, then all those forces should affect a body gifted with precise sense organs, with great power; especially, with the pleasant feeling, the delight that constitutes music's main end. It follows therefore that the body is no little affected by music.

The air vibrating by the sound of a string puts into motion a string of the same note. This means (says Aristides, Book II, 107.) "If we have two strings of the same note on one kithara and attach a small light reed on one of them and pluck the other, stretched at a distance, we will see the one baring the reed to move vividly sympathetically."

Also, if one has two lyres not much apart in a room tuned in unison, and plays with one lyre, the other will emit the same sounds. In the past century this was observed among others by some Georgios, a blind of Greek origin, highly experienced in Ottoman music. He made the seven stringed lyre that we call violin and the Ottomans, keman, that was four stringed before him. At a close distance, below the strings stopped, he attached seven more metallic strings that make with their accompaniment, the instrument's sound much more sweet.

Kircher says too that he had in a room a many stringed instrument and that he heard one of its strings sounding very distinctly all the sounds of the bell of the neighbouring church.

If one fills up with water or some other liquid glasses of the same dimensions and manufacture, placed close together, and rubs the edge of one of them with his fingers, the water in this one glass as well as all the rest, will be agitated. In this experiment that Kricher was the first to conduct, it is also observed, that the thinner the liquids, the greater their agitation in the glasses, so that the wine's spirit is agitated more and the wine less, and the water even less.

When we consider that the human body is composed of fibres more or less stretched and of liquids of varied substance, we have conclusively to accept that music has the power to bring upon the body's fibres the same results it brings on the strings of nearby instruments.

All the fibres of the human body are set into motion

The more stretched and thinner they are, the more they vibrate

The ones in unison with the sound keep their motion longer.

Music has also the same results on the liquids of the body, as those on the water in the glasses.

All the liquids contained in the body are agitated.

Their agitation is proportional to the thinness of their particles.

The neuroid liquid, if such a liquid exists, is more affected by the note; the lymphatic, less. If this is so, then it is not necessary that the fibres are set to motion when a stringed or wind instrument is played.

- 3 Achilles used music as a means to subdue the wrath he felt against Agamemnon (since he was also taught music by the most wise Cheiron), as said by Homer:

He was delighting his mind with a bright phorminx

Beautifully crafted with a silver cross-bar,

A plunder from the city of Eetion

Destroyed by him.

He cheered himself with this instrument

Singing the glorious deeds of men.

§.447. In the illogical, opposite aim is, when the body is ill to heal it, enhancing aim is to increase the illness.⁴ The very idea of music, to say it simply, augments the appetite,⁵ strengthens the circulation of the blood, and enables the members of the body to resist while dancing,⁶ in marches and toil;⁷ it also brings sleep, irritates wounds, heals epileptic diseases,⁸ soothes the pains of sciatica,⁹ heals the bite of the poisonous spider.¹⁰ In relation to this, Aristeides too says (Book II, 64):

There is certainly no action among men that is carried out without music. Sacred hymns and offerings are adorned with music, private feasts and urban celebrations exult in it, wars and long marches are aroused and subdued through music. Sailing and rowing and the heaviest among labours get lighter, as music becomes the relief of toil.

- 4 Mead reports the following extravagant result of music, a reliable witness of which, he was himself: "A musician had a dog that was extremely disgusted with one sound, hearing it with the utmost detest. Whenever this sound was played, the dog was distressed, it barked and groaned showing uneasiness and extremely bad temper. Wishing to amuse himself but also to find out what would happen, the musician started playing the said sound, repeating it frequently and spending a long time doing this. The dog, like mad shook many times, then fell down with spasms and died.
- 5 It is said that music affects the appetite of healthy people greatly, exciting and sharpening them, in a way, and motivating auditors to behave insatiably and with no restraint in entertainments. Some generals report that soldiers spend more time and eat more greedily, under the sounds of the auloi. The Arabs said that that music fattens them. Even our rulers eat under the concords of musical instruments. And Homer says: "The Gods had a phorminx to keep them company during the banquet."
- 6 We see this happening every day. A man who does not love dancing, not even for one hour, because of the exaggerated laziness that distinguishes him, and who has neither a good voice nor the ability to play an instrument, if provoked by a melody of his taste, will spend the entire night dancing without feeling fatigue. Such heartening and strengthening, and also, music's power to stop horrors, to calm down anger, to prevent and obstruct the desires following drunkenness, might be the reason why musicians sing after a meal, at the dessert, when people eat less and drink more, and most important, they drink various kinds of wine.
- 7 Amphion made lighter the effort of the builders during the construction of the walls of Thebes. Musical instruments such as lyres, auloi, trumpets, kitharæ, drums, cymbals etc., have always been and still are used in military camps. It seems that music serves soldiers not only by inspiring them courage, daring and endurance against the enemy, but also by preventing

anxiety and fear to take hold of them. Also music helps soldiers to march in rhythm, to accelerate or diminish their speed and to conduct all military movements that are variably altered. Music lightens also the fatigue of a tiresome march.

- 8 When one chants or plays a musical instrument by the water, there appears sort of wrinkling on the water's surface, very remarkable. For the same cause, it is said that deafness might occur from an unexpected loud thunder, as well as spasm, madness fits and symptoms of epilepsy. Besides, wounds get irritated, as surgeons in military camps say that wounds suffered in war, deteriorate so long as the war goes on and the wounded hear the thundering of the canons.

It is also evident that music heals epileptic diseases, from the fact that the periods of madness or depression suffered by Saul, did not cease but with David's music. Chrysippe says that the playing of the aulos is an excellent treatment for epilepsy and the sciatica. Asclepiades believed that there is no medicine more convenient than music to treat madmen and those suffering from any mental diseases. This opinion has been proved with many experiments, some of which we hereby report.

Two madmen were completely healed with the music of many instrumental sounds that they were persistently asking for. (*Histoire de l'Ac.roy. des sciences, ann. 1707. p.7*). It is interesting that the symptoms of their illness soothed when the music went on and started again to increase when the music stopped.

Bourdelot reports that a doctor healed the wife of one of his friends from madness, by bringing musicians secretly in her bedroom and ordering them to play three times a day melodies suiting to her moods. *Histoire de la Musique Chap. 11j, pg. 48*. There, he also refers to one instrumentalist who was saved from violent phrenitis in a short time, with vocal and instrumental music performed by friends at his home. He also tells us about a certain sovereign, who was deliberated from a horrible depression, by music.

Wilhelm Albrecht says that, having tried every possible treatment, he healed, the same way, with music, a person suffering from depression. He ordered that a little song be performed continuously during one of the violent fits of the illness. The little song awaking and amusing the patient, brought him laughter, and thus the paroxysm was over. *affectus Musique §.314*. A maiden suffering from hysteria, had tried all treatments with no result. A pharmacist fired unexpectedly a gun close to her bed, causing such a violent motion to her body, that the paroxysm was immediately dissolved, never to appear again.

- 9 Theophrastos too, in his treatise on enthusiasm, relates that music heals illnesses. He says that playing the aulos on the phrygian mode, makes healthy those suffering from sciatica." *Athen., Deipn.*

Of what has been said in the first footnote of §.138, it is not difficult to find out the causes of healing with music of such illnesses as sciatica, feet-pains, hysteria and the other diseases of the nerves: music acts upon the fibers of the acoustical nerves and through the links and joints of these nerves, it affects the entire body mechanism.

Theophrastos was using the phrygian mode to soothe the pains of sciatica. Bonnet says that he saw himself someone suffering from arthritis to recover completely with music. Dessault believes that music is beneficial in consumption too. *Dissert. sur la Musique.*

- 10 In the days of Galien music was used against the biting of vipers, scorpions and the spider of Puile, at Galien's order. Dessault, an excellent doctor of hospitals, says that he used music beneficially for the biting of rabid dogs. Finally it has been shown that music heals from the biting of the poisonous spider; this is achieved when it incites the patient to dancing; when it does not, it is not effective. *Anth. Gaz. Arch.*

The inhabitants of America use music nearly in all illnesses, in order to bring courage and strength to the patient and dissolve thus, the fear and the resulting grief. Because often, these are more disastrous than the illness itself. When Elizabeth was dying, she asked for musicians to come by her, because she wanted to move away through music, the fearful thought of death.

The possibilities mentioned, that introduce music to medicine, were initiated by Pythagoras, who was the first to investigate the subject; by Theophrastos, who applied music in the treatment of sciatica; by Hieron king of Sicily, who recovered from illness a perfect musician;¹¹ by Ptolemæos the second, who getting accustomed to the music played by his side, while ill, turned to a musician; and by Homer, who says:

“With the incantation the black blood was controlled”

Recently many experiments have been conducted and dissertations written on this subject. Baglivi, among others, published a special treatise.¹²

§.448. Because illogical animals too are enchanted by music, depending on the relation of their organism to human beings, some species of animals distinguish certain sounds, voices or instruments, and some, distinguish others, as shown hereafter. The musician should choose in this case too what is useful and apply it befittingly. Because, the horses and the deer are attracted by the syrinx and the aulos, the bustard is enchanted by rhythm, the crabs by the photinx, and the herring comes up on the surface with any melody or loud noise.

Deer and horses listen to the syrinx and the aulos, The bustard is trapped, being enchanted by music; it looks like dancing joyfully and rhythmically, struggling to keep its shoulders beautiful. At the sound of the photinx, the crabs are driven off their holes and run. It is said that the herring also comes up on the surface when there is singing and clapping and then, it gives up.¹³

The parrot and the canary are so fond of music that they are even taught some melodies. Let us see with what joy and attention the canary listens to the melody of the serinette (a musical instrument by which such birds are taught various chants.) It first brings its head close to the railing of the cage in which it is closed, staying motionless and speechless in this position up to the end of the melody. Then it shows joy, by the beat of the wings and finally it tries to repeat the song in accordance with the instructor, in a strange voice.¹⁴

Therefore, the skilful hunter attracts the deer by singing or playing the aulos. The bear-breeder moderates the wildness of the bears with

the syrinx.¹⁵ The elephant breeder tames the elephants with the melody of human voices; and the cattle breeder induces the animals to drink more water, whistling a common melody. The camels in order to carry heavier loads and walk faster, are entertained with musical instruments played close by, or by bells hanging from them.¹⁶ It might be that it is such causes that originated the common use of aulos playing by shepherds.

11 "It is said that Hieron, the king of Sicily, was originally a layman, most unmusical, not differing a bit in vulgarity from his brother Gelon. Because however he fell ill, he became the most musical among men, having listened during the idleness imposed by illness to learned musicians." Ailian.

12 Examining when music was introduced into medicine, we see that its introduction was very ancient, lost in those obscure and mythical centuries where history has not been able to penetrate. Because music was part of the magical and astrological medicine, under the mysteries of which the old enchanter of the people hid the real effects of music, in order to deceive the mob securely, giving to events that are natural and occur by common causes, a character of mystery and the divine. So the wise Boerhaave says with perfect judgment that all extravagant myths about healing of diseases should be attributed to music.

When Clonias, the Pythagorean, because of the changes in life and the mores got weary by anger, he used to take the lyre and play. To those asking him the reason, he said: "I calm down." Athen. Deipn.

13 These are reported by Plutarchos. Kircher speaks of some small animal that sings in the night the seven notes of the diatonic scale ga, di, ke., zo, ni, pa, bou, Ga. Because of the singing and its slow feet it takes this animal two days to reach the top of a tree. Linæos calls it bradypous [slow-foot]. It is also called "ai", because it usually calls "ai, ai". This is the only animal with three toes. Georg. Bed. p. 241.

The story about the dolphin introduced by Arion, is an allegory, used to show the love fish have for music, something known in older times.

Some among the illogical animals are also incited by music to dance with sort of rhythmical motions and jumps on the meter. The hedgehog, when caught, rolls his skin in a mass and hides itself so that we see nothing else but its thorns. But if one strikes rhythmically a metal or a drum, it reveals itself and starts to dance in rhythm. Aldrovandi certifies that he saw a donkey dancing perfectly, at instrumental sounds. Bourdelot reports the same about many mice that someone was showing to a crowd of people, performing on a string a complicated dance; eight among them were much more adroit, dancing in perfect order.

14 On the music of birds many things are said; especially on the music of nightingales, swallows, swans, the Athenian cigala and the rest.

15 What we unobjectionably see music doing on illogical animals is the following: bears and apes trained in various kinds of dances, know to change the dance with the change of the melody and the rhythm; and they dance one dance under a certain melody and rhythm, and another, under a different melody and rhythm.

16 The camels, as the travellers in Asia testify, carry effortless every heavy load and walk with such facility as if they were unloaded, when one plays musical instruments by them. When the playing stops, the vigour of the camels is reduced, they walk slower and want to stop.

In addition, this inquiry on illogical animals has informed us that some of them show the power of music with an extreme aversion and detest they have to certain sounds or to music in general. Baglivi reports having seen a dog that was always sad, howling and bewailing when hearing to the sound of the kithara or any other musical instrument. The strangest of incidents is the one mentioned by Mead (§.447.).

§.449. From those and similar observations the knowledge of which is not necessarily completely useless to the melopœos, we turn again to human affections saying that the ancient Greeks regarded music befit to tame mores and civilize mobs that are barbaric and wild by nature. For this reason they regarded it as a great treasure.

A great and certain treasure is, oh blessed men, music to all who know it and who will study it, because it educates the mores and calms down impetuous persons and controversies.¹⁷

And this kind of music that has become today so much sensual, leading to effeminacy, that it seems as if it is created in order to capture the hearts and incite love in the souls, was for ancient Greeks so much different, that it had the opposite effect; because they used music as a protection from love's arrows and an unfailing treatment to moderation.¹⁸ Since music brought them virtue, they used it in education, and accomplished their aim, because they were concerned with habits, birth and culture.¹⁹

§.450. Accordingly, the melopœos should choose the melody in this manner. He should offer melodies either opposite or similar to every soul (§.446.); thus the ethos hidden will be revealed and improved by conviction.²⁰ If the ethos is unrefined and rough, he should bring it by moderation to the opposite; if the ethos is gentle and soft, he should augment it by similarity and bring it to the right proportions. If the ethos is obvious, he will make use of the appropriate echos and melos, but if its hidden and difficult to recognize, he first brings a melody at chance, and if he is pleased by it, the melopœos should continue with it; if it is disagreeable to him and the ethos remains unshaken, then he ought to change the melody with some other; a person that is disgusted with one melos, may like its opposite.

§.451. For the choice of rhythm, when the cause of the dominating

affection is known, the melopœos may define the modes of training, following Plato's teaching. People that are dull, lazy and low spirited should be brought up with straight rhythms, melodies moving powerfully the soul and other such techniques; more aggressive persons and those approaching frenzy, with the opposites. Thus Pythagoras seeing a young man turning mad and getting ready to set fire to the house of his unfaithful lover, ordered the musician to change the meter of the verses and to sing on the Spondaic; and immediately the severity of the music soothed the distress of the disdained lover.²¹ Sick people should be averted from thinking continuously on their condition, by finding mele that please them and rhythms fitting to their disposition. Because contemplation weighs down sensory nerves submitting it to the perception of pain; suffering then becomes more distressing and grief more insupportable. So, let the musician care to diminish and dissolve the pains of the ill, by preventing the fatal symptoms and by introducing hopes of salvation.

17 On the music of birds many things are said; especially on the music of nightingales, swallows, swans, the Athenian cigala and the rest.

18 What we unobjectionably see music doing on illogical animals is the following: bears and apes trained in various kinds of dances, know to change the dance with the change of the melody and the rhythm; and they dance one dance under a certain melody and rhythm, and another, under a different melody and rhythm.

19 The camels, as the travellers in Asia testify, carry effortless every heavy load and walk with such facility as if they were unloaded, when one plays musical instruments by them. When the playing stops, the vigour of the camels is reduced, they walk slower and want to stop.

20 It is a principle of the soul to consider the double nature [of these bodies]. I speak of masculinity and femininity... So, a feminine form runs within masculine bodies and a manly shape within women, by which we conjecture the similar ethos. Also, men are beardless and women get a beard; a male looks dainty and women look fierce; and so also shall you capture each of the ethoses accordant with each figure. Aristides.

"Music, it is fully obvious, persuades people because it imitates such acts as those that do really happen. In those acts the will comes first and reason follows; and after those, the act is accomplished, imitating mores and affections with meanings of the soul; reason, with harmonies and sounds; and action, with rhythms and movements of the body... Are we to wonder then if the ancients made most improvement through music?"

21 This was found in dictionaries of sciences.

CHAPTER VII

On Harmony

§.452.

THE STUDY OF THE SO CALLED HARMONY, is according to Aristoxenos, one of the ideas into which the science of melos is divided. Harmonics have an elementary power and for this reason the Ancient Greeks put it first in order to its relation with the other ideas. Harmonics is the practical and theoretical science of the nature of the hermosmenon. Euclides calls hermosmenon what is composed of notes and intervals in some order. So, for us, hermosmenon would be the pentachord, the tetrachord and the trichord. The octachord, which is composed of them, would be harmony.

§.453. Harmony, therefore, as Euclides says, is the syntax of systems. It is called harmony because it is assembled of two symphonies, the diatessaron and the diapente.

The very ancients called harmony the diapason, because it was the first symphony to be constructed of symphonies. They called syllabe the diatessaron, because it was the first concept of symphonous notes. Dioxeia was called the diapente as it is continuation of the diatessaron towards high pitch and the diatessaron was the first to be created. The system composed of both the syllabe and the dioxeia is the diapason.²²

§.454. We showed in §.57, that there are four symphonies, the diapason, the diapente, the diatessaron and the diatrion. The diapason is the most perfect and the most agreeable to the ear. For this reason, the diapason system is preferred among the Europeans and the Ottomans and it is the only one used by them, who tune their musical instruments on it only. The diapente symphony is less agreeable, but dignified and majestic. For this reason, the trochos was considered more fitting to most of the psalmodies by the Fathers of our ecclesiastical music. The diatrion, on which is executed mostly the second echos, is moderately agreeable to us. At the last rank of our preference lies the diatessaron.

§.455. Perfect melos (§.4) and the enharmonic genus (§.268) are also called harmony, as it becomes evident from Aristoxenos, who says:

The people who lived before us wanted to be considered as harmonists only and they were only concerned with harmony, having no idea whatsoever about the other genera.

They used the word harmony so broadly that it signified the melody, the mode and every hermosmenon,²³ even music itself. Whence, musicians were simply called harmonikoi.

§.456. Greeks used the word Harmony with the meanings mentioned above. Europeans use the word in this sense: Harmony is a series of consonances, succeeding each other and pleasing to hearing.²⁴ And as the interweaving of notes makes melody, harmony is accomplished by the interweaving of consonances.

§.457. A symphony, according to them, is composed not only of two notes, like ga ke, but also of three like ga ke ne, or four, ga ke ne Ga, or five, ga ke ne bou Ga.

§.458. Most important parts of harmony are three, the hypatocides, the mesocides and the netocides. Each of these is an entire melody with notes of different quantity either symphonous or diaphonus to each other. So, if harmony starts with the notes zo di bou, the hypatocides takes the note bou, the mesocides the note di and the netocides, the note zo. Very often, though, harmony includes more parts.

§.459. Harmony is sung by many, because one person with one voice cannot sing all the parts of harmony. If, therefore, the symphonies are organized in such a way that they succeed each other and that each chanter chants with his own voice the notes that occur in one part of the harmony that happens to be his and progresses from one note of a symphony to a note of the next symphony, and the voice uttered by the chanters in this simultaneous way is pleasing the listeners, this is

22 Nicom. Geras. Pythagor.

23 "Every Hermosmenon composed of more than one tetrachord is divided into conjunction and disjunction." Aristoxenos, Book III, 58.

24 There exist many other definitions of this meaning of harmony, such as following: Harmony is the art of pleasing the sense of hearing with the mixing of many notes, heard simultaneously.

harmony. This mode of chanting together, is called Accompaniment, *Accompagnement*.

§.460. Two methods of accompaniment are taught, one is generally applied in vocal compositions of psalmody; the other, is done with instruments. In the first method, that was that of the ancients, each point of one part of harmony counters one point of the other parts; and the syllables of words in the melos might be said by the chanters simultaneously or not, depending on the kind of harmony. It is customary to place the original melos to the mesoeides part (*tenore*), played in perfect consonances.

§.461. The composition of melos aims at the pleasure of hearing only and is not obeying to rules, or it does to very few. What may be pleasing, is approved regardless of rules; what not, is likewise disapproved. Harmony is constructed, organized and written based on rules that are not completely tested by hearing; but after being thus composed, it is sung and is often found pleasing to it. So, of the two kinds of music, one is done spontaneously and the other, harmony, with art. A melos might be composed by somebody absolutely ignorant and still please almost more than *Thamyris*. But harmony is done only by those who have been perfectly taught the rules of music.

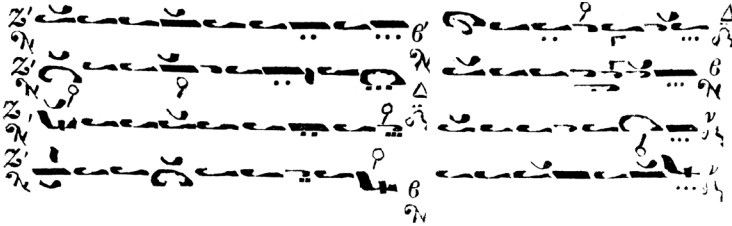
§.462. The rules of this harmony are so numerous that they could fill in an entire book. Besides, they are so strongly based on the intervals of the Europeans' diatonic scale, that if it were to apply them on our diatonic scale, its intervals have to be altered. Harmonic accompaniment also, requires auditors accustomed to draw pleasure by it. To those, who do not draw the slightest joy from such harmonic accompaniment, any extensive discussion on it is useless, because we do not satisfy the listeners. But whoever has the curiosity to inquire minutely on it, they might find one of the books that treat the subject extensively and satisfy their curiosity. Nevertheless, in order just to show how harmony is written, here is an example taken from *Alexandre Choron* and transcribed by *Chrysanthos*.

Faux - bourdons.



gloria patri & filio & spiritu i sancto

Φωξ πουρδόν.





NARRATION ON THE ORIGIN AND PROGRESS OF MUSIC

1. WHOEVER HAS THE CURIOSITY AND DESIRE TO FIND THE TRUEST ORIGINS OF MUSIC, which was said to contain everything in the world,¹ ought to trace back the origins of every nation's dialect. Because, since it appears that every language has its distinct prosody, it follows that every nation has its distinct vocal music, which at its origin was nothing else but Terpsichore's offspring. For this reason, many critical historians, inquiring into the language and the music of every nation, wonder what was created first, speech or chanting. It is said that there was a time when speech was chanting and chanting was speech for the ancient Greeks. Therefore, such an inquiry leads to mythological ideas and falls into gross lies rather than tangible truths.

2. But, whoever gets pleasure in tracing the possibilities about the origins of music, and like a skilful hunter, to run through the memoirs of the historians with accurate thoughts and philosophical research, and seek in this way his aim, to such a person the present book claims able to give a light and faint idea, as well as Plutarch and many other writers among the Greeks and other nationalities'; especially, the Holy Scriptures, from which we start.

3. Before the Flood, we read in the Scriptures, Jubal invented a psaltery and a kithara.² After the flood, in Jacob's time, it seems that

1 The ancients said that music contains everything in the world. Because there is no being without symmetry and proportions. Neither might there ever be beautiful any among the human creations, whether artificial, natural, perceived by the senses, or contemplated by the intellect, if it is not done with the appropriate symmetry and proportions. And music is symmetry itself and wholly proportional because it is the harmony of the universe. It is therefore not unreasonable to call even the divine, harmony of itself and the universe, where everything is put harmonically together and appears to be perfect. Thus we shall consider music – deemed worthy to be called a miracle, observed everywhere, governing and adorning everything, offering joy to the senses, harmony to nature, happiness to the intellect – only as affecting the senses, especially one of them, hearing. Manuel Psellos.

2 Genes. 4:21.

music was zealously and diligently played; because when Jacob left in secret from Laban, the latter, complaining for such a flight, says: “Why did you make a secret of your flight, not giving me word of it, so that I might send you away with joy and music, tympana and kitharæ?”³

4. Moses too besides his other education, was taught music and constructed musical instruments: Moses found the way to make a bucina of silver. Here is how it is: its length is little less than a cubit; it is a narrow pipe, little broader than the aulos; it has an opening at the mouthpiece, just enough for the introduction of the wind and it ends in a bell akin to that of the trumpet. In Hebrew it is called hasosra.⁴ Deborah and Barak were taught music too.⁵

5. And David, it is certain, was one of the most able musicians, capable to harvest the ripe fruit of music, as he healed by it many times Saul from his periodic madness.

“And an evil spirit was created within Saul, and David took the kinnor with his hands and made music and animated Saul. And the good appeared into him and the evil spirit left him.”⁶

As a king, when he formed a group of musicians that he appointed to chant using instruments, while he brought up God’s ark, he listed himself among them. “And David and the sons of Israel were playing before God well tuned instruments with all their might, with songs and kinnors and nevels and tympana and cymbals and auloi.”⁷

David and the others wrote verses which they set to music and chanted them in the temple of God vocally, with various musical instruments for the glory of God; they called them sacrifice of praise and cry of joy. Because considering music a most valuable and worthy thing, they sacrificed to God by it; and they called such verses, psalms.

6. In those times Asaph, the son of Baruch, flourished also. He was a Levite and chanter in the house of God. And Asaph had his sons too

³ Ibid, 31:27.

⁴ Josepos, Chap. i. 1.

⁵ Judges, 4.

⁶ Theodoretos says that David’s healing by music was not natural but supernatural, because David had received the grace of the Holy Spirit. This acted through David and calmed the evil spirit, and the Melos of the lyre was an arrow thrown against the dæmons.” Series of the Saint Fathers.

⁷ Kings II. Chap. VI, 5.

to sing in the House of God. And all the psalms that have an inscription with Asaph's name, were written by David and given to Asaph to be chanted.

7. Two Aemans were also psalmidists; one was the son of Joel, the other, the son of Aetham. The latter had fourteen sons, with all of whom he chanted together. They were also Levites, singing with cymbals, kinnors and other musical instruments.⁸

8. Solomon too, according to the Scriptures, surpassed in wisdom Ethan the Israelite and Heman, Calcol and Darda, the sons of Mahol. He said three thousand parables and his odes were five thousand. There were many other Hebrews that composed music, but for brevity's sake we have only dealt with the most important and will not mention more. So this is what we have deduced as the most important on the subject from the Holy Scriptures.

9. Ancient Greeks being strongly inclined to all kinds of philosophy did not want to classify the knowledge of music outside the sphere of common education. But, Pythagoras and Plato and Aristotle, and simply all versed in philosophy, valued music and considered it a gift of the gods, as we are informed from various historians.⁹ Teaching and been taught music, they discovered a lot about it that they wrote

8 "Among the psalmidists admired were these too, singing the wonders of God with kinnors and nevels and cymbals. An ancestor of Aetham was Merari, who in the enumeration of the children of Levi was in the third order. And Aeman was the son of Joel and grandson of the prophet Samuel, which means that he was related to Kora. And the Korahites were nephews of Moses the lawgiver. Therefore, Aeman's family goes back to him." Photios.

9 "Music is by general opinion a gift of the gods." Plutarch, on Superstition (quoting Plato) vol. VI, p. 638. See also Athenæos, book XIV, p. 624.

One should not agree with those who say that music was introduced to men for deceit and enchantment. He should not believe that the old Cretans and Lacedæmonians were acting at random when they introduced in wars the auloi and rhythm instead of the trumpet. Nor should he think that the first Arcades were by chance offering music to all the citizens - who were otherwise leading very strict lives - and obliged them to be in the company of music not only as children but also as youths up to their thirty years of age. From their infancy, the children of the Arcades get accustomed, by law, to sing the hymns and pæans that praise, according to their native traditions, the indigenous heroes and gods. After that, learning the nomoi of Timotehos and Philoxenos, they dance them every year at the sounds of the Dionysiac auloi in the theatres, the children at children's games, the youths at men's games. And during their entire lives in social gatherings they have not imported sounds, but sing to each other what is befitting every occasion. And if they refuse to learn any other among the lessons, they do not consider it very bad, but abstaining from the practice of singing is thought very bad. Athen. Deipnos.

down.

“Most of the Platonic and the best of the peripatetic philosophers have been seriously occupied with writing on ancient music and on its decline. But also those among the grammarians and the harmonists that received the topmost education, have dealt with the subject thoroughly.”¹⁰

10. The word music according to the memoirs of poets and philosophers, deriving from the Muse, refers the persons interested to the myths or rather the allegories about the Muses. The Muses were said to be three at the beginning, Melete, Mnemosyne and Ode. Melete is the allegory in ethics of the contemplation required in work. Mnemosyne is the allegory of the memory that eternalizes the glorious deeds. Ode is the allegory of the melos that accompanies their narration. Musicians attribute to the three muses the discovery of the three musical tones: the forceful, the faint and the moderate; the low, the high and the ison; the dorian, the lydian and the phrygian; the major, the minimum and the minor. Pythagoras invented, it is said, on the number of the three muses, the three parts of quantity in music: the hypatoeides, the netoeides and the mesoeides. The diatrion symphony should also be mentioned. A later writer¹¹ says that Ptolemæos invented on the same number the three musical neumes, the ison, the oligon and the apostrophos.

11. Some say that the Muses were four, others, that they were five, and others, seven. To the four Muses is attributed the invention of the diatessaron symphony, the tetrachord and the four monosyllable notes, te, ta, tē, to. To the five Muses is attributed the invention of the diapente and the pentachord system; to the seven, the discovery of the heptachord lyre, the diapason system, its seven intervals. On that number were also discovered seven elementary neumes, by which it is possible, it is said, to write the quantity of melody with security. Having added to those, the gorgon and the huple, the quality is also written.¹²

12. Therefore, Homer and Hesiod¹³ teach that the Muses were

¹⁰ Plutarch in the Dialogue on Music.

¹¹ Manual of Ioannes Damascenos.

¹² Gabriel Hieromonachos.

¹³ In the hymn to Apollo.

nine, daughters of Zeus and Mnemosyne. They had no other care on Helicon,¹⁴ than to sing and dance with much gentleness and happiness and praise the deeds of the gods and of Zeus, their father. Singing together one harmony with their most sweet voices, they danced around Zeus' altar, having as leader to their dance, Apollo, who standing in their middle plucked his lyre; this is why he was called Musegetes.¹⁵ Besides being occupied with singing and dancing, each muse invented something, of which she was the protector.¹⁶ Clio found history, and was supervising it; Thalia, gardening; Euterpe, the auloi; Melpomene, ode; and Terpsichore, orchesis; Erato, wedding and dancing; Polhymnia, agriculture; Urania, astrology; and Calliope, poetry.¹⁷ Because singing was the first and principal occupation of the nine Muses, it has been called music.

13. So, this is how music got its name. But who was its first inventor? Some say it was Apollo¹⁸ that invented music first among the gods, and others, say it was Athena.¹⁹ Gerasenes Nicomachus said that Hermes invented the lyre, and constructed it with seven strings, and taught it to Orpheus; Orpheus taught Thamyris and Linos; and Linos taught Hercules and Amphion.²⁰

14. The invention of Greek music is attributed to Amphion,²¹ among men, who was the first to invent kitharody and the kitharodic poetry. Amphion taught Orpheus; and Orpheus taught Thamyris and

14 In Theogonia

15 The Muses reigned on Helicon, a mountain of Bœotia. It seems that the early poets, wondering at the beauty of nature, felt the need to plead the nymphs of the forests, the mountains, the fountains etc. Subjected to the pleasure of allegory, generally prevailing at the time, they distinguished the Muses with names related to the influence each could have on the spiritual fruit. These ideas, however, produced great products, in a barbaric place such as Thrace, because from the surrounding ignorance, appeared soon thereafter musical men, Orpheus, Linos and their students. So the Muses were honoured there, on the mount of Pieria. Extending from there their domination, they were successively installed on the mountains of Pindos, Parnassos, Helicon and all remote places. They were called both Goddesses and Muses, as they were both.

16 Hesiod in Theogony and Pindar in I of Pythians

17 Hesiod. *ibidem*.

18 Plutarch reports in his Dialogue on Music, that Amphion, the son of Zeus and Antiope, instructed by his father, was the first to conceive kitharody and kitharodic poetry. Others say that Apollo was the inventor of all music goods. Corinna says that Apollo was taught by Athena.

19 *Idem*, *ibidem*.

20 In relation to this, see the treatise by Gerasenos Nicomachus, which has been published.

Linos; and Linos taught Hercules, who killed him. Amphion was a Theban, and when the walls of Thebes were being built, he sung and inspired the builders.

15. Orpheus, the disciple of Amphion, the father of poetry, is according to the legend, inventor of rhythms and mele, that many have imitated, while, it seems, he imitated no one. When singing, he moved rocks and trees; he tamed the beasts, and made obedient men that seemed completely rigid,²² because of the prevailing wildness, bringing them to society.

16. Among Orpheus' disciples, Thamyris from Thrace, set to music the war the Titans fought against the gods. Surpassing his contemporary men in handsome looks, in the beauty of his voice and in the art of kitharody, he had the arrogance to compete in music with the Muses. Beaten, he was deprived of his eyes, of kitharody and of his mind.²³ He was the son of Philamon and the nymph Arsia. Linos from Chalkis became the leader of lyric music, inventing the use of strings on the instrument, instead of flax. He was the first to bring the letters to the Greeks; he also taught Hercules and was buried in Thebes. He was honored by poets with lamenting beginnings. The following epigram is dedicated to him:

Oh Linos always honored by gods, because they gave you,
the immortals, the first melos of human beings to sing, on
a dexterous foot. And the Muses lamented while dancing
and singing because you were deserted by sunlight.
And Hesiod said the following verses on him:

21 In relation to that, see Plutarch. The time when the walls of Thebes were being built, and Amphion lived, according to critical historians, is around the year 1540 before Christ.

Amphion won glory for his music, cultivating the Lydian harmony, learning by Lydians on Tantalus and adding to the four previously existing strings, three new ones. Pausanias, p. 720.

22 And Orpheus, who practiced kitharody and whose singing moved rocks and trees, when Euridice, his wife, died, stung by a snake, he descended to Hades wishing to bring her up again. He persuaded Pluto to send her back. Pluto promised, with the condition, however, that Orpheus would not turn to look back while walking, before reaching home. But he disobeyed and turning back he looked at his woman; and she went back again. Orpheus founded also the Dionysian mysteries and he was buried on Pieria, being killed by the Mænads. Apollod. on Gods Book I

Greece owes to Orpheus religion, music, pastorship and other arts. Anthimos Gazes.

23 See Barinos at the word Thamyris.

Urania gave birth to Linos
The most beloved son
Whom all the mortals
That are singers and kithara players
lament in feasts or in choruses
And start and end talking about Linos.²⁴

17. And Hyagnis invented the aulos and the aulodic art, and taught it to Marsyas.²⁵

He taught first Olympos, who brought in Greece the harmonic nomoi.²⁶ Because before him the mele of the Greeks were diatonic and chromatic. It seems, therefore, that he enriched Greek music by introducing a genus that did not exist before and was ignored by his predecessors. He also invented prosodic rhythm on which the nomos of Ares is composed, and the choric, used often in maternity. According to some, he also invented the bacchic.

18. Clonas was the first to compose the aulodic nomoi and the prosodia.²⁷ He also was a poet of elegies and epic poems. However, some say that Troezenios, before Clonas, founded the aulodic muse. The aulodic nomoi were Apothetos, Elegos, Komarchios, Schœnion, Kepion Deios and Trimeles; later on were found and the so called Polymnastia, that got their name possibly from Colophonios Polymnastos, to whom is also attributed the invention of the Lydian tropos.

²⁴ See *ibid* at the word Linos.

²⁵ This is what Plutarch believes. Apollodoros in the book I of his treatise on Gods says that Marsyas was the son of Olympos. Apollo killed Marsyas, hanging him from a long pine-tree, and threw his skin to the river, called thereafter Marsyas. Marsyas had found the auloi that Athena had thrown away because they deformed her looks, and he competed with Apollo in music. As it was agreed by both that the winner would dispose the defeated as he wished, when the judgment took place, Apollo took the kithara and played and then ordered Marsyas to do the same. Being unable, Apollo was found the best, and he killed him.

²⁶ By harmonic nomoi it is here meant the enharmonic genus of music. You should know that nomos had the following meaning to musicians.

They say that Apollo, showed men with the lyra the nomoi [laws] according to which they should live, because with melos, what was in them originally beastly became civilised by the sweetness of rhythm. And these were called kitharodic nomoi. By simplification, the musical modes on which we sing, are also called nomoi.

²⁷ Like the kitharodic nomoi, the aulodic nomoi take their name from the instrument. Prosodia are called the songs sung at the offertories to the altars of the temples. Zenov. K. Pop. CXIX. According to Suidas, prosodia are the poems sung at festivals by lyric poets. The term is written with an o and an ô indiscriminately.

19. The centaur Chiron, who lived on Pelion, surpassed his fellow men in knowledge and justice. He taught Asclepios and Achilles.²⁸ And Asclepios applied music in medicine, an aid against certain maladies, as reported by Pindar.

And Achilles, comforting himself in his sadness, soothed his anger against Agamemnon, through music, as Homer rhapsodized.

He was delighting his mind with a bright phorminx
Beautifully crafted, with silver cross-bar;
A plunder from the city of Eetion
Destroyed by him.
He cheered himself with this instrument,
Singing the glorious deeds of men.

20. At about the same time a certain Demodocos from Corcyra made a poem on the sack of Ilion and the wedding of Aphrodite to Hephæstos. This musician was appointed to stay by Clytaemnestra in order to inspire her with restraint through music. And Phemios, from Ithaca, made a poem on the voyage back home of those who returned from Troy with Agamemnon; as said, a brother of Demodocos, he was appointed to stay by Penelope for the same purpose.²⁹

21. And Homer the superior poet, rhapsodized the Iliad and the Odyssey and hymns to the gods. Because he set to music all his poetry, he heedlessly made many verses slack, hollow and tapering,³⁰ because he completed the lacking syllables with melody.³¹ A beggar, according to some, he was playing the lyre and singing the verses.³² His disciple was Arktinos, who discovered the iambs.³³

22. Archilochos invented rhythmopœia of three-meter rhythms,

28 See Barinos at the word Chiron.

29 These two musicians flourished during the Trojan war, i.e., in the year 1200 B.C.

30 Six are said to be the occurrences of the heroic meter; three of excess: Procephalon, Prokælion, Dolichoouron. Three of loss: Acephalon, Lagaron, Meiouron. Zenovios. K. Pop. Chapter III, § 49.

31 Because a skilled musician is able to fit into melodies of equal length more or less syllables, without producing discontent to sensitivity.

32 It is said that Homer was at first a beggar in Greece, due to poverty and deprivation. Dion Chrys. Speech XI.

33 He was the son of Teleo of Nauteo, a Melesian, a disciple of Homer; according to Suidas he flourished around the 9th Olympiade, but according to Eusebius, around the 30th Olympiade; both are therefore dubious. Zenov. K. Pop, on the Iamb, p. 21.

the setting of homogenous rhythms, accompanied recitative and the playing of all that. To him first are attributed the epodes, the four-meter rhythms, the procratic and the prosodiac, and the augmentation of the first. Some credit him also with the invention of the elegeion. He also showed that among the iambs some may be spoken and accompanied by stringed instruments and some sung. Being a good poet, a fighter and a melopœos, he prided himself of the following as Athenæus reports.

“I am the servant of a warlike King
And an expert with the beloved gift of the Muses.”³⁴

23. Alcman and Hipponax were the inventors of the erotic mele, the first, and Hipponax, of parhody.³⁵ Alcman was from Laconia. But Crates reports that he was a Lydian from Sardis.³⁶ Hipponax was from Ephesus, son of Pytheus and Protis. He fled Clazomenæ, driven out by the rulers Athenagoras and Comas.

24. Lyric poets were Stesichoros, Alceus, Asclepiades and Iykos. Stesichoros was thus called because he set up dances, because he was called Tesias, before. He wrote in the dorian dialect poems in 26 books. His homeland was Imera a city in Sicily. He lived 80 years and died in Catane.³⁷ It is said that he lost his sight when he wrote of an imperfec-

34 The iambs accompanied with stringed instruments follow the poetic rhythm, whereas the iambs sung are said on musical rhythm.

Archilochos was the son of Telesicleus, from the island of Paros. He flourished around the 29th Olympiade, 660 years before Christ. He made a satyric poem which shocked so much Lycambes and his three daughters (because he had promised to give him his daughter as a wife but lied), that they hanged themselves and died, being unable to stand the shame. Apollo chased out his murderer Calondas, saying “You killed the servant of the Muses; get off the temple.” See as well Anthimos Gazes, p. 132

35 Alcman, according to Anthemos Gazes, flourished 610 years before Christ, and according to Zenovios, 670, around the 27th Olympiade. He was from Messoa, a place in Sparta, or a location in Laconia. Hipponax flourished around the 40th Olympiade, 540 years before Christ, according to Plinius. See Anth. and Zenov. What is parhody and epodos is explained by Zenovios Pop, XCV.

36 Alcman was the very best poet of mele according to Plutarch and wrote 6 books of mele.

37 Stesichoros, a lyric poet, is believed by some to be the son of Hesiodos, born in Imera of Sicily in the 37th Olympiade and flourishing in the 50th, 580 years before Christ; he was the utmost enemy of the tyrant Falaris; he died in Catane in the 56th Olympiade.

Alcaeos flourished in glory in the 44th Olympiade; he fought the tyrants more with his odes than his sword, and was the first of the persecuted and their leader. At the end, he was caught by his enemy, Pittakos, one of the seven wise-men, who being a brave man, did not use his power against him.

tion of Helene and that he saw again, when he sung a recantation, the beginning of which runs as follows:

This was not a true saying; you neither advanced in the
well-rowed ships, nor reached the citadel of Troy.

Alcaeos used the alcaic meter in his verses. He wrote odes; he was a Lesbian, from the city Mutilene.³⁸ And Asclepiades used the asclepiadic meter most; but it seems that he was not its inventor, since it was used before by Alcaeos and Sappho.³⁹ Ibykos invented the sambyke, and wrote in dorian dialect 7 books; he was very amorous with boys and was murdered by criminals;⁴⁰ some cranes revenged his death; his origin was from Rhegium.

25. During this same period lived three illustrious female musicians and poetesses, Sappho, Erinna and Damophile. Sappho, was even named the Tenth Muse because of her excellent capability in music. She invented the plectrum and the Mixolydian harmony; she wrote hymns, nine books of lyric mele, elegies, epigrams (some of which are preserved in the Anthology of Epigrams), monodies and iambs. Her mother was Cleis and her city, Mutilene.⁴¹ Sappho surpassed Erinna in odes; but Erinna surpassed Sappho in hexametric verses, that are comparable, it is said, to those of Homer. Damophile's name is said to derive from the citizens' love for her mele; she had some other name before.

26. An illustrious lyric poet was Terpander as well, from Arnaea or Lesbos, descendant of Hesiodos or, according to others, of Homer.

³⁸ Concerning all that, see Zenovios K. Pop, p. 365.

³⁹ See idem, p. 370.

⁴⁰ When Ibykos, son of Phytios, was killed, there were no eye witnesses of the murder. Seeing some cranes, Ibykos said "You oh cranes do revenge my death". And when the city was looking for the murderers and could not find them, in a theatrical performance attended by the citizens, cranes crossed flying. The murderers laughed and said, here they are Ibykos' murderers. One among those seated nearby, heard them and reported to the authorities. Arrested, they admitted the murder and were punished. Ibykos flourished in the years of Creosus, in the 54th Olympiad. In Athenæus there are some fragments of Ibykos' poems.

⁴¹ The renowned poetess Sappho was born in Mutilene in the 36th or 7th Olympiade, 6000 years B.C. Her father was called Scandronymos and her mother Cleis. Between her 25th and 30th year of age she went to Sicily, falling in love; then she came to Leukas, she jumped from the highest cape into the sea –as was common at that time among desperate lovers– and was drowned.

Erinna was from Lesbos, it is said, and flourished at Sappho's times, but she died nineteen years old.

He made the lyre seven stringed, and was the first to write lyric nomoi, although some want Philammon to have been the first.⁴² He named his lyric nomoi Boetian, Aeolian, Trochaios and Oxys, Kepion and Terpandrian. And adapting mele, according to each of those nomoi, on the verses of Homer and of his own, he chanted them in the contests; he won four times successively at the Pythia.⁴³ He rivalled the poetry of Homer and the mele of Orpheus; he also composed tetracædioi nomoi and kitharodic proœmia in verse, and nomoi similarly. To him is attributed the nete of the Dorian, as well as the entire Mixolydian, and the mode of the orthia melody, and the one according the orthioi, adapted to the orthios trochee. And Pindar says that Terpander was the inventor of the Scholia mele also.⁴⁴ He brought music to the highest reputation in Sparta, saying:

Having abandoned the four-toned song,
Let us sing aloud new hymns to the seven-toned phorminx.

27. Excellent melopœoi were: Anacreon, from Teos the city of Ionia, considered also a wise man and true philosopher, who wrote odes and hymns;⁴⁵ Simonides, from Iulis, city on the island of Keo, who according to testimonies of the ancients, was the strongest in stimulating music and who won a prize in the eightieth year of his age. It is said that he invented the double letters, i.e., the H, Ω, Z, Ξ and Ψ;⁴⁶ and Hippodikes the Halchidean, who organized and founded the musical contests.

28. Pythagoras, who believed that the essence of the universe is

42 Suidas, at this word. Terpander flourished c. the 40th Olympiad. Athenæos says that it is therefore evident that Terpander was older than Anacreon. Terpandros is the first ever to win the Carneia, both the metric and the prose victories.

43 Pythia is called a place, a Greek celebration and a festival. See Barinos.

44 Scholio melos is called the one sung in drinking, also named parœnion. See a broader explanation in Zenovios.

45 Anacreon flourished around the 62d Olympiad. He was born in the second year of the 55th Olympiad. His long life reached the 85th year of his age, and he was choked to death by a raisin grape. He lived for a long time in Samos under the tyrant Polycrates who honoured him greatly. Then, by Hipparchos' guardianship, he was taken to Athens in a ship with fifty oars.

46 "He has written elegies in the Doric dialect on the reigns of Kambyses and Darius, on the sea-fight of Xerxes and the sea-fight at Artemission as well as music on the sea-fight of Salamis." Suidas.

Simonides was born in the 55th Olympiad and died in the 78th. Memorable inventions are attributed to him.

music (Pausanias), realized the most philosophical research on music, from all his predecessors. Dividing the fifteen-chord system into five pentachords, he added to the pitches the Proslambanomenos. He discovered the intervals of the tones and expressed their differences in numbers, valid up to our days. Those numbers and the ways that he used to distinguish the intervals, the symphonous and the diaphonous systems etc. are comprised in the present book, but you may find them more extensively discussed in Nicomachus the Pythagorean; he got them from Philolaos who was a student of Pythagoras. The wife of Pythagoras, Theano, was such an educated woman, that not only did she write books, but she also took up her husband's school after his death.⁴⁷

29. Thaletas the Gortynian and Xenodamos the Cytherian and Xenocritos the Locrian, were poets of pæans.⁴⁸ Thaletas did certainly imitate the mele of Archilochos expanding them to longer sizes, but he added to rhythmopœia the Maron and the Cretan rhythms, that were used neither by Orpheus, nor by Archilochos or Terpander. Xenodamos, relates Plutarch, has a song which is evidently a hyporchema.⁴⁹ The Locrian Xenocritos made also some poems on heroic subjects, some of which were called dithyramb.⁵⁰

30. Sakadas from Argos became a poet of mele and of elegies set to music. He was a good epic poet too winning three times at the Pythia.⁵¹ Pythocritos the Sikyonian, a famous auletes, won in six succeeding Py-

47 Pythagoras, the celebrated philosopher was from Samos and was the son of Mnesarchos a ring-carver. He was born between the 43d and the 52d Olympiads and he received his elementary education from Pherekydes and Hermodamas. Leaving for Egypt, he went to temples and sacred lands and was perfectly taught the wisdom of the Egyptians. He was furthermore taught there astronomy, geometry and theology. Captured by Kambyses, he was taken to Babylon, where he got the wise of this place too as his teachers. Returning to Samos, he began teaching, but was unsuccessful; so he left and, visiting the famous lands and temples of Greece, he finally arrived to Italy, and founded in Croton his school, teaching his own philosophical sect. He lived with his students as in a commune and they received his words as if they were oracles, saying "He said so" According to some, he lived 99 years.

48 Pæans were mainly called the hymns to Apollo, sung to be released from misfortunes. See also Zenov. Pop.

49 Hyporchema is called the melos sung in dancing; this is clear from the following: "It is for this reason that from the very beginning it was the poets that created the dances for the free citizens and they used for their formations the sung parts only, preserving always in them gentleness and virility; whence such songs were called hyporchemata." Athen. See also Zenov.

50 The dithyramb is a melos, sung to Dionysos and narrating his loathsome birth.

thiads, the only auletes to do so. He also played the aulos six times in the Olympic games at the pentathlon; for those reasons they erected a grave-stone for him where they wrote the following:

“Memorial of Pythocritos the auletes of glorious victories.”⁵²

31. Remarkable lyric poetesses were also Corinna, Telesilla and Praxilla. Corinna, born in Thebes, was taught by a certain poetess Myrtis.⁵³ She won Pindar five times and received a prize. Telesilla was from Argos, from a glorious family; her body was sick. When she asked the gods about her health, she was told to serve the Muses. Being convinced by the oracles, she took on music, and through harmony she was delivered from her suffering. She was admired by women both for her poetry and for her brave heart.⁵⁴ Praxilla wrote dithyrambs referred to by Hyphæstion; also Scholia, for which she was admired, as Athenaeos reports.⁵⁵ But nothing is preserved among those mentioned by Giralδος Lilius.⁵⁶

32. Lasos the Hermioneus introduced the dithyramb in the games and the argumentative orations, although Herodotos attributes to Arion the Methymnæus the poetry and the name of the dithyramb; he says:

“Arion the Methymnæus, carried by a dolphin at Taenaron, was second to no other kitharode among those existing at the time, and he was the first man, as far as we know, to compose, to name and to teach the dithyramb in Corinth.”⁵⁷ Lassos’ father was Charivinos and his city, Achaia. Some include him among the seven wise men instead of Pe-

⁵¹ Pausanias, Book VI, p. 487.

⁵² Idem ibidem.

⁵³ Myrtis was mother, or at least teacher of Pindar; a woman famous for her virtues and gifts and still more famous because Pindar and Corinna were among her students.

⁵⁴ When Cleomenes, the King of Sparta, killing many, marched towards the city, divine impulse and courage were installed in the mature women who defended their home-land from the enemy. Led by Telesilla they took up arms and standing at the ramparts, they crowned the walls cyclically and astonished the enemy. So they defeated Cleomenes, many of whose men were killed; as for the other king, Damaratos, who entered and occupied the Pamphyliac, they sent away. Obviously, therefore, she flourished around the 139th Olympiad.

⁵⁵ Book XIV.

⁵⁶ Anthol. 91; and Hyphæst. 9. Praxilla was born in Sikyon, and flourished in the 92d Olympiad.

⁵⁷ Cleio.

riander. He wrote a text on music, which however is not preserved. He also taught the outstanding among the younger lyric poets, Pindar; others though say that he was taught by Corinna, who said the following on him:

“I blame the Ionian, the sweet-sounding Myrtis
For she started the pindaric debate.”

His father was Daiphantos, his mother, Myrtis. Being both auletes, they taught their art to their son. He became so famous for his music that, much later, Alexander the son of Amyntas, ranked him among the musicians he respected most.⁵⁸ There was a great rivalry with Pindar and Bacchylides, from Iulis, city of Keo (Tzia), a fellow citizen and nephew of Simonides, who was in fact teacher of Pindar also.

Bacchylides was deigned with greater honours by the king Hieron, than Pindar, who therefore cast his arrows on him, calling him a crow and himself an eagle. Bacchylides wrote erotic poems, prosodes, dithyrambs, hymns, and a lot more.⁵⁹

33. Famous tragic poets were Aeschylus, Sophocles and Euripides. Aeschylus the most majestic of all tragic poets contrived the plan of the scene. He established the number of speaking actors to be two, and inventing many dancing formations, he gave them to the members of chorus. He also invented the costume, decent and dignified, and the rest.⁶⁰ For all those reasons he is rightfully named inventor of tragedy.⁶¹

58 Pindar was born in the first year of the 65th Olympiad; his homeland is known to have been Thebes of Bœotia; due to his great poetic spirit he ousted the shame of his homeland. He was taught the lyre by Lasos the Hermioneus, and poetry, by Simonides. Pindar, in his 40th year of age, was the most celebrated among the lyric poets and was greatly honoured. The Athenians erected a statue to honour him. the Lacedæmonians and Alexander, when they destructed Thebes, preserved Pindar's home. He lived up to his 94th year of age and died in glory.

59 Bacchylides flourished in the year 430 B.C.

60 Tragedy was also adorned by Pratinas, during whose time, a theatre was erected. He was the son of Pyrrhonios or Encomios and flourished at the same time with Æschylus, whom he rivalled, as well as Choirilos. Aeschylus beautified tragedy to such a degree, after him, that he was called the father of tragedy. It is testified by the ancients that he knew how to rouse the affections of fear and compassion above all, like no one else. The son of Euphorion, he was born in the fourth year of the 63d Olympiad. And although he competed not badly on the battle against the barbarians, defeated by Sophocles, he left for Hieron the tyrant in Sicily and died in the fourth year of 80th Olympiad. This epigram is written among others for him: “This very tombstone says that here lies Æschylus, the great man that came from far away, from his beloved Attica, to the white waters of the Sicilian Gelas. What is this malice of the citizens of Theseus' city who envy virtue always?”

The wise Sophocles invented scenography; he innovated with the chorus and, abolishing the acting of the poet, he introduced the third actor. Cultivating sweetness in tragedies, he was more successful than the others.⁶² Euripides the on-stage philosopher, brought many and good things on the stage; he used very familiar concepts, but treated also elevated ideas. The Athenians seeing that these three poets in a short time accomplished great achievements, voted the following:

“The state will write and preserve the tragedies of the poets Aeschylus, Sophocles and Euripides and the secretary of the city will have the right to judge the actors who do not perform their works properly.”

34. Three were the most remarkable philosopher-musicians, Socrates, Plato and Aristotle. “Socrates studied by Conon kitharodia. Not even him did he think it unworthy to study by Conon the musician; indeed he learned to play the kithara when he was already old.” Plato learned music from Dracon the Athenian and Metellos from Acragas. Wishing to prove through harmony the psychic harmony with the four elements and the cause of the symphony between dissimilar things, he said that there are two psychic means in each interval, according to its musical ratio. Aristotle, taught music by Plato, indicated how the young people should use music. In Socrates’ times flourished Damon the Athenian, a pupil of Agathocles and a teacher of Pericles. Damon invented the tense lydian harmony.⁶³ Known to Plato was also Archytas the mathematician who was wholly given to the Pythagorean philosophy and music. His most notable invention was a wooden pi-

61 Tragedy is divided according to quality, into the myth, the ethos, the text, the intellect, the appearance and melopoëia. Whence, every tragic poet is also a melopœos. Zenov. Pop.

62 Sophocles was born in the 73d Olympiad and was called a Bee for his sweetness. He wrote elegies and pœans and a text on the chorus, competing with Thespis and Choirilos. He taught 193 dramas, and won 24 victories; he died 6 years after Euripides.

Euripides, son of Mnesarchos and Cleito, was born on Salamis in the 74th Olympiad, its first year, 480 years B.C. He attended Socrates the Athenian’s meetings and Anaxagoras’ from Clazomena. He wrote many tragedies, 20 of which have been preserved. He later went to Archelaos in Macedonia, where he died.

Socrates was born the year 468 B.C. and died the year 398. Plato was born the year 427 B.C. and died the year 346. Aristotle was born the year 384 B.C. and died the year 320.

63 Damon flourished little before Socrates, since Pericles, his student, flourished concurrently with Socrates.

geon, made with such ingenuity, that it was able to fly by itself.⁶⁴

35. Dionysios the Thebaean, Lampros, Lamprocles, and later, Melanippides the melopœos, and Krexos and Philoxenos⁶⁵ and many more, followed the nomoi established by their predecessors, not wishing to innovate. Phrynys and Timotheos and Epigonos and Lyssandros, and Simmikos and Diodoros, not loving pre-existing music, attempted innovations; Phrynys united the hexameter with free rhythm and made use of more than seven strings. Because since Terpander the Lesbian's times the lyre was seven stringed, but Phrynys added the eighth and ninth strings, and Timotheos the tenth and the eleventh, and led ancient music to softness. For this reason the Lacedæmonians drove Timotheos out of Lacedæmonia, when he went there with an eleven stringed kithara.⁶⁶ This lyric poet from Miletos, was the son of Thersandros or Neomyisos, or Philopolis. He wrote 19 epic musical nomoi, 36 proœmia, one Artemis, 8 arrangements, one encomion, the Persians, or Nauplio, Phineidas, Laertes, 18 dithyrambos, hymns and some more. He died 97 years old.⁶⁷ It seems that he achieved such facility in music, that he was able to instil various passions in the listeners' souls. Thereupon, Basil the Great says:

“He (Timotheos) excelled to such a degree in this art (music), that he was able to arouse courage with earnest and serious harmony, but

64 Archytas was from Taras, his father being either Mnesagoras or Hestiazos. He met Plato in the 96th Olympiad and flourished in the year 398 B.C.

65 Dionysios the Thebaean, an excellent poet and musician flourished in the year 450 B.C. Lampros the Erythræan, the teacher of Aristoxenos, was his contemporary. There existed another Dionysios too, more recent, in the year 138 B.C., called Dionysios Ælios, the Atticist, from Alicarnassos. Philoxenos was born in Kythera, in the year 36 B.C.

66 When he arrived in Lacedæmonia with an eleven stringed kithara, the Lacons expelled him, voting for the following: “Timotheos from Miletos arriving in our city and having dishonoured the old Muse by averting himself from the seven stringed kithara and by playing and introducing polyphony, corrupts the sense of hearing of the young and with the latest polychords of melos, dresses up the Muse effeminately and artificially instead of plainly and orderly, composing mele on the chromatic diesis instead of the enharmonic, that would had brought the opposite results. When he was invited at the games of the Eleusinian Demeter, he sung for the prize an unbecoming arrangement of the fable and did not teach the sufferings of Semele correctly to the youths. The Kings and the Euphores have, therefore, resolved to pass censure upon Timotheos for these things, and further, to oblige him to cut the superfluous among the eleven strings and leave the seven only, and to banish him from our city, in order that men may see the gravity of our city, and be warned in the future, not to introduce in Sparta ethe that lead towards luxury.” This lies in Zenobios K. Pop.

67 Timotheos flourished the days of Alexander the Great.

also to relax and soften the listeners with loose harmony, as he wished. It is said that once he played the aulos to Alexander the Phrygian, during a meal, leading him to fight. He then brought him back to his fellow drinkers by loosening the harmony.”⁶⁸

Epigonios invented a forty stringed instrument and was the first to play without a plectrum. His origin was from Ambrakia, but he was an honorary citizen of Sikyon. Simmikos invented an instrument of thirty five strings, which was perfected by Diodoros, who added new holes to it.

36. Among the ancient musicians listed here, some invented one thing, and some, another. And there were other musicians who helped them with these inventions and still more who made many different inventions; we do not speak about them because of ignorance. It seems to me, though, that we have said enough about the origins and some developments of vocal, instrumental and rhythmic music. Since it is only possible through writing to recollect every art and science, it is not useless to deal with those, that to our knowledge have written at various periods on music.

37. First to write was Philolaos; second was Lasos and third, Dikaearchos. Their writings are lost. About Lasos, we spoke above (32). Philolaos was a student and the successor of Pythagoras. Some fragments of his treatise on music were preserved by Nicomachus the Gerasenos. One of them is hereby quoted for the music lovers:

“The magnitude of harmonia is syllaba and dioxeia. The dioxeia is greater than the syllaba in epogdoic ratio. From hypate to mese is a syllaba, from mese to neate is a dioxeia, from neate to trite is a syllaba, and from trite to hypate is a dioxeia. The interval between trite and mese is epogdoic, the syllaba is epitritic, the dioxeia sesquialterian, and the diapason is duple. Thus harmonia consists of five epogdoic and two dieseis; dioxeia is three epogdoics and a diesis, and syllaba is two epogdoics and a diesis.”⁶⁹

Dikaearchos was Messenian, son of Pheidias, student of Aristotle;

68 Also Dion, Speech I, On royalty. Plutarch (On Alexander's Fate, p. 507). It is said that Antigenis did the same by singing the Harmatios nomos. The same also happened, it is said, to the Cardinal Hippolytos, who fought in Pannonia. Hieronymus Magius, Various texts, Book IV, chap. XIII.

69 See Nicomachus the Gerasenos, on Music.

he was a musician, an orator and a philosopher, whom Cicero called most learned.⁷⁰

38. Aristoxenos is the earliest writer on music whose work is preserved. He was the son of Mnesias also called Spintharos, a musician from Taras of Sicily. He was a philosopher, but dealt also with music and was a pupil of his father and of Lambros from Erythræ, then of Xenophilos the Pythagorean and finally of Aristotle. He wrote 3 books on music, as well as 453 books on philosophy, history and every kind of learning.⁷¹

39. Euclides wrote an Introduction to Music where he exposes the strings of the three genera; he distinguishes six shades, explains seven modes and gives twenty theorems on the division of the canon. This man is known for his elements of geometry.⁷²

40. A certain Nicomachus Gerasenos wrote on music. He divides his treatise in two books. He was called Pythagorean, because he speaks following Pythagoras' ideas. He is named Gerasenos from the city he was born, which was called Gerasa because it was inhabited by Alexander's soldiers when they became old and could not fight any more. This city is close to Bostra and Arabia.⁷³

41. Theon, from Smyrna has left a fragment on mathematics and music, that was edited by Ismael Bullialdus.

42. Aristides Quintilianos wrote more explicitly and fully than his predecessors, and he spoke about melody and rhythms and about the effects of music.

43. Claudios Ptolemaeos wrote in Greek on the principles of harmony, and expressed himself in a more mathematical way. Porphyrios comments on Ptolemaeos' harmonics and has also left a memorandum on music not the least despicable.⁷⁴

70 The book by Dikaiarchos the Messenian on musical contests (which is said to have included 1190 verses according to the annotator of Com.) is mentioned by Fabricius in *Bibliotheca*, book III, chapter XI, p. 267 and 295.

71 Aristoxenos flourished in the 111th Olympiad, and according to Anthemos Gazes, in the year 322 before Christ.

72 Euclid flourished according to the same author, Gazes, the year 258 before Christ.

Eratosthenes known as a grammarian, poet, philosopher and geometer, flourished in the 126th Olympiad, i.e., the year 194 or 6 B.C., and wrote the division of Pythagoras' canon.

73 Nicomachus flourished the year 117 before Christ, according to the same author. His contemporaries were Theon and Aristides.

44. Alypius exposes the signs used by the Greeks for the pitches of the fifteen modes in the three genera, amounting to forty-five diagrams. Those musical signs were taken from the Greek alphabet.⁷⁵

45. Gaudentius, a philosopher, wrote an Introduction to Music, where he speaks about pitches, intervals and modes. He exposes also the signs of pitches in four modes, in the diatonic genus only.

46. Baccheios the Old wrote an Introduction to Musical art in the form of a dialogue; he also mentions ten rhythms. The following epigram about him is found:

“Baccheios the Old spoke about tones, modes, mele and symphonies in music.

Dionysios, writing with him, showed that Constantinos, the greatest despot, was a lover of wise inventions. Because he is said to have been not the least unfamiliar with the inventor and teacher of all wise teachings in music.”

47. Three very learned men also wrote on music, Lucianos Samosateus, Plutarch Cheroneus and Athenaeos. Athenaeos mentions some men who were successful in music or invented something related to it. Plutarch made two dialogues to that same purpose; and Lucianos wrote an orchesis or an encomion to music.⁷⁶

48. In recent years, two men from Constantinople wrote also on music, Michael Psellos and Manuel Bryennyos. A volume on music by Psellos is preserved. It seems that Psellos did nothing more but to sum up a large number of musical terms, definitions and divisions. Byrennyos spoke thoroughly about the quantity in music according to the ancients; also, about the *echoi*, as conceived by the *melopœoi* of his times. It is however, surprising that neither spoke about the rhythms, the *cheironomia* and the music neumes, because Psellos wrote around the year 1105 and Bryennyos around 1320, when, it is beyond question

74 Claudios Ptolemæos flourished between the years 125 and 161 A.D., according to the same author. He lived seventy eight years.

75 Marcus Meibom published a book containing the writings, the diagrams and musical neumes, with Latin translations and annotations, of seven Greek musicians, Aristoxenos, Euclid, Nicomachus, Alypius, Gaudentius, Baccheios and Aristides, creating thus a work worthy of much praise.

76 Plutarch was born close to 50 years A.D. and died in 135. Lucianos, seems to have lived at this same period, according to Anthimos [Gazes], between the years 120 and 200. Athenaeos wrote after the year 203 A.D.

that the neumes and the cheironomia were in use (and lasted beyond the Fall), as there exist sticheraria, written six hundred years ago. Besides, the emperor Theophilus, around the year 830 composed stichera, that he gave to chanters, impelling them to chant; and he was fond of acting the cheironomia in joyful feasts.⁷⁷ Then, the emperor Constantine Porphyrogenetos mentions in various instances the cheironomia, as for instance, when he says: «The chanters chanted with the highly artistic cheironomia around the year 950 A.D.» It is therefore deduced, that the two authors mentioned were not initiated in the music of their times, or that, what they might have written on that subject, has not been preserved.

49. So, this is how many persons we know to have written in Greek on Greek music. Among the Latins and the other Europeans, at Theodorichus times, wrote Boethius, Cassiodorus, Martinianus and Augustine. Recently, Zarlino, Salinas, Valgوليو, Vincenzo Galilei, Doni, Kircher, Banchieri, Mersenne, Parran, Perrault, Wallis, Descartes, Holder, Mengoli, Malcolm, Burette, Rameau, D'Alembert, Rousseau and Choron.

These and not few more wrote on music, stating also, by conjecture, what the ancient Greek musicians said and notating the mele of the Greeks with the notes used in Europe. What they write however on the music used by them today, is wholly true, as thereby they give facts and not suppositions.

50. And all the above refers to Greek music before the Christian era. When our common mother, the Church of the Christians, was getting established and Christianity, spreading to various cities, improved, the Christians thought they should, as was common among the Jews, glorify with music in the holy church the splendours and wonders of God. And they chanted in it David's psalms, but wrote also the mele of *Σιγησάτω πάσα σαρξ βροτεία*, the Cherubikon, the Koinonikon, the *Άγιος Άγιος Κύριος Σαββαάθ*, the *Σὲ ὑμνοῦμεν*, the *Τὴν γὰρ σὴν μήτραν* and the rest mele of the sacred liturgy. Later, they used music in the Vespers, the Matins and the Lauds. Since in the period that lived both Ioannes Damascenos (i.e. circa the year 736 A.D.) and Cosmas,⁷⁸ who

⁷⁷ See Cedrenos.

was brought up and educated with him, a way to write the mele by symbolic neumes was invented, Ioannes Damascenos wrote in these neumes the Anastasima of the Octoechos in the eight echi and the Kekragaria, that were later explained by Petros the Lacedæmonian. He also wrote in the second plagal echos the mele of one Cherubikon, one Koinonikon, the *Νῦν αἱ δυνάμεις*, and the *Προστασία τῶν Χριστιανῶν ἀκαταλόχυντε*; in the first echos, the *Γεύσασθε*. So he is said to be the older teacher and the first creator of our ecclesiastical music, judging from the mele preserved written in the musical neumes mentioned. Writing the Octoechos, he taught the psalmodists after him, not to expand the eight echi nor to let the psalmodies deviate from the eight echi.⁷⁹ Hereby we list in alphabetical order the names of all teachers and inventors of psalmodies, distinguished by time for having delivered or composed things worthy to be chanted in the holy church.

A.

51. Agathon, brother of Xenos Coronos. Athanasios, monk. Athanasios, monk of Athos. Athanasios, patriarch of Constantinople,

78 Our father, belonging to the saints, Ioannes Mansur of Damascus, was from Damascus of Syria, his parents being famous and glorious. His teacher was Cosmas a learned clergyman from Italy, by whom he, together with Cosmas the Melode, was taught in many branches of education, and was perfectly initiated in music. He flourished around the year 728 A.D., under Leon Isavros. He departed to Lord around the year 756. Recent writers place the method and the neumes of Ecclesiastical music back as far as the years of Ptolemaeos the Philadelphos, king of Egypt, that is 285 years before the year of Grace. They say:

“Ptolemaeos the king thinking the echi to be confusing and diverge, ordered the wise men of the Jews to translate the Hebraic scriptures into Greek, and they, collecting all the mele of the echi, composed a book, called Musical. Out of it, all art of the Papadike was known; but it was put to fire with many other books by the atheist barbarians.

Men, not knowing, without these books, how they should praise God, they degenerated to the auloi and the kithara; and they chanted entering in the churches with those hateful to God instruments; and then again they left and went to the theatres, and simply, in every profane act hated by God. All the people were enchanted with these instruments, and dragged by force to the Devil who disparaged them. Until God, having mercy for his creation, raised in the church those three illuminators of the world: the saint of saints, the greatest Cosmas the poet, and his bright and graceful student Ioannes Damascenos and above all, the greatest Lucifer, equal to angels, Ioannes Chrysostomos. Moved by God-inspired will, these men renovated this art, made it harmonious and delivered it minutely and artfully to men.”

79 Depuis que nous avons écrit ceci, nous avons encore trouvé, en feuilletant le même livre, au haut d'une page & dans la marge, cette date, ετος ωκε', ce qui feroit an 805. Si c'étoit-là la date de ce livre, il remonteroit à-peu près au temps même de S. Jean Damascène, qui est l'inventeur de la musique Grecque moderne ; & cela ajouteroit sans doute beaucoup au mérite de ce manuscrit. pag. 789. de l'état actuel de l'art musical en Egypte par m. Villoteau.

student of Balasios. Alypius, Ambelokepiotes. Ananeotes.⁸⁰ Andreas, the holy shepherd of Crete. Andreas of Jerusalem. Andreas Sigerou. Andronikos. Anthimos hieromonachos. Antonios, priest and the great $\text{C}\epsilon\text{e}\text{c}\text{o}\text{n}\text{o}\text{m}\text{o}\text{s}$, student of Hieremias from Chalkedon. Argyros from Rhodes. Arcadios, monk. Arsenios hieromonachos, the great. Arsenios hieromonachos, the small.⁸¹

B.

Balasios, priest, student of Germanos of Nea Patra.⁸² Bartholomæos, monk. Benedictos, domestikos. Blateros. Byzantios.

Γ. [G.]

Gabriel hieromonachos and philosopher.⁸³ Gabriel, from the monastery of Xanthopuloi. Gennadios from Anchialos. Germanos, monk. Germanos of New Patra.⁸⁴ Georgios Kontopetres. Georgios Panaretou. Georgios Sgouropoulou. Georgios Plagioutou. Georgios Protopsaltes of Ganos. Georgios from Rædestos, protopsaltes of the Great Church. Georgios from Crete,⁸⁵ Gregorios Glykys. Gregorios hieromonachos, Bounes Aliotes⁸⁶ [Aliates] and Gregorios the present Lampadarios.⁸⁷

Δ. [D.]

80 Ananeotes was the first poet of $\text{C}\epsilon\text{k}\text{o}\text{i}$; second was Ioannes Glykys, who imitated Ananeotes. Third, was Ethikos. After them came Cucuzeles, says Manuel Chrysaphes.

81 He first composed calophonic Heirmoi, being active little before Chrysaphes and Balasios.

82 He composed an Heirmologion of the Katabasia, abridged by Petros. He wrote mele of doxologies, calophonic heirmoi and many others. He was contemporary to Chrysaphes the young.

83 A manuscript manual on music is also preserved by him, written while the cheironomia was still in use and addressed, therefore, to people that know about it.

84 He was contemporary or little later to Chrysaphes. He flourished around the year 1670. He composed a Sticherarion and a lot more.

85 He was the pen of Iacobos the Protopsaltes, because Iacobos, having not any training in writing, chanted as if dictating and Georgios was writing down. He taught music at the Phanari, in Constantinople, in Chios and in Cydonia of Ephesos, where he passed away the year 1816. He studied under Daniel Protopsaltes, Petros Peloponnesios, Petros Byzantios and Iacobos Protopsaltes. He was the teacher of Gregorios the present lampadarios. The supervisors of our school were planning to bring this Georgios to collaborate with the Three of the New Method of Music, but death forestalled and deprived music lovers from the musical goods expected from him. He was a composer and teacher of psalmody, but not a chanter; he never chanted in church.

86 He was protopsaltes of the Great Church during the conquest of Constantinople.

87 He studied under Iacobos Protopsaltes, Petros Protopsaltes and Georgios from Crete. He is one of the Three Teachers, the inventors of the new method of church music.

David, monk. Damianos Vatopedenos. Daniel the old. Daniel the young. Daniel Protopsaltes, student of Panagiotos Chalatzoglu.⁸⁸ Demetrios Dakianos, student of Cucuzeles. Demetrios from Rhædestos. Dionysios, monk. Dukas, Laosyntaktes. Dukas Siropulos.

E, Z, H [E]

55. Eunuchos Protopsaltes of Philanthropinos. Ephraem from Karia. Zacharias protopsaltes of Kyzikos, nephew of Ananias of Kyzikos and student of Ioannes Protopsaltes. Ethikos. Zacharias Hanendes.⁸⁹

Θ. [Th.]

56. Theodoulos, monk, Theodoros Studites. Theodoros Agalianos. Theodoros Thalassenos. Theodoros Kallikratias. Theodoros Klavas. Theophanes Karykes patriarch of Constantinople. Theophilos the emperor.⁹⁰ Theophylaktos Argyropoulos. Thomas, priest.

I.

57. Iakobos Peloponnesios, Protopsaltes of the Great Church.⁹¹ Hieremias of Chalkeon. Ioakeim of Byzie Alapase, a student of Balasios. Ioannes the holy and our father, Damascenos. Ioannes Glykys. Ioannes Maistor Cucuzeles.⁹² Ioannes Vatatzes. Ioannes Sguropulu. Ioannes Phokas. Ioannes Uraniotes. Ioannes Kladas.⁹³ Ioannes Kukumas.⁹⁴ Ioannes, priest, Plusiadenos.⁹⁵ Ioannes Protopsaltes, student of Panagiotos Chalatzoglu.⁹⁶ Ioannes Protopsaltes of Rhædestos, nephew

88 Daniel Protopsaltes, the melodic trumpet of our century, was from Turnavon close to Larissa. He passed away in 1789, 23 December, Saturday at 12 o'clock. Then, Iacobos was elected Protopsaltes and Petros Byzantios, Lampadarios.

89 Zacharias Hanendes was a contemporary of Daniel. Calophonic heirmoi by him, are preserved. Also, among the present hanendes (singers) are preserved great and praiseworthy fasli.

90 The emperor Theophilos ruled around the year 830 A.D. Cedrenos says about him, that he made it a point of honor to be a melode; therefore he composed some hymns and he wrote the melody to some stichera, that he prompted to be sung. It is also said of him that, impelled by his love of melos, he did not abandon the cheironomia in the Great Church even in joyful celebrations.

91 Iakobos flourished around the year 1790 A.D. He wrote the music of an entire book, the Doxastikarion, eight doxologies, and he abridged the great kekragara and the polyeleos of Daniel. Prompted by the patriarch Gregorios, he corrected the errors that existed in ecclesiastical books due to the negligence of the typographers. He was a good grammarian; he would also had been an excellent chanter, if he had a better rhythm. Because, ignoring the rules of rhythmic and poetic, he did not obey the rhythm of the prosomœa, in order supposedly to express the meaning of the troparia. He thus brought to exasperation Petros Byzantios, who was lampadarios at that time.

and student of Gerasimos of Heracleia, whose student was also Ioakeim hieromonachos of Rhodes. Ioasaph the young Cucuzeles.

K. [& C]

58. Callistos the old.⁹⁷ Callistos from Nicæa. Kampanes. Karburnaris. Kassiane, nun.⁹⁸ Klemes Lesbian. Kornelios, monk. Cosmas the holy and our father.⁹⁹ Constantinos Magoulas. Constantinos from Anchialos. Constantinos Porphyrogennetos.¹⁰⁰ Cantemeris.¹⁰¹ Cyrillos of Tenos.¹⁰²

92 The following is found about him in the book called The Sinners' Salvation:

"There was a youth in the megalopolis Dyrrhachion of the Justiniana Prima. He had lost his father; his mother, pious and loving God, gave her son to learn the sacred books. Everybody called him angel voiced, because he was very bright in spirit and had an extremely beautiful voice. At that time, as is always usual in kingdoms, they were searching for boys who spoke and sung well. Finding him, he was taken in a royal school to be educated in the art of music and learn it perfectly. After a little while, being keen and prudent, he surpassed everybody..."

93 A manuscript musical grammar by him, on the Metrophonia, is cited. He lived after Cucuzeles.

94 By him also exists, in manuscript, a musical grammar on the Metrophonia and on the echoi.

95 A trochos by him is preserved at the beginning of the Papadike.

96 This Ioannes was from Trapezus; a goldsmith at first, he studied later with Panagiotes and was taught by him all the musical works preserved to their days. Becoming efficient in music, he was elected Lampadarios and chanted with his teacher, whom he succeeded after his death, becoming Protopsaltes. He wrote the music to the pasapnoaria, prompted by the patriarch Cyrillos the year 1756 A.D.

97 Nikephoros Callistos Xanthopoulos was still in life the year 1341 A.D. He wrote a catalogue of the ecclesiastical hymnographers.

98 Kassiane is also called Kasia and Eikasia. About her the following are mentioned by Paulos, Kodinos and Theodoros the Prodromos:

"The monastery of Eikasia was built by the nun Eikasia, pious, virgin and a beauty in appearance, who being most wise she wrote the poems and the mele of many canons, stichera and some other admirable creations, the years of the king Theophilos. Kodinos writes the above. Paulos Silentianos, the following: The monastery of Ikasia was built by herself, when she failed to reign with the king Theophilos. She was pious and beautiful and she created canons and stichera in the days of Theophilos and Michael his son. Among her works are the ones to the prostitute and the myrrh, as indeed, all these are hers. - -

"But much earlier, as we know from oral tradition, a woman of the nobility, a wise woman and a virgin called Kasia, was first in melos also and she completed the canon (of the Holy Saturday). The melos was later admired but judged unfit because the musical creations of that hero, Cosmas, were mixed up with feminine words. So, they handed it over to Marcos and undertaking the sacred hymns, it was permitted to him only to arrange the troparia." Theod. Prod.

99 Cosmas was like Ioannes Damascenos in life as in logos, says Meletios in the Ecclesiastical history. Suidas says: "The asmatic canons of Ioannes and Cosmas were unsurpassed; and they will be unsurpassed until the end of our life."

Λ. [L]

59. Laskaris Pegonites. Leon the Wise, emperor.¹⁰³ Leon Halmyriotes. Longinos, monk.

M.

60. Manuel, son of Korones. Manuel Gazes. Manuel Argyropulos. Manuel Phocianos. Manuel Agalianos. Manuel the great orator. Manuel from Thebes. Manougras. Manuel Chrysaphes.¹⁰⁴ Manuel Goutas. Manuel the present Protopsaltes. Marcos Eugenikos. Marcos of Korinth. Meletios of Sina.¹⁰⁵ Melchisedek, bishop of Rhædestos. Michael Ananeotes. Michael, priest, Koukoulas. Moschianos.

N.

61. Nathanael of Nicæa. Nephon domestikos. Nikephoros, hieromonachos Hethikos. Nikephoros from Chios, archdeacon of Antiochea and a student of Iakobos Protopsaltes.¹⁰⁶ Nicolaos domestikos. Nikephoros Tramountanas and Protopsaltes of Rhodes. Nicolaos Asan, the Cypriot. Nicolaos from Andrianoupolis, student of Ioannes Protopsaltes.

Ξ. Π. [X. P.]

100 Constantinos Porphyrogenetos was the son of Leon the Wise. He was born the year 905 A.D. and died the year 959. He had great inclination to studies and love for learning. He reigned for 47 years. He wrote the poems of the exaposteilaria of the Octoechos, preserved with the music of Balasios and, in the second echos, the music of Petros.

101 Cantemeris wrote on music in Greek and in Turkish, but only the latter is preserved, which deals with exoteric music. He invented a rhythm, called Zarpein. He came from the genus of the Moldovlachian princes. He traveled to Turkey, Arabia and Persia and was taught to perfection the music preserved in those places. He used the instruments neï and tamburi.

102 Cyros Cyrillos appears from his treatise on music that he had command of Greek music, of church and exoteric music. He was taught church music by the Protopsaltes Panagiotes. He chanted in times with Daniel in the patriarchate. Concerning church music, he wrote about the neumes and the echoi, giving various examples. Concerning exoteric music, he wrote about perdedes, makams and rhythms.

103 Leon the Wise died the year 911 A.D. He was the son of the Cæsar Basilios the Macedonian, and his successor in the reign of Constantinople. He ruled there 22 years. He made mele or ecclesiastical hymns, among which the eleven Heothina. Their melodies are found in the old Sticherarion; they were composed again by Ioannes Kladas and their melodies were abridged by Iacobos the Protopsaltes.

104 Manuel Chrysaphes the Old was lampadarios of the Great Church at the time of Constantinos Palæologos, the last emperor of the Romans.

105 He was teacher of Georgios from Crete.

106 He teaches music in Jassy of Moldavia.

62. Xenos Coronos, Protopsaltes of Hagia Sophia. Pancratios hieromonachos. Paisios, monk. Panagiotes Halatzoglus.¹⁰⁷

Panaretos. Patzadas Prasenos. Petros Glykys Bereketes.¹⁰⁸ Petros Lampadarios, Lacedaemon, Great teacher; according to Ottomans, Hirsiz Petro, because even when he heard for the first time a new melos, he stole it by notation.¹⁰⁹ Petros Byzantios, Protopsaltes and a student of Petros the Great teacher, a teacher himself of Gregorios Lampadarios and Chrysanthos the archimandrite. He was surnamed Fugas [fugitive].¹¹⁰ Prasenos.

P, Σ, T, Φ and X. [R, S, T, F or Ph. and Ch or H]

63. Romanos the Melodos, the first to invent kontakia; he composed over one thousand of them.¹¹¹ Sergios, Stephanos Hagiopolites.

107 Panagiotes' father was from Trapezus, his profession was halatzes [hallaç] and he was married in Constantinople. A monk, a relative of his and musician came to his house and taught his son Panagiotes few principles of music. Seeing that he had a good voice and a natural talent for music, he advised him to go to the monastery Vatopedion on Athos and study with Damianos, who was then chanting there, because well informed chanters were missing at the time in Constantinople. So, Panagiotes, studying with Damianos, learned all the ecclesiastical mele preserved to their days and, returning to Constantinople, he was admitted as protopsaltes of the Great Church. Mele by Panagiotes preserved are the heirmos Ἐφριξε γῆ, with its kratema, another kratema in echos barys and a few more.

108 He surpassed all the musicians in sweetness in the composition of the Heirmoi, that were called in fact calophonic. Contemporary of Panagiotes, he was Protopsaltes in Emathia. He was called Pereketes because when the students asked him while teaching the heirmoi, if he had more to teach, he always said *Pereketi*. It seems that he wrote the greatest number of mele, among the melodies hereby listed, except Petros the Lacedaemonian.

109 He studied as a child in Smyrna with a monk musician, with whom he learned a good number of mathemata. He then came to Constantinople and studied under Protopsaltes Ioannes, whom he imitated in his mele, expressing them the way he did. He began to write mele while he was still a left domestikos. When Protopsaltes Ioannes passed away and Daniel became protopsaltes, Iacobos should become lampadarios, since he was right domestikos. Petros, however transgressing the order, thanks to the mediation of powerful persons, became himself Lampadarios and took Petros Byzantios as his domestikos. For this reason, it is said, he was despised by both Iacobos and his teacher Daniel, with a hidden hate, that made its appearance at times. He wrote the music of two Anastasimataria, Cherubika and Koinonika for Sundays. Among the koinonika of the year, some are double and many are triple. He wrote pasapnoaria, doxologies, the Doxastikarion entire, the Heirmonologion entire. He explained the Anoixantaria, the great Kekragaria, some pasapnoaria, the Ἀνωθεν ὁ προφήται and some more. He also wrote music to secular verses on the makams and the rhythms of the Ottomans. Among his writings were also found *fasli* and *pesrev*, written down in musical neumes. For all this, he was called a great teacher. He did all that in short time because his life ended while still a lampadarios, being extinguished by a plague.

Sylianos, priest. Symeon Laosynaktes of the Great Church. Symeon Psyritzes. Sophronios hieromonachos Kaffas. Tzaknopoulos. Philippos Gavalas. Phokas, domestikos. Chalibouris. Christophoros Mistakon. Chourmouzes, priest. Chourmouzes, teacher.¹¹² Chrysanthos hieromonachos, Cypriot, student of Ioannes Protopsaltes. Chrysanthos Archimandrites and teacher.¹¹³ Chrysaphes, Protopsaltes, the young.¹¹⁴

64. Those are the persons who in the course of time have been melopœoi, and teachers of the ecclesiastical music preserved by the Greeks; this music was rescued from the great wrecking of the Genus by our motherly church. Because when musical psalmody disappeared from Constantinople, it was preserved in the churches of Peloponnesos and Crete. When, later, it fled away from there too, it was preserved on the sacred mount of Athos, because the propagation of music served the clergy in many occasions, and primarily at vigils, i.e. the night long ceremonies. From Athos, it was brought back to Constantinople by Chrysaphes, Panagiotes and Pereketes.

65. The most outstanding treatises dealing with this music are:

I. One entitled Grammar of Music by Ioannes Damascenos and Cosmas the Melode. It is written in the form of questions and an-

110 He was a Constantinopolite and got his musical education by Petros the Lacedæmonian. He wrote the mele of eight kœnonika for Sundays and eight cherubika, one mathema, one doxology and certain katavasias, the mele of which were not written by his teacher, as well as the entire Syntomon Heirmologion. He also analyzed many old mele. During the first service of Callinikos from Nicaea as a patriarch, because of some errors, Petros was expelled from the clergy and went to Cherson. Then he went to Jassy of Moldavia, and having suffered a lot abroad, he passed away the year 1808 A.D..

111 He was from Edessa. Coming to Constantinople, he dwelled in the monastery of our most holy Theotokos, in Cyros. He created the poem and the melos of *Ἡ Παρθένος σήμερον τὸν ὑπερούσιον τίθει*. Chanting it from the pulpit he was admired and praised by all his auditors. After that, he wrote the poems and the mele of all the rest. See the *Metaphrastes* at October 1.

112 He comes from Chalke, that is, the island Chalke, situated by Bythinia in Propontis. He is a member of the Three Teachers of the New Method of Ecclesiastical Music of today's Greeks and was appointed together with Gregorios Lampadarios to teach in general the practical part of it.

113 He was from Madytos, a city situated by Hellespont. He is a member of the Three Teachers, the inventors of the New Method of Ecclesiastical music and was appointed to teach its theoretical part in general.

114 Manuel Chrysaphes the Young flourished around the year 1660 A.D. He wrote the mele of the Anastasimatarion, Sticheration, cherubika, kœnonika, and more. He wrote a manual on music, in which the man appears to have been fairly well educated both in psalmody and in Greek songs. This manual has been preserved in manuscript.

swers; it is preserved in old sticheraria on parchment.¹¹⁵

II. One inscribed by Ioannes Cladas. It deals with the metrophonia, musical signs and the echoi.

III. One inscribed by Ioannes Plusiadenos or Kukumas. it deals with the above.

IV. The manual of Manuel Chrysaphes, dealing with the neumes, the echoi and especially the phthoræ.

V. One on ecclesiastical and exoteric music by Cyrillos, bishop of Tenos, dealing with the above as well as with the tones and the makams according to the Ottomans.

VI. One on music by Cantemeris, preserved in Turkish only.

VII. A treatise by Gabriel hieromonachos, a philosopher of psaltic art. There are more treatises by less learned persons, that I consider useless to list.

VIII. Ioannes Cucuzeles in his Mega Ison, that was analyzed by Petros the Peloponnesian, lists the neumes and the theses with their melody, used in his days for the representation of the mele. Such methods were written by other teachers musicians also, by which they introduce their students in music for their evolution.

The text of the Great Ison

Ison, Oligon, Oxeia and Petaste; and Diple, Kratema, Kratemokatabasma, Tromikon, Strepton, Thes and Apothos, Thematismos, Orthion; with these, Uranisma, Seisma, Trichisma, Synagma, Cylisma, Strangismata, Krouisma, Other Anabasma, and other Katabasma, Psephistokatabasma, Parakalesma, Aporrhoe, Antikenoma, Antikencylisma, Argosyntheton, Kolaphismos, Koufisma, Kratemokoufisma, Tromikoparakalesma; and Parakletike, Seirma, and other, Darmos, this is called Antikountisma, Choreuma, Heteron, Homœon, Synthesis of the great asma, another synthesis of the same. Heteron, Bython, Gronthisma, Clasma, Both Chæretismos; and Bareia alike, Piasma, Echaden, called Diplopelaston, Thema haploun, end of the sticheron in this, Barys, other Barys tetraphonic, Anapauma, Darta. All these with Epegerma, Stauros, Anapauma today, ⲛⲉ Gorthmos, Diplopetaston,

115 In other sources it is inscribed Method accurately expressed by the holy fathers Cosmas, and Ioannes Damascenos and Ioannes Chrysostomos. It appears, however, from its style, that this is not an authentic creation by any of the three.

Phthora, Enarxis, Gorgon, Argon; and attention student; spirits are four, seven voices diplasmos, and three kratemata artfully composed by Ioannes Cucuzeles the Maistor.

66. From the writers enumerated it is deduced that the use of the neumes of ecclesiastical music was in a good state in the years of the emperor Theophilos, who regarded it an honour to be a melode and to do the cheironomia in the Great Church. There was a music school in the palace, where beginners were taught chanting and the art of the cheironomia. There should have existed a didactic treatise on both these subjects, not preserved to us. The creations preserved to our days are the ones whose mele were written with the neumes mentioned. We hereby say about them our assumptions.

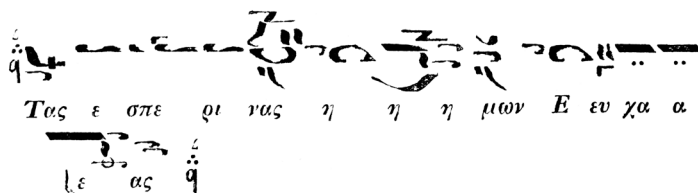
67. The Greeks used as neumes for the notation of their mele, the letters of the alphabet, given by Aristides and Alypios. The neumes by which Ioannes Damascenos wrote his mele, preserved up to our days in our music, were found later. After that, were invented the signs used by the Latins and all the Europeans. However, nor the first or the second, nor the third way of writing the mele were irreproachable, but in the course of time, two – the European and ours – were cultivated and corrected with additions and reductions.

68. The neumes used by our psalmodists from Ioannes' Damascenos times to those of Ioannes Protopsaltes, resembled the hieroglyphic symbols of ancient Egyptians. Because, as one among them had the power to represent many not just syllables but words and entire meanings, thus one or two of those neumes represent one and many pitches as well as entire melodies. And up to the time when the musical creations were few, the students learned them easily and in short time by tradition. When however in the course of time the creations of the teachers increased in number, then teaching the students and learning the ecclesiastical songs required the analogous longer time.

69. In the years of Manuel Chrysaphes, some music teachers appeared saying that everything in music is the metrophonia and that what was said of the hypostaseis and the theses was pointless. Contradicting them, Chrysaphes wrote his manual on music, which displays in fact a refutation of such ideas and an exposition of the neumes and theses, as well as a somewhat obscure elucidation of the phthoræ. How-

ever, the teaching of the metrophonia is preserved up to our times and teachers deliver the Anastasimatarion, first in parallage, then in metrophonia and finally as a melos.

70. Parallage was to adapt the polysyllable notes on the neumes of the melody's quantity, written, and to chant their continuous ascent and descent, and never the ison or large intervals. Metrophonia was to chant the melody of the troparion, as indicated by the neumes that notate the quantity of the melody only, without observing the indications of the hypostaseis and the theses. Melos was to chant the melos of the troparion as indicated by the theses of the neumes and the hypostaseis, by which is written not only the quantity of the melody but also the quality, without ignoring the words of the text. For illumination, let us give an example with the following passage.



71. In parallage, this passage was chanted thus: annanes for the martyria, neagie, aanes, necheanes, aneanes for the chamele, as the apostrophos was subordinated; then, omitting the isa, they chanted neanes nana agia annanes neanes for the petaste and hypsele; nana for the kentemata, necheanes aneanes for the elaphron, because the apostrophos was subordinated; neanes nana for the kentema, because the oligon was subordinated; necheanes aneanes neagie for the apostrophoi, aanes necheanes for the elaphron, nana for the kentemata, agia annanes for the oligia, neanes nana for the kentema, necheanes for the apostrophos, and aneanes for the syndesmos, that is, the two apostrophoi.

72. In metrophonia it was chanted in the way it is written below in our method.

Τας ε σπε ρι να α ας η η η η μω
 ων ε εω χα α α α ας

73. As melos, it was chanted the following way.

Τας ε σπε ρι να α α α α α ας η
 η η η η η η η η η η η η η
 μω ω ω ω ω ων ε ε ε ε ε ε ε
 εω χα α α α α α α α α α α
 ε ε ε α α α α α α α α α α
 α α α α ας

74. The Protopsaltes Panagiotes brought ecclesiastical music from the music teachers of Athos, but it seems that when he delivered the mele to his students he abridged some melodies of the theses or, in other cases, he even altered them, aiming, it is said, at pleasure and embellishment. It is possible, therefore, that this is the cause of the divergence in the recitation of certain theses of the ecclesiastical mele between the Constantinopolite music teachers and those of Athos.

75. His successor Ioannes Protopsaltes was publicly saying that the difficulty of teaching and transmitting psalmody, due to all the time it takes, ought to be removed from their creations (he was maybe imitat-

ing his teacher, because usually the teachers' manners are inherited by students). He thought that a simpler, more methodical and elementary system of characters ought to be established, making it possible to write every kind of melody and to transmit it accurately. So, in the year 1756, when the music lover Cyrillos, driving straight the rudder of the patriarchate, impelled Ioannes to compose pasapnoaria, polyeleoi, doxologies, kœnonika, etc. he used a way of writing, which is different from the old and akin the analytical way, used by his student Petros.

76. Daniel Protopsaltes, Ioannes' successor, drawing alike from the teacher Panagiotes, wished to imitate that analytical way, as is evident in his polyeleos and his doxology. For this reason, there exist in his mele innovative theses, such that were never used by psalmodists before or after him. Because of them, certain persons dared to accuse him of ignorance. He was obliged to innovate because he attempted to introduce in ecclesiastical mele, exoteric mele also, that is mele played in his times by instrumentalists, that it was not possible to write with the old ecclesiastical theses. Being indeed a friend of Zacharias Hanendes,¹¹⁶ he learned by him a lot on exoteric music; likewise, he taught Zacharias in return ecclesiastical mele. It is said that Zacharias invented the mele of some heirmoi and Daniel wrote them down with musical neumes, but he did not give the manuscripts to his students, and they were lost. However, certain chanters know Zacharias' mele and when asked, they say that Daniel did not give Zacharias' heirmoi simply because he never wrote them down. Daniel's qualities are the sobriety and richness of his creation, because when he comes on a pthora, he exceedingly insists on its melody and does not abandon it quickly; such a melopœos is indeed to be praised.

77. When Daniel was Protopsaltes, Petros the Peloponnesian was lampadarios. He was writing day and night analyzing the old musical mathemata, and was carefully writing down every melody that reached his imagination from the outer or the inner world (because, they say, that he distinguished the melody created by the wind blowing on the glass of the windows), and writing the melodies on the makams and rhythms of the Ottomans on as many verses were given him (because a

116 We spoke about him above. The word Hanendes is Turkish, meaning the melode.

verse-mania prevailed at the time among the noblemen and the intellectuals of our genus) he nearly achieved to transform musical characters from symbols to letters. And he is unique among our musicians to reach the summit in the training of practical music. Because what is narrated about Greek musicians, that when Constantinople fell to the Ottomans, they were able to write mele played by musical instruments the minute they were performed, and sing them accurately at first hearing, is questioned by some people, but in the case of Petros it is certain, because it is reported by eyewitnesses that are trustworthy being among the best of our genus. So, the Ottomans were playing new melodies invented by them never heard before, and he was writing them down and singing them and playing them on the tamburi. When this was known by the ruler of the time, he showed Petros' his favour giving him a free pass in the palace.

78. Daniel's successor, Iacobos the Protopsaltes, preserving faithfully what was handed over to him, advanced persistently on the footsteps of his teacher and did not enjoy innovations. When Agapios Palermos from Chios came to Constantinople, well educated in European music, presenting himself to the Patriarch Kyrios Gregorios, he proposed his holiness and the entire Holy Synod, after showing many defects of the notation used then by ecclesiastical musicians, that it would be to their advantage if the chanters of the Great Church were taught a system contrived by him,¹¹⁷ endowed with the merits of European music, but free of its deficiencies. He proposed them to ensure that the ecclesiastical system is corrected giving it the proper analogies, or to create another, a new system, or to keep the one offered by Agapios himself and transcribe all the ecclesiastical mele known to them. With such words, he wholly convinced his holiness, but was not able to persuade Iacobos fully. It was ordered therefore that Agapios would teach in the patriarchate, and that the domestikoi, among others would

117 He travelled through Europe in order to be taught the music of the Europeans perfectly and then come to Greece and benefit his compatriots. So when he got a sufficiently thorough knowledge of the music mentioned, he came to the Sacred Mount. Having not achieved his aim there, he went to Ephesos. Unsuccessful there too, he came to Constantinople during the first patriarchate of Gregorios Peloponnesios from Smyrna and taught music in European notes. Failing, he transformed his system and when he came a second and third time to Constantinople, he was using the alphabet. He died in Bucharest the year 1815.

be taught by him.¹¹⁸ However, Protopsaltes Iacobos remained unconvinced and because of his ironic remarks on the pronunciation and the manner of teaching Agapios introduced, this attempt did not bear fruit. So Iacobos, the zealot of the ancient tradition of ecclesiastical music, set to music a doxastikarion, in which he tried to include all the old theses of the sticherarion, not using even the most commonly used among the new theses. He wanted the old theses to be pronounced in the tradition of the old teachers, not altering them with abbreviations or adornments. And whenever he wished to use one of them in a new way, he was writing it analytically. In spite of that he himself abbreviated (with embellishments as is his inscription) the great Kekragaria, the Heothina and Daniel's Polyeleos.

79. The Protopsaltes Petros Byzantios, who succeeded Iacobos, aiming at orderly and good rhythm in psalmody, was frequently reproaching Iacobos that he was transgressing the rhythm of the Prosomœa, in order, supposedly, to interpret the meaning of the text.

118 The first chanter of the right chorus has the office called Protopsaltes. The first chanter of the left chorus has the office called Lampadarios. The second chanters of both the right and left choruses are called Domestikoi.

Patriarchs in the course of time, greatly cared for the preservation of ecclesiastical music. This becomes obvious in the present book, as well as in many others and especially in a document, written at the times of patriarch Neophytos, preserved in a sacred codex. Here is its preface.

The obligation laid upon us for the generous care for the decency, virtuous state, inclination to perfection and improvement of the holy churches of God, those situated even far away and everywhere, is not small, and this obligation is much greater for the decorum, the harmonious orderliness and the decency of our Great Church of Christ, the common mother of all devout Christians the world over. Generous prizes should be offered on behalf of it; we ought to become involved with scientific thought and look after the preservation of its decency and splendor vigilantly. Carrying out this obligation laid upon us, after a minute research, in common with the sacred brotherhood dwelling here, the holy Synod and the most esteemed trustees of the Kœnon of our Great Church of Christ, on the conditions of the highly musicological chanters, the protopsaltes Kyr Iacobos and the Lampadarios Kyr Petros, and of the students taught by them, in our most venerable Great Church of Christ, we see that their work is neglected and that the persons studying them do not improve, nor are they able to officiate in our Great Church of Christ, when some one passes away. And the obvious reason of all this, is that the fees of those very best of our ecclesiastical composers and all the gain or profit they draw from the Church's income, does not suffice them. Consequently, the art of ecclesiastical music, that they alone are able to teach to the benefit of many people, is in danger of being effaced. Therefore, for the orderliness and harmony of the Church, it is necessary to show seriously our concern, because we do know that their needs ought to be satisfied, their fees increased, providing thus...

In the year of Grace 1791, December 2, Epinemes. X.

Petros learned the power of the cheironomia used by chanters in the church, and he was saying: “If I only knew that there exists an expert of the cheironomia even in America, I would go, in spite of all my poverty, to study with him.” This Petros was the only one, after his teacher Petros the Lacedæmonian, who knew how to analyze and write as he did. Indeed, his explanations created doubts as to whether they were done by him or by his teacher. For this reason, all students were taught the old mathemata by both Iacobos and Petros, but the new ones, by Petros only. He promised to analyze all the old mathemata of ecclesiastical music and to publish them, if he found persons to reward his efforts. Nevertheless, his analyses did not go in vain after his death; but the superintendents of our school were interested and bought all his books, his analyses and his notes, to be used in this school.

80. When he fled (or was maybe expelled), he was succeeded by Manuel the present Protopsaltes, in whose time is accomplished what was long missing in our ecclesiastical music, that is, the measurement of time spent in melody, the regulation of scales and neumes, and of all the rest, the application of which was not up to this day introduced in our ecclesiastical music, but is introduced now by the Three Teachers. If the old mele have an orderly rhythmic motion and fit better than the new mele in the meters, it is because of the cheironomia and the rhythm that were known to the creators of those mele. Manuel wrote the mele of *Μακάριος ἀνήρ*, the Antinphona and one short doxology in echos barys; he passed away on June 21 of the year 1819.

81. So, today music is offered to music lovers as it was initiated by Ioannes Damascenos and improved up to our days. It preserves the first and ancient mele but approaches also the more recent mele; it applies among the old neumes those that are efficient, but has also acquired some new neumes, that were necessary. So, what is it, old or new? It is neither old or new. It is one and the same perfected in the course of time.

HOW MUSIC SHOULD BE APPROACHED

82. "WHAT IS BEAUTIFUL IS BELOVED AND WHAT IS NOT BEAUTIFUL IS NOT BELOVED" said Theognis. Whence, in order that a chanter is beloved, and not despised, by listeners, he should be beautiful. In chanting, beauty consists of:

I. Euphony. Without it, it is "like sowing the sea with a grain of salt from the city". Euphony is not only sweetness of the voice (a gift desired by every one but given by nature to few), but also the ability to sound the pitches faithfully to the delineation of tones.

II. This given, the chanter should have a mimetic disposition, either by nature or by practice. Because every place has its own customs regarding the articulation of melody and the pronunciation of the text, and in many cases the chanter is obliged to say not only the melodies but the words of the verses also following the melodies in use in each place or rather, the traditions of the inhabitants; if he is able to imitate them, he is successful, if not, he achieves nothing.

III. Given those, he should be sufficiently educated in his own language at least (as no one expects every musician to be a philosopher too) in order to understand the meaning of what he chants. Because it is correct to chant joyfully what is merry and pitifully what is sorrowful; also to ascend when ascent is signified and to descend when depth is signified; and in general, to use the melodies according to the meanings.

83. Whoever is endowed with the above, if he wishes to be taught music, should not be under age nor above it, that is, he should not be younger than thirteen years of age, nor an old man. He should be instructed vocal or instrumental music during one, two, or at the most, three years, so that he will not hinder himself from other more beneficial studies because of music. In relation to this, he might obey Plato, who says:

Ordinary time to start playing the lyre is when they reach thirteen years old. They should continue studying for three years, neither less nor more.

84. When taught music, he should take into consideration the following four:

I. Pay much attention to the teacher and learn the melos taught in such a way that there will be no obvious difference in the pronunciation of the melos taught, because in chanting more than anywhere else, vanity enslaves most people and does not let them judge correctly. One, therefore, should have experts who are very familiar with the piece chanted in order to judge its correctness.

“The beautiful things that you do not seem beautiful to us.”

II. He should not wish to do innovations in pronunciation, writing or execution of foreign mele, embellishing or abridging them. People, usually, the more ignorant they are in music, the more have they the insolence to correct foreign mele. Since, however, it is permitted to anybody to compose whatever he wishes, what is the point of modifying and transforming foreign mele?

III. He should, imitating in many ways his teachers, attempt to compose his own mele, which he should present to impartial judges, and correct what is criticised with tolerance, without insisting obstinately on the errors he ignored, which are often covered by arrogance with the jacket of correctness. Moreover, he should consider for himself the saying of the wise man:

“Not everything that man desires, is fulfilled”

IV. He should not be disgusted at first exposure to foreign mele, or criticise them before he studies them for a long time with much attention. Instead, only after he has learned them well and mastered them perfectly, should he decide to deduce the proper criticism. Because, since everything in music is familiarity, as Plutarch said, the quality of a new and unusual melos may only be conceived after he has achieved familiarity with it. Besides, many mele that disgust the listener in the morning, please him in the evening.

THE END

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Παναγιώτης Πάλης

MUNICH OF BAVARIA

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Γεώργιος Σβύνος Καλύμνιος
Νικόλαος Μ. Σβύνος Καλύμνιος
Άναγνώστης Τζαούσης Καλύμνιος
Σωτήριος Γερούσης
Άναστάσιος Ζωγράφου εκ Κόρυτζας τής Άλβανίας

Κωνσταντίνος Μ. Κούμας
Ἰωάννης Κατακουζηνός
Γεώργιος Πιερόπουλος
Γεώργιος Μεντζέλος
Ἀποστόλης Καλογιώργης
Μάρκος Παπαδάκης
Νικόλαος Ποστολάκας
Παναγιώτης Δεγριμής
Ἰωάννης τοῦ Χ. Μήμα
Γεώργιος Ἰωάννου
Θ. Δούμα
Κ. Μπερτουμή
Ἰωάννης Ῥάλλης
Νικόλαος Ἡσαΐας
Παῦλος Μαυροκορδάτος
Ἰωάννης Σκαραμαγκᾶς
Πέτρος Ἰσοῦφ
Λεονάρδος Κ. Βούρος
Θεόδωρος Ἀχιλλεύς Ἱατρός
Ἰωάννης Δραγίνης
Φραγκούλης Ν. Γλυκοφρεΐδης
Περικλῆς Σαπεντζάκης
Κωνσταντίνος Ταμποῦρος
Δημήτριος Πλατυγένης
Εὐστράτιος Μεταξᾶς
Βασίλειος Σάββας
Γεώργιος Βλισμᾶς
Ἀλέξανδρος Λιβαδίτης
Σπυρίδων Α. Ἀντωνόπουλος
Κυριακός Κάτραρος
Μιχαήλ Παξιμάδης
Νικόλαος Βασίλειος τοῦ Ἀντωνίου
Νικόλαος Σταματόπουλος
Δημήτριος Κασάπης
Γεώργιος Διαζός
Ἰωάννης Μ. Ῥοδοκανάκης
Ἀλέξανδρος Γαλάτη
Κωστάκης Σπανδονῆ
Δημήτριος Θεοδώρου ἐκ Σερρών
Πέτρος Λαγγερόπουλος Πατρεὺς
Ἰωάννης Κάππαρις
Ἰωάννης Ἀποστολόπουλος

Ἀλέξανδρος Βλαστός
Γεώργιος Σαριδάκης
Ἰωάννης Ἀνδρελάκης
Ἰωάννης Κόσσυφας
Λεονῆς Τζίτζικλῆς
Μιχαήλ Δέλτας
Λούκας Σωτηριάδης
Νικόλαος Στράτης
Ἰωάννης Βοζίκης
Μ. Βογιαζόγλου
Ἰωάννης Ῥήγας
Ἰωσήφ Βατόρης
Βασίλειος Πιτακός
Παναγιώτης Τζίπουρας
Κωνσταντῖνος Δουραμάνης
Νικόλαος Μπιριάζος
Δημήτριος Κολέας
Παρθένιος Ἱεροδιάκονος Γ. Πελοπίδης
Βασίλειος Π. Πελοπίδης