

GREEK SERIES • VOLUME 5

GREEK HARMONICS

ARISTOXENUS & OTHERS

ΑΡΜΟΝΙΚΑ ΣΤΟΙΧΕΙΑ
ΕΙΣΑΓΩΓΗ ΑΡΜΟΝΙΚΗ
ΑΡΜΟΝΙΚΟΝ ΕΓΧΕΙΡΙΔΙΟΝ
ΕΙΣΑΓΩΓΗ ΤΕΧΝΗΣ ΜΟΥΣΙΚΗΣ
ΠΕΡΙ ΜΟΥΣΙΚΗΣ

Greek Harmonics

Five Treatises on the Science of Music

with a word-for-word interlinear English translation
preserving the original word order

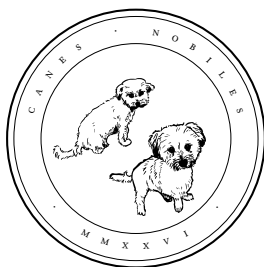


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Volume 5 of the Canes Nobiles Greek interlinear texts

The Greek text follows Macran's Oxford Aristoxenus of 1902,
Jan's *Musici scriptores Graeci* for Cleonides, Nicomachus,
and Bacchius, and Bernardakis' Teubner for the *De Musica*

Set from the First Thousand Years of Greek
and the Perseus Digital Library, with corrections

Translated and composed with AI, edited by Christopher Hench
Artwork by Esther Steves

Words the editors seclude are printed. Bacchius' tables of note-symbols are not.

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ARISTOXENUS

ΑΡΜΟΝΙΚΑ ΣΤΟΙΧΕΙΑ

Elements of Harmonics · Three Books



ΑΡΙΣΤΟΞΕΝΟΥ ΑΡΜΟΝΙΚΩΝ ΣΤΟΙΧΕΙΩΝ ΠΡΩΤΟΝ

I.1 • THE SCIENCE OF HARMONICS

Aristoxenus marks out harmonics as the first in order and the most elemental in power of the parts into which the science of melody divides. It treats systems and keys and nothing beyond them; the higher questions belong to the wider science that embraces this one and the rest. Earlier harmonists, he says, took up harmonia alone, and their diagrams set out enharmonic octachord systems and nothing else.

Τῆς περὶ μέλους ἐπιστήμης πολυμεροῦς οὔσης καὶ 1
of-the concerning melody science many-parted being and
διηρημένης εἰς πλείους ἰδέας μίαν τινὰ αὐτῶν ὑπολαβεῖν
divided into several forms one certain of-them to-conceive
δεῖ τὴν ἀρμονικὴν καλουμένην εἶναι πραγματείαν, τῇ
one-must the harmonic so-called to-be study in-its
τε τάξει πρώτην οὔσαν ἔχουσάν τε δύναμιν στοιχειώδη.
both order first being having and (a)-power elemental
τυγχάνει γὰρ οὔσα τῶν πρώτων θεωρητικῇ ταῦτα δ'
it-happens for being of-the first(-things) contemplative these and
ἐστὶν ὅσα συντείνει πρὸς τὴν τῶν συστημάτων
are whatever(-things) tend toward the of-the systems
τε καὶ τόνων θεωρίαν. προσήκει γὰρ μὴθὲν πορρωτέρω
both and keys study it-befits for nothing further
τούτων ἀξιοῦν παρὰ τοῦ τὴν εἰρημένην ἔχοντος
than-these to-demand from the(-one) the aforesaid having
ἐπιστήμην. τέλος γὰρ τοῦτό ἐστι τῆς πραγματείας ταύτης.
science (the)-end for this is of-the study this
τὰ δ' ἀνώτερον ὅσα θεωρεῖται χρωμένης
the(-things) but higher whatever are-studied (while-)using

2 ἤδη τῆς ποιητικῆς τοῖς τε συστήμασι καὶ τοῖς τόνοις
 now the poetic(-art) the both systems and the keys
 οὐκέτι ταύτης ἐστίν, ἀλλὰ τῆς ταύτην τε καὶ τὰς
 no-longer of-this(-science) it-is but of-that this both and the
 ἄλλας περιεχούσης ἐπιστήμης δι' ὧν πάντα θεωρεῖται
 others embracing science through which all(-things) are-studied
 τὰ κατὰ μουσικὴν. αὕτη δ' ἐστὶν ἡ τοῦ μουσικοῦ
 the(-things) concerning music this and is the of-the musician
 ἕξις. ***

trained-condition (lacuna)

Τοὺς μὲν οὖν ἔμπροσθεν ἡμμένους τῆς ἀρμονικῆς
 those indeed then before having-grasped of-the harmonic
 πραγματείας συμβέβηκεν ὡς ἀληθῶς ἀρμονικοὺς εἶναι
 study it-has-befallen as truly harmonists to-be
 βούλεσθαι μόνον, αὐτῆς γὰρ τῆς ἀρμονίας ἥπτοντο μόνον,
 to-wish only itself for the harmonia they-grasped only
 τῶν δ' ἄλλων γενῶν οὐδεμίαν πώποτ' ἔννοιαν εἶχον.
 of-the but other genera no ever notion they-had
 σημεῖον δέ· τὰ γὰρ διαγράμματα αὐτοῖς τῶν ἐναρμονίων
 (a)-sign and the for diagrams for-them of-the enharmonic
 ἔκκειται μόνον συστημάτων, διατόνων δ' ἢ χρωματικῶν
 are-set-forth only systems of-diatonic but or of-chromatic
 οὐδεὶς πώποθ' ἐώρακεν. Καί τοι τὰ διαγράμματά γ'
 no-one ever has-seen and yet the diagrams at-least
 αὐτῶν ἐδήλου τὴν πᾶσαν τῆς μελωδίας τάξιν, ἐν οἷς
 their made-clear the whole of-the melody order in which
 περὶ συστημάτων ὀκταχόρδων ἐναρμονίων μόνον ἔλεγον·
 about systems eight-stringed enharmonic only they-spoke
 περὶ δὲ τῶν ἄλλων μεγεθῶν τε καὶ σχημάτων τῶν ἐν
 about but the other magnitudes both and figures those in
 αὐτῷ τε τῷ γένει τούτῳ καὶ τοῖς λοιποῖς οὐδ' ἐπεχείρει
 itself both the genus this and the remaining not-even attempted

οὐδείς καταμανθάνειν, ἀλλ' ἀποτεμνόμενοι τῆς ὅλης
anyone to-learn but cutting-off from-the whole
 μελωδίας τοῦ τρίτου μέρους ἓν τι γένος μέγεθος
melody of-the third part one certain genus (in)-magnitude
 δέ, τὸ διὰ πασῶν, περὶ τούτου πᾶσαν πεποιήνται
and the through all about this (their)-whole they-have-made
 πραγματείαν. ὅτι δ' οὐδένα πεπραγμάτευνται τρόπον οὐδὲ
study that but in-no they-have-treated way even
 περὶ αὐτῶν τούτων ὧν ἡμμένοι τυγχάνουσι σχεδὸν
about themselves these which having-grasped they-happen nearly
 μὲν ἡμῖν γεγένηται φανερόν ἐν τοῖς ἔμπροσθεν ὅτε
indeed to-us it-has-become clear in the(-things) before when
 ἐπεσκοποῦμεν τὰς τῶν ἀρμονικῶν δόξας, οὐ μὴν ἀλλ' ἔτι
we-were-examining the of-the harmonists opinions not however but still
 μᾶλλον νῦν ἔσται εὐσύννοπτον διεξιόντων ἡμῶν τὰ
more now it-will-be easily-surveyed (as-we-are)-going-through we the
 μέρη τῆς πραγματείας ὅσα ἐστὶ καὶ ἥντινα ἕκαστον
parts of-the study how-many they-are and what each
 αὐτῶν δύναμιν ἔχει τῶν μὲν γὰρ ὅλως
of-them power has of-some indeed for wholly
 οὐδ' ἡμμένους εὐρήσομεν αὐτοὺς τῶν δ' οὐχ ἱκανῶς. 3
not-even having-touched we-shall-find them of-others and not sufficiently
 ὥσθ' ἅμα τοῦτό τε φανερόν ἔσται καὶ τὸν τύπον
so-that at-once this both clear will-be and the outline
 κατοψόμεθα τῆς πραγματείας τίς ποτ' ἐστίν.
we-shall-behold of-the study what ever it-is

Aristoxenus lays out, in order, everything harmonics must treat: the motion of the voice, tension and pitch, notes, intervals, and systems, then melody and its genera, the mixture of the genera, the notes again, the keys, and modulation. At every step he turns on his predecessors. Some of these matters they never conceived at all, and the rest they left confused.

Πρῶτον μὲν οὖν ἀπάντων τὴν τῆς φωνῆς κίνησιν
 first indeed then of-all the of-the voice motion
 διοριστέον τῷ μέλλοντι πραγματεύεσθαι περὶ
 must-be-distinguished by-the(-one) intending to-treat concerning
 μέλους αὐτὴν τὴν κατὰ τόπον. οὐ γὰρ εἰς τρόπον
 melody (that)-very the(-one) according-to place not for one manner
 αὐτῆς ὧν τυγχάνει κινεῖται μὲν γὰρ καὶ διαλεγομένων
 of-it being happens it-moves indeed for both (as-we-are)-conversing
 ἡμῶν καὶ μελωδούντων τὴν εἰρημένην κίνησιν, ὅξυ γὰρ
 we and (when-)singing the aforesaid motion sharp for
 καὶ βαρὺ δῆλον ὡς ἐν ἀμφοτέροις τούτοις ἔνεστιν—
 and heavy (is)-clear that in both these is-present
 αὕτη δ' ἐστὶν ἡ κατὰ τόπον καθ' ἣν ὅξυ τε
 this and is the(-motion) according-to place in which sharp both
 καὶ βαρὺ γίγνεται— ἀλλ' οὐ ταὐτὸν εἶδος τῆς κινήσεως
 and heavy comes-to-be but not the-same form of-the motion
 ἑκατέρας ἐστίν. ἐπιμελὲς δ' οὐδενὶ πώποτε γεγενῆται περὶ
 of-each is (a)-care but to-no-one ever it-has-become about
 τούτου διορίσαι τίς ἑκατέρας αὐτῶν ἡ διαφορά· καὶ τοι
 this to-distinguish what of-each of-them the difference(-is) and yet
 τούτου μὴ διορισθέντος οὐ πάνυ ῥάδιον εἰπεῖν περὶ
 this not having-been-distinguished not very easy(-is-it) to-say about
 φθόγγου τί ποτ' ἐστίν. ἀναγκαῖον δὲ τὸν βουλόμενον
 (a)-note what ever it-is necessary and for-the(-one) wishing

μὴ πάσχειν ὅπερ Λάσος τε καὶ τῶν Ἐπιγονείων τινὲς
not to-suffer the-very-thing Lasus both and of-the Epigoneans some
 ἔπαθον, πλάτος αὐτὸν οἰηθέντες ἔχειν, εἰπεῖν περὶ αὐτοῦ
suffered breadth it having-supposed to-have to-speak about it
 μικρὸν ἀκριβέστερον. τούτου γὰρ διορισθέντος περὶ
(a)-little more-exactly this for having-been-distinguished about
 πολλὰ τῶν ἔπειτα μᾶλλον ἔσται σαφῶς λέγειν.
many of-the(-things) thereafter more it-will-be(-possible) clearly to-speak
 Ἀναγκαῖον δ' εἰς τὴν τούτων ξύνεσιν πρὸς τοῖς
necessary and for the of-these understanding besides the(-things)
 εἰρημένοις περὶ τ' ἀνέσεως καὶ ἐπιτάσεως καὶ βαρύτητος
said concerning both slackening and tightening and heaviness
 καὶ ὀξύτητος καὶ τάσεως εἰπεῖν τί ποτ' ἀλλήλων
and sharpness and tension to-say in-what ever from-one-another
 διαφέρουσιν. οὐδεὶς γὰρ οὐδὲν περὶ τούτων εἴρηκεν, ἀλλὰ
they-differ no-one for anything about these has-said but
 τὰ μὲν αὐτῶν ὅλως οὐδὲ νενόηται τὰ δὲ
the(-things) some of-them wholly not-even have-been-conceived the(-things) others
 συγκεχυμένως. Μετὰ ταῦτα δὲ περὶ τῆς τοῦ βαρέος
confusedly after these(-things) and about the of-the heavy
 τε καὶ ὀξέος διαστάσεως λεκτέον πότερον εἰς ἄπειρον
both and sharp distance one-must-speak whether to infinity
 αὐξήσιν τε καὶ ἐλάττωσιν ἔχει ἢ οὐ ἢ πῇ μὲν
increase both and decrease it-has or not or in-one-way indeed
 πῇ δ' οὐ. Τούτων δὲ διωρισμένων περὶ διαστήματος
in-another and not these and being-distinguished about interval
 καθόλου λεκτέον ἔπειτα διαιρετέον ὅσαχῶς δύναται
in-general one-must-speak then one-must-divide in-how-many-ways it-can
 διαιρεῖσθαι, εἴτα περὶ συστήματος καθόλου δὲ διελθόντα
be-divided then about system in-general and having-gone-through
 λεκτέον εἰς ὅσας πέφυκε τέμνεσθαι διαίρεσις. Εἴτα
one-must-speak into how-many it-is-fitted to-be-cut divisions then

περὶ μέλους ὑποδηλωτέον καὶ τυπωτέον οἷαν ἔχει
about melody one-must-indicate and one-must-sketch-in-outline what-sort-of it-has
 φύσιν τὸ κατὰ μουσικὴν, ἐπειδὴ πλείους εἰσὶ φύσεις
nature that according-to music since several there-are natures
 μέλους, μία δ' ἐστὶ τις ἐκ πασῶν αὐτοῦ ἢ τοῦ
of-melody one and is a-certain out-of all of-it that of-the
 ἡρμωσμένου καὶ μελωδουμένου. διὰ τὴν ἐπαγωγὴν δὲ
attuned and sung because-of the leading-on and
 τὴν ἐπὶ τοῦτο γιγνομένην κατὰ τὸν χωρισμὸν τὸν ἀπὸ
that(-one) to this arising by the separation that from
 τῶν ἄλλων ἀναγκαῖόν πως καὶ τῶν ἄλλων ἐπαφᾶσθαι
the others (it-is)-necessary somehow also the other to-touch-upon
 φύσεων. Ἀφορισθέντος δὲ τοῦ μουσικοῦ μέλους οὕτως ὡς
natures having-been-marked-off and the musical melody so as
 ἐνδέχεται μὴδέπω τῶν καθ' ἕκαστα τεθεωρημένων ἀλλ'
is-possible while-not-yet the(-things) by particulars having-been-studied but
 ὡς ἐν τύπῳ καὶ περιγραφῇ, διαιρετέον τὸ καθόλου καὶ
as in outline and sketch one-must-divide the universal and
 μεριστέον εἰς ὅσα φαίνεται γένη διαιρεῖσθαι. Μετὰ
one-must-partition into as-many-as it-appears genera to-be-divided after
 τοῦτο δὲ λεκτέον περὶ τε συνεχείας καὶ τοῦ ἐξῆς
this and one-must-speak concerning both continuity and the successive
 τί ποτ' ἐστὶν ἐν τοῖς συστήμασι καὶ πῶς ἐγγιγνόμενον.
what ever it-is in the systems and how arising-in(-them)
 Εἴτ' ἀποδοτέον τὰς τῶν γενῶν διαφορὰς αὐτῆς τὰς ἐν τοῖς
then one-must-render the of-the genera differences of-it those in the
 κινουμένοις τῶν φθόγων, ἀποδοτέον δὲ καὶ τοὺς τόπους ἐν
moving(-ones) of-the notes one-must-render and also the regions in
 οἷς κινούνται. τούτων δ' οὐδεὶς περὶ οὐδενὸς πώποτ' ἔσχηκεν
which they-move of-these but no-one about any ever has-had
 ἔννοιαν οὐδ' ἡγνυνόν, ἀλλὰ περὶ πάντων τῶν εἰρημένων
(a)-notion even any-whatsoever but about all the(-things) aforesaid

αὐτοῖς ἡμῖν ἀναγκαῖον ἐξ ἀρχῆς πραγματεύεσθαι,
by-them for-us (it-is)-necessary from (the)-beginning to-treat
 παρειλήφαμεν γὰρ οὐδὲν περὶ αὐτῶν ἀξιόλογον. Μετὰ δὲ
we-have-received for nothing about them noteworthy after and
 τοῦτο περὶ διαστημάτων ἀσυνθέτων πρῶτον λεκτέον, εἶτα 5
this about intervals incomposite first one-must-speak then
 περὶ συνθέτων. ἀναγκαῖον δὲ ἀπτομένοις ἡμῖν συνθέτων
about composite necessary and touching for-us composite
 διαστημάτων οἷς ἅμα καὶ συστήμασιν εἶναί πως
intervals for-which at-once also systems to-be somehow
 συμβαίνει περὶ συνθέσεως ἔχειν τι λέγειν τῆς
it-befalls about (the)-composition to-have something to-say (namely)-that-of
 τῶν ἀσυνθέτων διαστημάτων. περὶ ἧς οἱ πλείστοι τῶν
the incomposite intervals about which the most of-the
 ἀρμονικῶν οὐδ' ὅτι πραγματευτέον ᾗσθοντο· δηλον
harmonists not-even that it-must-be-treated perceived clear
 δ' ἡμῖν ἐν τοῖς ἔμπροσθεν γέγονεν. οἱ δὲ περὶ
and to-us in the(-things) before it-has-become those but around
 Ἑρατοκλέα τοσοῦτον εἰρήκασιν μόνον ὅτι ἀπὸ τοῦ διὰ
Eratocles so-much have-said only that from the through
 τεττάρων ἐφ' ἐκάτερα δίχα σχίζεται τὸ μέλος, οὐδὲν οὔτ'
four in both-directions in-two splits the melody nothing either
 εἰ ἀπὸ παντὸς τοῦτο γίνεταί διωρίσαντες οὔτε διὰ
whether from every(-interval) this happens having-distinguished or for
 τίνα αἰτίαν εἰπόντες οὔθ' ὑπὲρ τῶν ἄλλων διαστημάτων
what cause having-said or concerning the other intervals
 ἐπισκεψάμενοι τίνα πρὸς ἄλληλα συντίθενται τρόπον,
having-examined what with one-another they-are-compounded manner
 καὶ πότερον παντὸς διαστήματος πρὸς πᾶν ὠρισμένος
and whether of-every interval with every (a)-determinate
 τίς ἐστι λόγος τῆς συνθέσεως καὶ πῶς μὲν ἐξ
certain there-is account of-the composition and how in-one-way from

αὐτῶν πῶς δ' οὐ γίνεται συστήματα ἢ εἰ τοῦτο
them how in-another not arise systems or whether this
 ἀόριστόν ἐστιν· περὶ γὰρ τούτων οὔτ' ἀποδεικτικὸς
indeterminate is about for these neither demonstrative
 οὔτ' ἀναπόδεικτος ὑπ' οὐδενὸς πώποτ' εἴρηται λόγος.
nor undemonstrated by anyone ever has-been-spoken account
 οὔσης δὲ θαυμαστῆς τῆς τάξεως περὶ τὴν τοῦ μέλους
being and wonderful the order concerning the of-the melody
 σύστασιν ἀταξία πλείστη μουσικῆς ὑπ' ἐνίων κατέγνωσται
constitution disorder utmost of-music by some has-been-charged
 διὰ τοὺς μετακεχειρισμένους τὴν εἰρημένην πραγματείαν.
because-of those having-handled the aforesaid study
 οὐδὲν δὲ τῶν αἰσθητῶν τοσαύτην ἔχει τάξιν οὐδὲ
nothing but of-the perceptible(-things) so-great has order or
 τοιαύτην. ἔσται δ' ἡμῖν δῆλον τοῦθ' οὕτως ἔχον, ὅταν
such it-will-be and to-us clear this so holding when
 ἐν αὐτῇ γενώμεθα τῇ πραγματείᾳ. νῦν δὲ τὰ λοιπὰ τῶν
in itself we-come-to-be the study now and the remaining of-the
 μερῶν λεκτέον. Ἀποδειχθέντων γὰρ τῶν ἀσυνθέτων
parts one-must-speak having-been-demonstrated for the incomposite
 διαστημάτων ὃν τρόπον πρὸς ἀλλήλα συντίθεται
intervals (in)-what manner with one-another they-are-compounded
 6 περὶ τῶν συστάντων ἐξ αὐτῶν συστημάτων λεκτέον
about the composed from them systems one-must-speak
 περὶ τε τῶν ἄλλων καὶ τοῦ τελείου, ἐξ ἐκείνων
concerning both the others and the complete(-system) from those
 ἀποδεικνύντας πόσα ἐστὶ καὶ ποῖ ἅττα, τὰς
demonstrating how-many they-are and of-what-sort certain the
 τε κατὰ μέγεθος αὐτῶν ἀποδιδόντας διαφορὰς καὶ
both according-to magnitude their rendering differences and
 τῶν μεγεθῶν ἐκάστου τὰς τε κατὰ σύνθεσιν καὶ
of-the magnitudes of-each those both according-to composition and

τὰς κατὰ τὸ σχῆμα διαφορὰς ὅπως μὴδὲν τῶν
those according-to the figure differences so-that none of-the(-things)
 μελωδουμένων μήτε μέγεθος μήτε σχῆμα μήτε σύνθεσις
sung either magnitude or figure or composition
 μήτε θέσις ἀναπόδεικτος ἦ. τούτου δὲ τοῦ μέρους τῆς
or position undemonstrated may-be this but the part of-the
 πραγματείας ἄλλος μὲν οὐδείς πώποθ' ἤψατο· Ἐρατοκλῆς
study other indeed no-one ever has-touched Eratocles
 δ' ἐπεχείρησεν ἀναποδείκτως ἐξαριθμεῖν ἐπὶ τι μέρος· ὅτι
but attempted without-demonstration to-enumerate for some part that
 δ' οὐδὲν εἶρηκεν ἀλλὰ πάντα ψευδῇ καὶ τῶν φαινομένων
but nothing he-has-said but all(-things) false and of-the appearances
 τῇ αἰσθήσει διημάρτηκε, τεθεώρηται μὲν ἔμπροσθεν
to-the perception he-has-failed it-has-been-examined indeed before
 ὅτ' αὐτὴν καθ' αὐτὴν ἐξητάζομεν τὴν πραγματείαν ταύτην.
when it by itself we-were-testing the study this
 τῶν δ' ἄλλων καθόλου μὲν καθάπερ ἔμπροσθεν εἶπομεν
of-the but others in-general indeed just-as before we-said
 οὐδείς ἦπται, ἐνὸς δὲ συστήματος Ἐρατοκλῆς ἐπεχείρησε
no-one has-touched of-one but system Eratocles attempted
 καθ' ἓν γένος ἐξαριθμῆσαι τὰ σχήματα τοῦ διὰ πασῶν
in one genus to-enumerate the figures of-the through all
 ἀναποδείκτως τῇ περιφορῇ τῶν διαστημάτων δεικνύς, οὐ
without-demonstration by-the cycling-round of-the intervals showing not
 καταμαθὼν ὅτι μὴ προαποδειχθέντων τῶν τε τοῦ διὰ
having-learned that unless having-been-first-demonstrated the both of-the through
 πέντε σχημάτων καὶ τῶν τοῦ διὰ τεσσάρων πρὸς
five figures and those of-the through four in-addition
 δὲ τούτοις καὶ τῆς συνθέσεως αὐτῶν τίς ποτ' ἐστὶ
and to-these also the composition of-them what ever it-is
 καθ' ἣν ἑμμελῶς συντίθενται πολλαπλάσια τῶν
according-to which melodically they-are-compounded many-times-more than-the

- ἑπτὰ συμβαίνειν γίνεσθαι δείκνυνται ἐτιθέμεθα δ' ἐν
seven to-result coming-to-be it-is-shown we-were-laying-down and in
 τοῖς ἔμπροσθεν ὅτι οὕτως ἔχει, διόπερ ταῦτα μὲν
the(-things) before that so it-holds wherefore these(-things) indeed
 7 ἀφείσθω, τὰ δὲ λοιπὰ λεγέσθω τῶν τῆς πραγματείας
let-be-dismissed the and remaining let-be-told of-the of-the study
 μερῶν. Ἐξηριθμημένων γὰρ τῶν συστημάτων τῶν καθ'
parts having-been-enumerated for the systems those in
 ἕκαστον τῶν γενῶν κατὰ πᾶσαν διαφορὰν τὴν εἰρημένην
each of-the genera according-to every difference the aforesaid
 μγνυμένων πάλιν τῶν γενῶν ταὐτὸ τοῦτο ποιητέον· περὶ οὗ
being-mixed again the genera the-same this must-be-done about which
 οἱ πλείστοι τῶν ἀρμονικῶν οὐκ ᾔσθοντο ὅτι πραγματευτέον·
the most of-the harmonists not perceived that it-must-be-treated
 οὐδὲ γὰρ αὐτὴν τὴν μίξιν τί ποτ' ἐστὶ καταμεμαθήκεσαν.
not-even for itself the mixture what ever it-is they-had-learned
 Τούτων δ' ἐχόμενόν ἐστι περὶ φθόγγων εἰπεῖν, ἐπειδήπερ
on-these and next it-is about notes to-speak since-indeed
 οὐκ αὐτάρκη τὰ διαστήματα πρὸς τὴν τῶν φθόγγων
not self-sufficient the intervals for the of-the notes
 διάγνωσιν. Ἐπεὶ δὲ τῶν συστημάτων ἕκαστον ἐν τόπῳ
discernment since and of-the systems each in (a)-region
 τινὶ τῆς φωνῆς τεθὲν μελωδεῖται καὶ, καθ' αὐτὸ διαφορὰν
certain of-the voice placed is-sung and by itself difference
 οὐδεμίαν λαμβάνοντος αὐτοῦ, τὸ γινόμενον ἐν αὐτῷ
no taking it the arising in it
 μέλος οὐ τὴν τυχοῦσαν λαμβάνει διαφορὰν ἀλλὰ σχεδὸν
melody not the chance takes difference but nearly
 τὴν μεγίστην, ἀναγκαῖον ἂν εἴη τῷ τὴν εἰρημένην
the greatest necessary would it-be for-the(-one) the aforesaid
 μεταχειριζομένῳ πραγματείαν περὶ τοῦ τῆς φωνῆς τόπου
handling study about the of-the voice region

καθόλου καὶ κατὰ μέρος εἰπεῖν ὅσον ἐστὶ δίκαιον· ἔστι δ'
in-general and in part to-speak so-far-as is right it-is and
 ἐπὶ τοσοῦτον ἐφ' ὅσον ἢ τῶν συστημάτων αὐτῶν σημαίνει
to so-much to as-much-as the of-the systems themselves indicates
 φύσις. περὶ δὲ συστημάτων καὶ τόπων οἰκειότητος καὶ τῶν
nature about and systems and regions affinity and the
 τόνων λεκτέον οὐ πρὸς τὴν καταπύκνωσιν βλέποντας
keys one-must-speak not toward the close-packing looking
 καθάπερ οἱ ἀρμονικοὶ ἀλλὰ τὴν πρὸς ἄλληλα μελωδίαν τῶν
as the harmonists but the toward one-another melody of-the
 συστημάτων οἷς ἐπὶ τίνων τόνων κειμένοις μελωδεῖσθαι
systems for-which upon what keys lying to-be-sung
 συμβαίνει πρὸς ἄλληλα. περὶ τούτου δὲ τοῦ μέρους ὅτι
it-befalls with one-another about this and the part that
 ἐπὶ βραχὺ τῶν ἀρμονικῶν ἐνίοις συμβέβηκεν εἰρηκέναι
to (a)-little of-the harmonists for-some it-has-befallen to-have-spoken
 κατὰ τύχην, οὐ περὶ τούτου λέγουσιν ἀλλὰ καταπυκνῶσαι
by chance not about this speaking but to-close-pack
 βουλομένοις τὸ διάγραμμα, καθόλου δὲ οὐδενὶ σχεδὸν ἐν
(for-those)-wishing the diagram in-general and to-no-one almost in
 τοῖς ἔμπροσθεν φανερόν γεγένηται τοῦθ' ἡμῖν· ἔστι δ'
the(-pages) before clear has-it-become this to-us it-is and
 ὥς εἰπεῖν καθόλου τὸ μέρος τοῦτο τῆς περὶ μεταβολῆς
so-as to-speak in-general the part this of-the concerning modulation
 πραγματείας τὸ συντείνειν εἰς τὴν περὶ μέλους
study the(-part) tending to the concerning melody
 θεωρίαν.

study

Τὰ μὲν οὖν τῆς ἀρμονικῆς καλουμένης ἐπιστήμης μέρη
the indeed then of-the harmonic so-called science parts
 ταῦτά τε καὶ τοσαῦτά ἐστι, τὰς δ' ἀνωτέρω τούτων
these both and so-many are the but higher than-these

πραγματείας ἥπερ εἶπομεν ἀρχόμενοι τελειότερου τινὸς
 studies just-as we-said beginning of-a-more-complete certain
 ὑποληπτέον εἶναι· περὶ μὲν οὖν ἐκείνων ἐν τοῖς καθήκουσι
 one-must-suppose to-be about indeed then those at the fitting
 καιροῖς λεκτέον τίνες τ' εἰσὶ καὶ πόσαι καὶ ποία τις
 times one-must-speak what both they-are and how-many and of-what-sort a
 ἐκάστη αὐτῶν. περὶ δὲ τῆς πρώτης νῦν πειρατέον διελθεῖν.
 each of-them about but the first now one-must-try to-go-through

1.3 · THE TWO MOTIONS OF THE VOICE

Every voice moves in one of two ways. In continuous motion it glides through a range without ever seeming to rest, as in speech. In intervallic motion it stands on one tension, then steps across to another, as in song. Whether the voice really moves or rests belongs to another inquiry; for this study the appearance to the ear is enough.

Πρῶτον μὲν οὖν ἀπάντων αὐτῆς τῆς κατὰ τόπον
 first indeed then of-all of-it the according-to place
 κινήσεως τὰς διαφορὰς θεωρῆσαι τίνες εἰσὶ πειρατέον.
 motion the differences to-examine what they-are one-must-try
 πάσης δὲ φωνῆς δυναμένης κινεῖσθαι τὸν εἰρημένον αὐτὸν
 (as-)every and voice being-able to-move in-the aforesaid very
 τρόπον δύο τινές εἰσιν ἰδέαι κινήσεως, ἥ τε συνεχῆς
 manner two certain there-are forms of-motion the both continuous
 καὶ ἡ διαστηματική. κατὰ μὲν οὖν τὴν συνεχῆ
 and the intervallic in indeed then the continuous(-motion)
 τόπον τινὰ διεξιέναι φαίνεται ἡ φωνὴ τῇ αἰσθήσει
 (a)-region certain to-traverse appears the voice to-the perception
 οὕτως ὥς ἂν μηδαμοῦ ἵσταμένη μηδ' ἐπ' αὐτῶν τῶν
 so as if nowhere standing not-even upon themselves the
 περάτων κατὰ γε τὴν τῆς αἰσθήσεως φαντασίαν, ἀλλὰ
 limits according at-least to-the of-the perception impression but

φερομένη συνεχῶς μέχρι σιωπῆς, κατὰ δὲ τὴν ἑτέραν ἣν
being-borne continuously as-far-as silence in but the other which
 ὀνομάζομεν διαστηματικὴν ἐναντίως φαίνεται κινεῖσθαι·
we-name intervallic contrariwise it-appears to-move
 διαβαίνουσα γὰρ ἴσθησι αὐτὴν ἐπὶ μιᾷ τάσεως εἶτα
stepping-across for it-sets itself upon one tension then
 πάλιν ἐφ' ἑτέρας καὶ τοῦτο ποιούσα συνεχῶς— λέγω
again upon another and this doing continuously I-mean
 δὲ συνεχῶς κατὰ τὸν χρόνον— ὑπερβαίνουσα μὲν
and continuously with-respect-to the time overleaping indeed
 τοὺς περιεχομένους ὑπὸ τῶν τάσεων τόπους, ἵσταμένη
the enclosed by the tensions regions standing
 δ' ἐπ' αὐτῶν τῶν τάσεων καὶ φθεγγομένη ταύτας
but upon themselves the tensions and sounding these(-tensions)
 μόνον αὐτὰς μελωδεῖν λέγεται καὶ κινεῖσθαι διαστηματικὴν 9
only them to-sing it-is-said and to-move (an)-intervallic
 κίνησιν. Δηπτέον δὲ ἑκάτερον τούτων κατὰ τὴν
motion must-be-grasped and each of-these according-to the
 τῆς αἰσθήσεως φαντασίαν· πότερον μὲν γὰρ δυνατόν ἢ
of-the perception impression whether indeed for possible or
 ἀδύνατον φωνὴν κινεῖσθαι καὶ πάλιν ἵστασθαι αὐτὴν ἐπὶ
impossible (for-)voice to-move and again to-stand it upon
 μιᾷ τάσεως ἑτέρας ἐστὶ σκέψεως καὶ πρὸς τὴν ἐνεστῶσαν
one tension of-another is inquiry and for the present
 πραγματείαν οὐκ ἀναγκαῖον τὸ δὲ κινῆσαι τούτων ἑκάτερον·
study not necessary the but to-raise of-these each
 ὁποτέρως γὰρ ἔχει, τὸ αὐτὸ ποιεῖ πρὸς γε τὸ χωρίσαι
in-whichever-way for it-holds the same it-does for at-least the separating
 τὴν ἐμμελὴ κίνησιν τῆς φωνῆς ἀπὸ τῶν ἄλλων κινήσεων.
the melodic motion of-the voice from the other motions
 Ἀπλῶς γὰρ ὅταν μὲν οὕτω κινῆται ἡ φωνὴ ὥστε
simply for when indeed so moves the voice that

μηδαμοῦ δοκεῖν ἵστασθαι τῇ ἀκοῇ, συνεχῇ λέγομεν ταύτην
nowhere to-seem to-stand to-the hearing continuous we-call this
 τὴν κίνησιν· ὅταν δὲ στήναί που δόξασα εἶτα πάλιν
the motion when but to-have-stood somewhere having-seemed then again
 διαβαίνειν τινὰ τόπον φανῇ καὶ τοῦτο ποιήσασα πάλιν
to-step-across some region it-appears and this having-done again
 ἐφ' ἐτέρας τάσεως στήναι δόξῃ καὶ τοῦτο ἐναλλάξ ποιεῖν
upon another tension to-stand it-seems and this alternately to-do
 φαινομένη συνεχῶς διατελῇ, διαστηματικὴν τὴν τοιαύτην
appearing continuously it-goes-on intervallic the such
 κίνησιν λέγομεν. Τὴν μὲν οὖν συνεχῇ λογικὴν εἶναί φαμεν,
motion we-call the indeed then continuous discursive to-be we-say
 διαλεγομένων γὰρ ἡμῶν οὕτως ἢ φωνὴ κινεῖται κατὰ
(as-we-are)-conversing for we so the voice moves according-to
 τόπον ὥστε μηδαμοῦ δοκεῖν ἵστασθαι. Κατὰ δὲ τὴν ἐτέραν
place that nowhere to-seem to-stand in but the other
 ἣν ὀνομάζομεν διαστηματικὴν ἐναντίως πέφυκε γίνεσθαι·
which we-name intervallic contrariwise it-is-fitted to-happen
 ἀλλὰ γὰρ ἵστασθαί τε δοκεῖ καὶ πάντες τὸν τοῦτο
but in-fact to-stand both it-seems and all the(-man) this
 φαινόμενον ποιεῖν οὐκέτι λέγειν φασὶν ἀλλ' ᾄδειν. Διόπερ
appearing to-do no-longer to-speak they-say but to-sing wherefore
 ἐν τῷ διαλέγεσθαι φεύγομεν τὸ ἰστάναι τὴν φωνήν, ἂν
in the conversing we-avoid the setting-still-of the voice if
 μὴ διὰ πάθος ποτὲ εἰς τοιαύτην κίνησιν ἀναγκασθῶμεν
not because-of feeling ever into such motion we-be-forced
 ἐλθεῖν, ἐν δὲ τῷ μελωδεῖν
to-come in but the singing

- 10 τοῦναντίον ποιούμεν, τὸ μὲν γὰρ συνεχὲς φεύγομεν, τὸ δ'
the-contrary we-do the indeed for continuous we-avoid the but
 ἐστάναι τὴν φωνήν ὡς μάλιστα διώκομεν. ὅσω γὰρ
to-stand-still the voice as much-as-possible we-pursue by-how-much for

μᾶλλον ἐκάστην τῶν φωνῶν μίαν τε καὶ ἐστηκυῖαν καὶ τὴν
 more each of-the voices one both and standing and the
 αὐτὴν ποιήσομεν, τοσούτῳ φαίνεται τῇ αἰσθήσει τὸ μέλος
 same we-shall-make by-so-much appears to-the perception the melody
 ἀκριβέστερον. Ὅτι μὲν οὖν δύο κινήσεων οὐσῶν κατὰ
 more-exact that indeed then two motions being according-to
 τόπον τῆς φωνῆς ἢ μὲν συνεχῆς λογικὴ τίς ἐστιν ἢ δὲ
 place of-the voice the one continuous discursive a-certain is the other
 διαστηματικὴ μελωδική, σχεδὸν δῆλον ἐκ τῶν εἰρημένων.
 intervalllic melodic nearly (is)-clear from the(-things) said

I.4 · TENSION, PITCH, AND THEIR KIN

Five things must be kept apart: tightening and slackening, which are motions; sharpness and heaviness, which are the states the motions produce; and tension, the standing of the voice on one pitch. Most people run these together. The tuning of a string shows the difference — while it is being tightened its sharpness does not yet exist.

φανερῶ δ' ὄντος ὅτι δεῖ τὴν φωνὴν ἐν τῷ μελωδεῖν
 clear and (it-)being that must the voice in the singing
 τὰς μὲν ἐπιτάσεις τε καὶ ἀνέσεις ἀφανεῖς ποιεῖσθαι
 the indeed tightenings both and slackenings unapparent to-make
 τὰς δὲ τάσεις αὐτὰς φθεγγομένην φανερὰς καθιστάναι,—
 the but tensions themselves (in-)sounding apparent to-establish
 ἐπεὶ δὲ τὸν μὲν τοῦ διαστήματος τόπον ὃν διεξέρχεται
 since the indeed of-the interval region which it-traverses
 ὅτε μὲν ἀνιεμένη, ὅτε δ' ἐπιτεινομένη λανθάνειν
 at-one-time indeed being-slackened at-another and being-tightened to-escape-notice
 αὐτὴν δεῖ διεξιούσαν, τοὺς δὲ ὀρίζοντας φθόγους τὰ
 it must (in-)traversing the but bounding notes the

διαστήματα ἑναργεῖς τε καὶ ἐστηκότας ἀποδιδόναι— ὥστ'
intervals distinct both and standing to-render so-that

ἐπεὶ τοῦτ' ἔστι δηλὸν λεκτέον ἂν εἴη περὶ ἐπιτάσεως

since this is clear to-be-spoken would it-be about tightening

καὶ ἀνέσεως ἔτι δ' ὀξύτητος καὶ βαρύτητος πρὸς

and slackening further and sharpness and heaviness in-addition

δὲ τούτοις τάσεως. Ἡ μὲν οὖν ἐπίτασίς ἐστι κίνησις

and to-these tension the indeed then tightening is (a)-motion

τῆς φωνῆς συνεχῆς ἐκ βαρυτέρου τόπου εἰς ὀξύτερον,

of-the voice continuous from (a)-heavier region to (a)-sharper

ἢ δ' ἄνεσις ἐξ ὀξυτέρου τόπου εἰς βαρύτερον· ὀξύτης

the and slackening from (a)-sharper region to (a)-heavier sharpness

δὲ τὸ γενόμενον διὰ τῆς ἐπιτάσεως, βαρύτης

and (is)-the(-thing) come-about through the tightening heaviness

δὲ τὸ γενόμενον διὰ τῆς ἀνέσεως. Τάχα οὖν

and (is)-the(-thing) come-about through the slackening perhaps then

παράδοξον ἂν φαίνοιτο τοῖς ἐλαφρότερον τὰ τοιαῦτα

paradoxical would it-appear to-those too-lightly the such(-matters)

ἐπισκοποῦμενοις τὸ τιθέναι τέτταρα ταῦτα καὶ μὴ δύο·

examining the positing four these and not two

σχεδὸν γὰρ οἷ γε πολλοὶ ἐπίτασιν μὲν ὀξύτητι ταῦτ' οὖν

nearly for the at-least many tightening indeed with-sharpness the-same

λέγουσιν ἄνεσιν δὲ βαρύτητι. ἴσως οὖν οὐ

call slackening and with-heaviness perhaps then not

11 χεῖρον καταμαθεῖν ὅτι συγκεχυμένως πως δοξάζουσι περὶ

worse(-it-is) to-learn that confusedly somehow they-opine about

αὐτῶν. Δεῖ δὲ πειρᾶσθαι κατανοεῖν εἰς αὐτὸ ἀποβλέποντας

them must and to-try to-observe at itself looking

τὸ γινόμενον τί ποτ' ἐστὶν ὃ ποιούμεν ὅταν ἀρμοττόμενοι

the happening what ever it-is that we-do when tuning

τῶν χορδῶν ἐκάστην ἀνῶμεν ἢ ἐπιτείνωμεν. Δηλὸν δὲ

of-the strings each we-slacken or we-tighten clear and

τοῖς γε μὴ παντελῶς ἀπείροις ὀργάνων, ὅτι ἐπιτείνουντες
to-those at-least not utterly unversed in-instruments that tightening
 μὲν εἰς ὀξύτητα τὴν χορδὴν ἄγομεν ἀνιέντες δ' εἰς
indeed into sharpness the string we-lead slackening and into
 βαρύτητα· καθ' ὃν δὲ χρόνον ἄγομέν τε καὶ μετακινούμεν
heaviness in which and time we-lead both and shift
 εἰς ὀξύτητα τὴν χορδὴν, οὐκ ἐνδέχεται πού ἤδη εἶναι τὴν
into sharpness the string not it-is-possible surely already to-be the
 γε μέλλουσιν ἔσεσθαι ὀξύτητα διὰ τῆς ἐπιτάσεως τότε
at-least about-to be sharpness through the tightening then
 γὰρ ἔσται ὀξύτης ὅταν τῆς ἐπιτάσεως ἀγαγούσης εἰς τὴν
for will-be sharpness when the tightening having-led into the
 προσήκουσαν τάσιν στή ἢ χορδὴ καὶ μηκέτι κινήται.
befitting tension stands-still the string and no-longer moves
 τοῦτο δ' ἔσται τῆς ἐπιτάσεως ἀπηλλαγμένης καὶ μηκέτι
this and will-be the tightening being-done-with and no-longer
 οὔσης, οὐ γὰρ ἐνδέχεται κινεῖσθαι ἅμα τὴν χορδὴν καὶ
being not for it-is-possible to-move at-once the string and
 ἐστάναι, ἣν δ' ἢ μὲν ἐπίτασις κινουμένης τῆς χορδῆς,
to-stand was and the indeed tightening (while-)moving the string
 ἢ δ' ὀξύτης ἡρεμούσης ἤδη καὶ ἐστηκυίας. Ταῦτα δὲ
the and sharpness (while-)resting already and standing the-same and
 ἐροῦμεν καὶ περὶ τῆς ἀνέσεως τε καὶ βαρύτητος πλὴν ἐπὶ
we-shall-say also about the slackening both and heaviness except toward
 τὸν ἐναντίον τόπον. Δῆλον δὲ διὰ τῶν εἰρημένων, ὅτι
the contrary region clear and through the(-things) said that
 ἢ τ' ἄνεσις τῆς βαρύτητος ἕτερόν τι ἔστω, ὥς τὸ
the both slackening from-the heaviness (a)-different something is as the
 ποιοῦν τοῦ ποιουμένου, ἢ τ' ἐπίτασις τῆς ὀξύτητος
making from-the made the and tightening from-the sharpness
 τὸν αὐτὸν τρόπον. Ὅτι μὲν οὖν ἕτερα ἀλλήλων ἔστιν
the same way that indeed then different from-one-another are

ἐπίτασις μὲν ὀξύτητος ἀνεσις δὲ βαρύτητος σχεδὸν δῆλον
 tightening indeed from-sharpness slackening and from-heaviness nearly (is)-clear
 ἐκ τῶν εἰρημένων, ὅτι δὲ καὶ τὸ τρίτον ὃ δὴ
 from the(-things) said that and also the third which indeed
 τάσιν ὀνομάζομεν ἕτερόν ἐστιν ἐκάστου τῶν εἰρημένων,
 tension we-name different is from-each of-the said(-things)

- 12 πειρατέον κατανοῆσαι. Ὅ μὲν οὖν βουλόμεθα λέγειν
 one-must-try to-observe what indeed then we-wish to-mean(-by)
 τὴν τάσιν σχεδὸν ἐστὶ τοιοῦτον οἶον μονή τις καὶ
 the tension nearly is such-as-this as-it-were (a)-staying certain and
 στάσις τῆς φωνῆς. Μὴ ταραττέωσαν δ' ἡμᾶς αἱ τῶν
 (a)-standing of-the voice let-not disturb and us the of-those
 εἰς κινήσεις ἀγόντων τοὺς φθόγγους δόξα καὶ καθόλου
 into motions leading the notes opinions and in-general
 τὴν φωνὴν κίνησιν εἶναι φασκόντων, ὥς συμπεσυσμένον
 the voice motion to-be asserting as about-to-befall
 λέγειν ἡμῖν ὅτι συμβήσεται ποτε τῇ κινήσει μὴ κινεῖσθαι
 to-say for-us that it-will-happen sometime for-the motion not to-move
 ἀλλ' ἡρεμεῖν τε καὶ ἐστάναι. Διαφέρει γὰρ οὐδὲν ἡμῖν
 but to-rest both and to-stand differs for in-nothing for-us
 τὸ λέγειν ὁμαλότητα κινήσεως ἢ ταυτότητα τὴν τάσιν ἢ
 the saying evenness of-motion or sameness the tension or
 εἰ ἄλλο τι τούτων εὐρίσκειτο γνωριμώτερον ὄνομα. οὐδὲν
 if other any of-these be-found better-known name nothing
 γὰρ ἥττον ἡμεῖς τότε φήσομεν ἐστάναι τὴν φωνήν, ὅταν
 for less we then shall-declare to-stand the voice when
 ἡμῖν ἢ αἴσθησις αὐτὴν ἀποφάνη μήτ' ἐπὶ τὸ ὀξύ μήτ' ἐπὶ
 for-us the perception it shows-forth neither upon the sharp nor upon
 τὸ βαρὺ ὀρμῶσαν, οὐδὲν ἄλλο ποιούντες πλὴν τῷ τοιούτῳ
 the heavy setting-out nothing other doing except on-the such
 πάθει τῆς φωνῆς τοῦτο τὸ ὄνομα τιθέμενοι. Φαίνεται δὲ
 condition of-the voice this the name placing it-appears and

τοῦτο ποιεῖν ἐν τῷ μελωδεῖν ἢ φωνή· κινεῖται μὲν γὰρ ἐν
this to-do in the singing the voice it-moves indeed for in
 τῷ διάστημά τι ποιεῖν, ἵσταται δ' ἐν τῷ φθόγγῳ. Εἰ δὲ
the (an)-interval some making it-stands and in the note if and
 κινεῖται μὲν τὴν ὑφ' ἡμῶν λεγομένην κίνησιν, ἐκείνης τῆς
it-moves indeed the by us so-called motion that the
 κινήσεως τῆς ὑπ' ἐκείνων λεγομένης τὴν κατὰ τάχος
motion the by them so-called the according-to speed
 διαφορὰν λαμβανούσης, ἡρεμεῖ δὲ πάλιν αὖ τὴν ὑφ' ἡμῶν
difference (while)-taking it-rests and again in-turn the by us
 λεγομένην ἡρεμίαν, στάντος τοῦ τάχους καὶ λαβόντος
so-called rest (when)-having-stood the speed and having-taken
 μίαν τινὰ καὶ τὴν αὐτὴν ἀγωγὴν, οὐδὲν ἂν ἡμῖν διαφέρει.
one certain and the same course in-nothing would for-us it-differ
 σχεδὸν γὰρ δῆλόν ἐστιν ὅτι ἡμεῖς λέγομεν κίνησιν τε καὶ
nearly for clear it-is that we call motion both and
 ἡρεμίαν φωνῆς καὶ ὃ ἐκείνοι κίνησιν. Ταῦτα μὲν οὖν
rest of-voice and what they (call)-motion these(-matters) indeed then
 ἐνταῦθα ἰκανῶς, ἐν ἄλλοις δὲ ἐπιπλεῖόν τε καὶ σαφέστερον
here sufficiently in others and at-more-length both and more-plainly
 διώρισται. Ἡ δὲ τάσις ὅτι μὲν οὐτ' ἐπίτασις οὐτ'
have-been-settled the but tension that indeed neither tightening nor
 ἄνεσις ἐστι παντελῶς δῆλον— τὴν μὲν γὰρ εἶναί φαμεν 13
slackening is wholly clear the one for to-be we-say
 ἡρεμίαν φωνῆς, τὰς δ' ἐν τοῖς ἔμπροσθεν εὔρομεν
(a)-rest of-voice the(-ones) others in the(-things) before we-found
 οὐσας κινήσεις τινάς,— ὅτι δὲ καὶ τῶν λοιπῶν,
being motions certain that and also from-the remaining(-two)
 τῆς βαρύτητος καὶ τῆς ὀξύτητος, ἕτερόν ἐστιν ἢ τάσις
the heaviness and the sharpness different is the tension
 πειρατέον κατανοῆσαι. Ὅτι μὲν οὖν ἡρεμεῖν συμβαίνει τῇ
one-must-try to-observe that indeed then to-rest it-befalls the

φωνῇ καὶ εἰς βαρύτητα καὶ εἰς ὀξύτητα ἀφικομένη, δῆλον
voice both at heaviness and at sharpness having-arrived (is)-clear
 ἐκ τῶν ἔμπροσθεν· ὅτι δὲ καὶ τῆς τάσεως ἡρεμίας
from the(-things) before that and also the tension (as-)a-rest
 τινὸς τεθείσης οὐδὲν μᾶλλον ἐκείνων ἐκατέρα ταῦτόν
certain having-been-laid-down nothing more of-those with-either the-same
 τάσις ἐστίν, ἐκ τῶν ῥηθησομένων ἔσται φανερόν. Δεῖ
tension is from the(-things) to-be-said it-will-be evident must
 δὴ καταμανθάνειν ὅτι τὸ μὲν ἐστάναι τὴν φωνὴν τὸ
indeed to-learn that the indeed to-stand the voice the
 μένειν ἐπὶ μιᾷ τάσεως ἐστι. συμβήσεται δ' αὐτῇ τοῦτο,
to-remain upon one tension is will-befall and it this
 εἴαν τ' ἐπὶ βαρύτητος εἴαν τ' ἐπ' ὀξύτητος ἰσθῆται. Εἰ
whether both upon heaviness whether and upon sharpness it-stand if
 δ' ἡ μὲν τάσις ἐν ἀμφοτέροις ὑπάρξει— καὶ γὰρ ἐπὶ
and the indeed tension in both will-subsist both for upon
 τῶν βαρέων καὶ ἐπὶ τῶν ὀξέων τὸ ἴστασθαι τὴν φωνὴν
the heavy and upon the sharp the to-stand the voice
 ἀναγκαῖον ἦν—, ἡ δ' ὀξύτης μηδέποτε τῇ βαρύτητι
necessary was the but sharpness never with-the heaviness
 συνυπάρξει μηδ' ἡ βαρύτης τῇ ὀξύτητι, δῆλον ὡς ἕτερόν
will-co-subsist nor the heaviness with-the sharpness (is)-clear that different
 ἐστὶν ἐκατέρου τούτων ἡ τάσις ὡς μηδὲν κοινὸν γιγνόμενον
is from-each of-these the tension as nothing common becoming
 ἐν ἀμφοτέροις. Ὅτι μὲν οὖν πέντε ταῦτ' ἐστὶν ἀλλήλων
in both that indeed then five these are from-one-another
 ἕτερα, τάσις τε καὶ ὀξύτης καὶ βαρύτης πρὸς δὲ τούτοις
different tension both and sharpness and heaviness in-addition and to-these
 ἄνεσίς τε καὶ ἐπίτασις, σχεδὸν δῆλον ἐκ τῶν εἰρημένων.
slackening both and tightening nearly (is)-clear from the(-things) said

The distance between high and low, set for the voice and the ear, is not boundless; whether melody in itself could grow without limit is left for later. Judgment must look to both the voice that sings and the ear that judges. Toward the small both fail at the least diesis; toward the great the ear may slightly outreach the voice.

Τούτων δ' ὄντων γνωρίμων ἐχόμενον ἂν εἴη διελθεῖν
 these and being known next would it-be to-go-through
 περὶ τῆς τοῦ βαρέος τε καὶ ὀξέος διαστάσεως, πότερον
 about the of-the heavy both and sharp distance whether
 ἄπειρος ἐφ' ἐκάτερά ἐστιν ἢ πεπερασμένη. Ὅτι μὲν οὖν 14
 boundless in both-directions it-is or bounded that indeed then
 εἷς γε τὴν φωνὴν τιθεμένη οὐκ ἔστιν ἄπειρος, οὐ χαλεπὸν
 for at-least the voice being-positied not it-is boundless not hard
 συνιδεῖν. ἀπάσης γὰρ φωνῆς ὀργανικῆς τε καὶ ἀνθρωπικῆς
 to-discern (of-)every for voice instrumental both and human
 ὠρισμένος ἐστὶ τις τόπος ὃν διεξέρχεται μελωδοῦσα
 determinate is a-certain region which it-traverses (in-)singing
 ὃ τε μέγιστος καὶ ὁ ἐλάχιστος. οὔτε γὰρ ἐπὶ τὸ μέγα
 the both greatest and the least neither for toward the great
 δύναται ἢ φωνὴ εἰς ἄπειρον αὔξειν τὴν τοῦ βαρέος τε καὶ
 is-able the voice to boundlessness to-increase the of-the heavy both and
 ὀξέος διάστασιν οὔτ' ἐπὶ τὸ μικρὸν συνάγειν, ἀλλ' ἴσταται
 sharp distance nor toward the small to-contract but it-stands
 ποτε ἐφ' ἐκάτερα. Δεῖ οὖν ἐκάτερον αὐτῶν πρὸς δύο
 at-some-point in both-directions must then each of-them toward two
 ποιουμένους τὴν ἀναφοράν, πρὸς τε τὸ φθεγγόμενον καὶ
 (as-men-)making the reference toward both the sounding and
 τὸ κρῖνον· ταῦτα δ' ἐστὶν ἢ τε φωνὴ καὶ ἡ ἀκοή. ὃ
 the judging these and are the both voice and the hearing what

γὰρ ἀδυνατοῦσιν αὐται ἢ μὲν ποιεῖν ἢ δὲ κρίνειν, τοῦτ'
for are-unable these the one to-do the other to-judge this
 ἔξω θετέον τῆς τε χρησίμου καὶ δυνατῆς ἐν φωνῇ
outside must-be-placed of-the both useful and possible in voice
 γενέσθαι διαστάσεως. Ἐπὶ μὲν οὖν τὸ μικρὸν ἅμα πως
to-come-to-be distance toward indeed then the small at-once somehow
 εἰόκασιν ἢ τε φωνῇ καὶ ἢ αἰσθησις ἐξαδυνατεῖν· οὔτε γὰρ
seem the both voice and the perception to-fail neither for
 ἢ φωνῇ διέσεως τῆς ἐλαχίστης ἔλαττον ἔτι διάστημα
the voice than-the-diesis the least (a)-smaller still interval
 δύναται διασαφεῖν οὐδ' ἢ ἀκοῇ διαισθάνεσθαι ὥστε καὶ
is-able to-make-plain nor the hearing to-discern so-as even
 ξυνιέναι τί μέρος ἐστὶ διέσεως εἴτ' ἄλλου τινὸς τῶν
to-comprehend what part it-is of-a-diesis or of-other any of-the
 γνωρίμων διαστημάτων. Ἐπὶ δὲ τὸ μέγα τάχ' ἂν δόξειεν
familiar intervals toward but the great perhaps would it-seem
 ὑπερτείνειν ἢ ἀκοῇ τὴν φωνὴν οὐ μέντοι γε πολλῷ
to-out-reach the hearing the voice not however at-least by-much
 τινι. Ἄλλ' οὖν ἔτ' ἐπ' ἀμφοτέρα δεῖ ταῦτον λαμβάνειν
any but then still in both-directions must the-same to-take
 πέρας τῆς διαστάσεως, εἷς τε τὴν φωνὴν καὶ τὴν ἀκοὴν
limit of-the distance to both the voice and the hearing
 βλέποντας, εἰ ἐπὶ μὲν τὸ ἐλάχιστον ταῦτον ἐπὶ δὲ
looking whether at indeed the least the-same at but
 τὸ μέγιστον ἕτερον· ἔσται τι μέγιστον καὶ ἐλάχιστον
the greatest another there-will-be some greatest and least
 μέγεθος τῆς διαστάσεως ἥτοι κοινὸν τοῦ φθεγγομένου καὶ
magnitude of-the distance either common of-the sounding and
 15 τοῦ κρίνοντος ἢ ἴδιον ἐκατέρου. Ὅτι μὲν οὖν εἷς τε
of-the judging or proper to-each that indeed then for both
 τὴν φωνὴν καὶ τὴν ἀκοὴν τεθεῖσα ἢ τοῦ βαρέος τε καὶ
the voice and the hearing posited the of-the heavy both and

ὀξεὸς διάστασις οὐκ εἰς ἄπειρον ἐφ' ἑκάτερα κινήσεται,
 sharp distance not to boundlessness in both-directions will-be-moved
 σχεδὸν δῆλον. εἰ δ' αὐτὴ καθ' αὐτὴν νοηθείη ἢ τοῦ
 nearly (is)-clear if but itself by itself were-conceived the of-the
 μέλους σύστασις, τὴν αὔξησιν εἰς ἄπειρον γίνεσθαι εἰ
 melody constitution the increase to boundlessness to-happen whether
 συμβήσεται, τάχ' ἂν ἄλλος εἴη περὶ τούτων λόγος,
 it-will-befall perhaps would another be about these(-matters) (an)-account
 οὐκ ἀναγκαῖος εἰς τὸ παρόν, διόπερ ἐν τοῖς ἔπειτα
 not necessary for the present wherefore in the(-inquiries) hereafter
 τοῦτ' ἐπισκέψασθαι πειρατέον.
 this to-examine one-must-try

1.6 • NOTE, INTERVAL, SYSTEM

A note is the falling of the voice upon one tension. An interval is what two notes of different tension bound — a difference of tensions, a region that receives notes. A system is a composite of more than one interval. Aristoxenus asks the hearer to take these outlines generously, since first definitions can rarely be exact.

Τούτου δ' ὄντος γνωρίμου λεκτέον περὶ φθόγγου τί ποτ'
 this and being known one-must-speak about (the)-note what ever
 ἐστί. Συντόμως μὲν οὖν εἰπεῖν φωνῆς πτώσις ἐπὶ μίαν τάσιν
 it-is concisely indeed then to-say of-voice (a)-falling upon one tension
 ὁ φθόγγος ἐστί· τότε γὰρ φαίνεται φθόγγος εἶναι τοιοῦτος
 the note is then for appears (a)-note to-be such
 οἷος εἰς μέλος τάττεσθαι ἡρμοσμένον, ὅταν ἡ φωνὴ φανῇ
 as into melody to-be-ranked attuned when the voice appears
 ἐστάναι ἐπὶ μιᾷ τάσεως. Ὁ μὲν οὖν φθόγγος τοιοῦτός
 to-stand upon one tension the indeed then note such
 ἐστιν· διάστημα δ' ἐστί τὸ ὑπὸ δύο φθόγγων ὠρισμένον
 is (an)-interval and is the(-thing) by two notes bounded

μὴ τὴν αὐτὴν τάσιν ἔχόντων. Φαίνεται γάρ, ὡς τύπῳ εἰπεῖν,
not the same tension having it-appears for in outline to-say
 διαφορά τις εἶναι τάσεων τὸ διάστημα καὶ τόπος δεκτικὸς
(a)-difference certain to-be of-tensions the interval and (a)-region receptive
 φθόγγων ὀξυτέρων μὲν τῆς βαρυτέρας τῶν ὀριζουσῶν τὸ
of-notes sharper indeed than-the heavier of-the bounding the
 διάστημα τάσεων, βαρυτέρων δὲ τῆς ὀξυτέρας· διαφορά
interval tensions heavier and than-the sharper (a)-difference
 δὲ ἐστὶ τάσεων τὸ μᾶλλον ἢ ἥττον τετάσθαι. Περὶ μὲν
and is of-tensions the more or less to-be-stretched about indeed
 οὖν διαστήματος οὕτως ἂν τις ἀφορίσειε· τὸ δὲ σύστημα
then interval thus would one mark-it-off the but system
 16 σύνθετόν τι νοητέον ἐκ πλειόνων ἢ ἐνός
(a)-composite something must-be-conceived from more than one
 διαστημάτων. Δεῖ δ' ἕκαστον τούτων εὖ πως
intervals must and each of-these well somehow
 ἐκλαμβάνειν πειρᾶσθαι τὸν ἀκούοντα μὴ παρατηροῦντα τὸν
take-up (and)-try the hearer not watching-closely the
 ἀποδιδόμενον λόγον ἑκάστου αὐτῶν εἴτ' ἐστὶν ἀκριβῆς
rendered account of-each of-them whether it-is exact
 εἴτε καὶ τυπωδέστερος, ἀλλ' αὐτὸν συμπροθυμούμενον
or even more-in-outline but himself eagerly-joining
 κατανοῆσαι καὶ τότε οἰόμενον ἱκανῶς εἰρῆσθαι πρὸς τὸ
to-understand and then thinking sufficiently to-have-been-said toward the
 καταμαθεῖν, ὅταν ἐμβιβάσαι οἷός τε γένηται ὁ λόγος εἰς
learning when to-set(-him)-aboard such as it-becomes the account into
 τὸ συνιέναι τὸ λεγόμενον. Χαλεπὸν γὰρ ὑπὲρ πάντων
the comprehending the(-thing) said hard for concerning all
 μὲν ἴσως τῶν ἐν ἀρχῇ λόγον ἀνεπιληπτόν τε καὶ
indeed perhaps the(-things) at (the)-beginning (an)-account unassailable both and

διηκριβωμένην ἐρμηνείαν ἔχοντα ῥηθῆναι, οὐχ ἥκιστα δὲ περὶ
thoroughly-exact interpretation having to-be-spoken not least and about
 τριῶν τούτων, φθόγγου τε καὶ διαστήματος καὶ συστήματος.
three these note both and interval and system

1.7 • THE DIVISIONS OF INTERVALS AND SYSTEMS

Intervals differ in five useful ways: by magnitude, concordant against discordant, composite against incomposite, by genus, and rational against irrational. Systems share these differences except one, and add three of their own — conjoined against disjoined, continuous against transilient, and single against double or manifold.

Τούτων δ' οὕτως ὀρισμένων πρῶτον μὲν τὸ διάστημα
these and thus being-determined first indeed the interval
 πειρατέον διελεῖν εἰς ὅσας πέφυκε διαιρέσεις διαιρεῖσθαι
one-must-try to-divide into as-many-as it-is-fitted divisions to-be-divided
 χρησίμους, ἔπειτα τὸ σύστημα. Πρώτη μὲν οὖν ἐστὶ
useful(-ones) then the system first indeed then is
 διαστημάτων διαίρεσις καθ' ἣν μεγέθει ἀλλήλων
of-intervals (a)-division according-to which in-magnitude from-one-another
 διαφέρει· δευτέρα δὲ καθ' ἣν τὰ σύμφωνα τῶν
they-differ second and according-to which the concordant from-the
 διαφώνων· τρίτη δὲ καθ' ἣν τὰ σύνθετα τῶν
discordant third and according-to which the composite from-the
 ἀσυνθέτων· τετάρτη δ' ἡ κατὰ γένος· πέμπτη δὲ
incomposite fourth and that by genus fifth and
 καθ' ἣν διαφέρει τὰ ῥητὰ τῶν ἀλόγων. Τὰς δὲ
according-to which differ the rational from-the irrational the and
 λοιπὰς τῶν διαιρέσεων ὡς οὐ χρησίμους οὐσας εἰς
remaining of-the divisions as not useful being for

- 17 ταύτην τὴν πραγματείαν ἀφετέον τὰ νῦν. Σύστημα δὲ
this the study must-be-dismissed for now (a)-system and
 συστήματος ταύταις τε διοίσει ταῖς αὐταῖς διαφοραῖς πλὴν
from-system by-these both will-differ the same differences except
 μιᾶς— μεγέθει τε γὰρ δῆλον ὡς διαφέρει συστήματος
one in-magnitude both for (is-it)-clear that differs from-system
 σύστημα καὶ τῷ τε συμφώνους ἢ διαφώνους εἶναι
(a)-system and by-the and concordant or discordant to-be
 τοὺς ὀρίζοντας φθόγγους τὸ μέγεθος. τὴν δὲ τρίτην τῶν
the bounding notes the magnitude the but third of-the
 ῥηθισῶν ἐπὶ τῶν τοῦ διαστήματος διαφορῶν ἀδύνατον
said(-divisions) in the of-the interval differences impossible
 ὑπάρξαι συστήματι πρὸς σύστημα, δῆλον γὰρ ὡς οὐκ
to-subsist for-system with system clear for that not
 ἐνδέχεται τὰ μὲν σύνθετα τὰ δ' ἀσύνθετα εἶναι τῶν
it-is-possible the some composite the others incomposite to-be of-the
 συστημάτων τοῦτόν γε τὸν τρόπον ὅνπερ τῶν
systems this at-least the way the-very-which of-the
 διαστημάτων τὰ μὲν ἦν σύνθετα τὰ δ' ἀσύνθετα. τὴν δὲ
intervals the some were composite the others incomposite the but
 τετάρτην— αὕτη δ' ἦν ἡ κατὰ γένος— ἀναγκαῖον καὶ
fourth this and was that by genus (it-is)-necessary also
 τοῖς συστήμασιν ὑπάρχειν, τὰ μὲν γὰρ αὐτῶν ἐστὶ διάτονα
for-the systems to-subsist the some for of-them are diatonic
 τὰ δὲ χρωματικά τὰ δὲ ἐναρμόνια. δῆλον δ' ὅτι καὶ
the others chromatic the others enharmonic (is-)clear and that also
 τὴν πέμπτην, τὰ μὲν γὰρ αὐτῶν ἀλόγῳ διαστήματι
the fifth the some for of-them by-an-irrational interval
 ὥρισται τὰ δὲ ῥητῷ. Πρὸς δὲ ταύταις τρεῖς ἑτέρας
are-bounded the others by-a-rational besides and these three other
 προσθετέον διαιρέσεις· τὴν τ' εἰς συναφὴν καὶ διάζευξιν
must-be-added divisions the both into conjunction and disjunction

καὶ τὸ συναμφότερον μερίζουσιν τὰ συστήματα· πᾶν γὰρ
 and the both-together partitioning the systems every for
 σύστημα ἀπὸ τινος μεγέθους ἀρξάμενον ἢ συνημμένον
 system from some magnitude having-begun either conjoined
 ἢ διεξυγμένον ἢ μικτὸν ἐξ ἀμφοτέρων γίνεταί (καὶ
 or disjoined or mixed from both becomes and
 δέικνυται τοῦτο γιγνόμενον ἐν ἐνίοις)· ἔπειτα τήν τ' εἰς
 is-shown this happening in some(-cases) next the both into
 ὑπερβατὸν καὶ συνεχὲς μερίζουσιν, πᾶν γὰρ σύστημα ἥτοι
 transilient and continuous partitioning every for system either
 συνεχὲς ἢ ὑπερβατόν ἐστι, τήν τ' εἰς ἀπλοῦν καὶ διπλοῦν
 continuous or transilient is the both into single and double
 καὶ πολλαπλοῦν διαίρεσιν, πᾶν γὰρ τὸ λαμβανόμενον
 and manifold division every for the taken
 σύστημα ἥτοι ἀπλοῦν ἢ διπλοῦν ἢ πολλαπλοῦν ἐστίν. Τί 18
 system either single or double or manifold is what
 δ' ἐστὶ τούτων ἕκαστον ἐν τοῖς ἔπειτα δειχθήσεται.
 and is of-these each in the(-things) hereafter will-be-shown

1.8 · WHAT MELODY IS

Musical melody is intervallic motion of the voice, which parts it from the melody of speech — the rise and fall natural to talking. But notes and intervals alone do not make it: even the untuned has those. What matters most is composition of a particular kind; attuned melody differs from the faulty by how its intervals are put together.

Τούτων δ' οὕτως ἀφωρισμένων τε καὶ προδιηρημένων περὶ
 these and thus having-been-marked-off both and pre-divided about
 μέλους ἂν εἴη ἡμῖν πειρατέον ὑποτυπῶσαι τί ποτ' ἐστὶν
 melody would it-be for-us (time-)to-try to-sketch what ever is

ἡ φύσις αὐτοῦ. Ὅτι μὲν οὖν διαστηματικὴν ἐν αὐτῷ δεῖ
the nature of-it that indeed then intervallic in it must
 τὴν τῆς φωνῆς κίνησιν εἶναι προεῖρηται, ὥστε τοῦ γε
the of-the voice motion be has-been-said-before so-that from-the at-least
 λογώδους κεχώρισται ταύτῃ τὸ μουσικὸν μέλος· λέγεται
speech-like it-is-separated hereby the musical melody there-is-spoken
 γὰρ δὴ καὶ λογῶδές τι μέλος, τὸ συγκεῖμενον ἐκ τῶν
for indeed also (a)-speech-like certain melody that composed from the
 προσφωδιῶν τῶν ἐν τοῖς ὀνόμασι· φυσικὸν γὰρ τὸ ἐπιτείνειν
accents those in the words natural for the tightening
 καὶ ἀνιέναι ἐν τῷ διαλέγεσθαι. Ἐπεὶ δ' οὐ μόνον ἐκ
and slackening in the conversing since and not only from
 διαστημάτων τε καὶ φθόγγων συνεστάναι δεῖ τὸ ἡρμοσμένον
intervals both and notes to-be-composed must the attuned
 μέλος, ἀλλὰ προσδεῖται συνθέσεως τινὸς ποιᾶς καὶ οὐ
melody but it-needs-in-addition composition (a)-certain particular and not
 τῆς τυχούσης— δῆλον γὰρ ὡς τό γ' ἐκ διαστημάτων
the chance(-one) clear for that the at-least from intervals
 τε καὶ φθόγγων συνεστάναι κοινόν ἐστιν, ὑπάρχει γὰρ
both and notes being-composed common is it-belongs for
 καὶ τῷ ἀναρμόστω—, ὥστ' ἐπειδὴ τοῦθ' οὕτως ἔχει, τὸ
even to-the unattuned so-that since this thus holds the
 μέγιστον μέρος καὶ πλείστην ἔχον ῥοπήν εἰς τὴν ὀρθῶς
greatest part and most having weight for the rightly
 γιγνομένην σύστασιν τοῦ μέλους τὸ περὶ τὴν σύνθεσιν
arising constitution of-the melody the(-matter) about the composition
 καθόλου καὶ τὴν ταύτης ιδιότητα ὑποληπτέον εἶναι. Σχεδὸν
in-general and the of-this particularity must-be-supposed to-be nearly
 δὴ φανερόν, ὅτι τοῦ μὲν ἐπὶ τῆς λέξεως γιγνομένου
indeed evident that from-the one upon the diction arising
 μέλους τῷ διαστηματικῇ χρῆσθαι τῇ τῆς φωνῆς
melody by-the intervallic to-use (namely-)the of-the voice

κινήσει διοίσει τὸ μουσικὸν μέλος, τοῦ δ' ἀναρμόστου
motion will-differ the musical melody from-the other unattuned
 καὶ διημαρτημένου τῇ τῆς συνθέσεως διαφορᾷ τῆς
and faulty by-the of-the composition difference that(-namely)
 τῶν ἀσυνθέτων διαστημάτων, περὶ ἧς ἐν τοῖς ἔπειτα 19
of-the incomposite intervals about which in the(-things) hereafter
 δειχθήσεται τίς ἐστὶν αὐτῆς ὁ τρόπος. πλὴν ἐπὶ τοσοῦτόν
will-be-shown what is of-it the manner except to so-much
 γ' εἰρήσθω καθόλου καὶ νῦν, ὅτι πολλὰς ἔχοντας
at-least let-it-be-said in-general even now that many having
 διαφορὰς τοῦ ἡρμοσμένου κατὰ τὴν τῶν διαστημάτων
differences the attuned according-to the of-the intervals
 σύνθεσιν, ὅμως ἔστι τι τοιοῦτον ὃ κατὰ παντὸς
composition nevertheless there-is something such which of every
 ἡρμοσμένου ῥηθήσεται ἐν τε καὶ ταυτόν, τοιαύτην ἔχον
attuned will-be-said one both and the-same such having
 δύναμιν οἷαν αὐτὴν ἀναιρουμένην ἀναιρεῖν τὸ ἡρμοσμένον.
power such-that it being-removed removes the attuned
 ἀπλοῦν δ' ἔσται προϊούσης τῆς πραγματείας. Τὸ μὲν
plain and it-will-be (as-)advances the study the indeed
 οὖν μουσικὸν μέλος ἀπὸ τῶν ἄλλων οὕτως ἀφωρίσθω.
then musical melody from the others thus let-be-marked-off
 ὑποληπτέον δὲ τὸν εἰρημένον ἀφορισμὸν τύπῳ εἰρήσθαι
one-must-suppose and the said definition in-outline to-have-been-said
 οὕτως ὥς μηδέπω τῶν καθ' ἕκαστα τεθεωρημένων.
thus as (with-)not-yet the(-things) by particulars having-been-studied

All attuned melody is diatonic, chromatic, or enharmonic. The diatonic is first and oldest, the one human nature meets before the rest; the chromatic is second; the enharmonic is last and highest, the one the ear learns only with much labor. Of the differences of intervals, concord is taken up first.

Ἐχόμενον δ' ἂν εἴη τῶν εἰρημένων τὸ καθόλου
next and would it-be on-the(-things) said the in-general
 λεγόμενον μέλος διελεῖν εἰς ὅσα φαίνεται γένη διαιρεῖσθαι.
so-called melody to-divide into as-many-as it-appears genera to-be-divided
 Φαίνεται δ' εἰς τρία· πᾶν γὰρ τὸ λαμβανόμενον μέλος
it-appears and into three every for the taken melody
 τῶν εἰς ταὐτὸ ἡρμοσμένων ἥτοι διάτονόν ἐστιν ἢ
of-the(-notes) into the-same attuned either diatonic is or
 χρωματικὸν ἢ ἐναρμόνιον. Πρῶτον μὲν οὖν καὶ πρεσβύτατον
chromatic or enharmonic first indeed then and oldest
 αὐτῶν θετέον τὸ διάτονον, πρῶτον γὰρ αὐτοῦ ἢ τοῦ
of-them must-be-set the diatonic first for on-it the of-the
 ἀνθρώπου φύσις προστυγχάνει, δεύτερον δὲ τὸ χρωματικόν,
man nature happens second and the chromatic
 τρίτον δὲ καὶ ἀνώτατον τὸ ἐναρμόνιον, τελευταίῳ γὰρ
third and also highest the enharmonic to-(it)-last for
 αὐτῷ καὶ μόλις μετὰ πολλοῦ πόνου συνεθίζεται ἢ αἴσθησις.
it and hardly with much toil is-accustomed the perception
 Τούτων δ' εἰς τοῦτον τὸν ἀριθμὸν διηρημένων τῶν
these and into this the number having-been-divided of-the
 διαστηματικῶν διαφορῶν τῆς δευτέρας ῥηθείσης θάτερον
intervallic differences the second having-been-stated the-one
 μέρος πειρατέον διασκέψασθαι— ἦν δὲ τὰ μέρη ταῦτα
part one-must-try to-examine were and the parts these

διαφωνία τε καὶ συμφωνία— ληπτέον τε τὴν συμφωνίαν
 discord both and concord must-be-taken and the concord
 εἰς τὴν ἐπίσκεψιν.
 into the examination

I.10 · THE CONCORDS AND THEIR SIZES

The least concord, the fourth, is fixed by the nature of melody itself: everything smaller is discordant. The greatest is fixed only by our capacity, since adding any concord to the octave yields a concord again. In practice the compass runs to the fifth beyond the double octave, though differing ages and instruments have shown the triple octave and beyond concordant. Eight sizes of concord result.

Φαίνεται δὲ διάστημα σύμφωνον συμφώνου διαφέρειν κατὰ 20
 appears and interval concordant from-concordant to-differ in
 πλείους διαφορὰς ὧν μία μὲν ἐστὶν ἡ κατὰ μέγεθος,
 several differences of-which one indeed is that by magnitude
 περὶ ἧς ἀφοριστέον ἥ φαίνεται ἔχειν. Δοκεῖ δὲ τὸ μὲν
 about which one-must-determine as it-appears to-hold it-seems and the indeed
 ἐλάχιστον τῶν συμφώνων διαστημάτων ὑπ' αὐτῆς τῆς τοῦ
 least of-the concordant intervals by itself the of-the
 μέλους φύσεως ἀφωρίσθαι, μελωδεῖται μὲν γὰρ τοῦ
 melody nature to-have-been-bounded there-are-sung indeed for than-the
 διὰ τεσσάρων ἐλάττω διαστήματα πολλά, διάφωνα μέντοι
 through four smaller intervals many discordant however
 πάντα. Τὸ μὲν οὖν ἐλάχιστον κατ' αὐτὴν τὴν τῆς φωνῆς
 all the indeed then least by itself the of-the voice
 φύσιν ὥρισται, τὸ δὲ μέγιστον οὕτω μὲν οὖν οὐκ ἔοικεν
 nature has-been-bounded the but greatest thus indeed then not seems
 ὀρίζεσθαι· φαίνεται γὰρ εἰς ἄπειρον αὔξεσθαι κατὰ γ'
 to-be-bounded it-appears for to boundlessness to-increase according at-least

αὐτὴν τὴν τοῦ μέλους φύσιν καθάπερ καὶ τὸ διάφωνον.
to-itself the of-the melody nature just-as also the discordant
 παντὸς γὰρ προστιθεμένου συμφώνου διαστήματος πρὸς
(with-)every for being-added concordant interval to
 τῷ διὰ πασῶν καὶ μείζονος καὶ ἐλάττονος καὶ ἴσου
the through all both greater and smaller and equal
 τὸ ὅλον γίγνεται σύμφωνον. Οὕτω μὲν οὖν οὐκ ἔοικεν
the whole becomes concordant thus indeed then not there-seems
 εἶναί τι μέγιστον σύμφωνον διάστημα· κατὰ μέντοι τὴν
to-be some greatest concordant interval according however-to the
 ἡμετέραν χρῆσιν— λέγω δ' ἡμετέραν τὴν τε διὰ τῆς
our use I-mean and (by-)ours that both through the
 ἀνθρώπου φωνῆς γιγνομένην καὶ τὴν διὰ τῶν ὀργάνων—
human voice arising and that through the instruments
 φαίνεται τι μέγιστον εἶναι τῶν συμφώνων. τοῦτο δ'
there-appears some greatest to-be of-the concords this and
 ἐστὶ τὸ διὰ πέντε καὶ τὸ δις διὰ πασῶν, τὸ γὰρ τρις
is the through five and the twice through all the for thrice
 διὰ πασῶν οὐκ ἔτι διατείνομεν. Δεῖ δὲ τὴν διάστασιν
through all no longer we-span must and the distance
 ὀρίζειν ενός τινος ὀργάνου τόπῳ καὶ πέρασιν. τάχα γὰρ
bound of-one certain instrument by-region and limits perhaps for
 ὁ τῶν παρθενίων αὐλῶν ὀξύτατος φθόγγος πρὸς τὸν
the of-the maidens' pipes sharpest note against the
 τῶν ὑπερτελείων βαρύτατον μείζον ἂν ποιήσειε
of-the beyond-complete(-pipes) heaviest greater would make
 21 τοῦ εἰρημένου τρις διὰ πασῶν διάστημα καὶ
than-the aforesaid thrice through all interval and
 κατασπασθείσης γε τῆς σύριγγος ὁ τοῦ συρίττοντος
having-been-drawn-down at-least the pan-pipe the of-the piper
 ὀξύτατος πρὸς τὸν τοῦ αὐλοῦντος βαρύτατον μείζον ἂν
sharpest(-note) against the of-the aulos-player heaviest greater would

ποιήσῃ τοῦ ῥηθέντος διαστήματος· ταὐτὸν δὲ καὶ παιδὸς
make than-the aforesaid interval the-same and also of-a-boy
 φωνὴ μικροῦ πρὸς ἀνδρὸς φωνὴν πάθοι ἄν. ὅθεν καὶ
voice small against a-man's voice would-suffer — whence also
 κατανοεῖται τὰ μεγάλα τῶν συμφώνων· ἐκ διαφερουσῶν
are-observed the great of-the concords from differing
 γὰρ ἡλικιῶν καὶ διαφερόντων μέτρων τεθεωρήκαμεν, ὅτι καὶ
for ages and differing measures we-have-seen that both
 τὸ τρις διὰ πασῶν συμφωνεῖ καὶ τὸ τετράκις καὶ τὸ μείζον.
the thrice through all concords and the four-times and the greater
 Ὅτι μὲν οὖν ἐπὶ μὲν τὸ μικρὸν ἢ τοῦ μέλους φύσις αὐτὴ
that indeed then toward indeed the small the of-the melody nature itself
 τὸ διὰ τεσσάρων ἐλάχιστον ἀποδίδωσι τῶν συμφώνων,
the through four (as)-least renders of-the concords
 ἐπὶ δὲ τὸ μέγα τῇ ἡμετέρᾳ πως τὸ μέγιστον ὀρίζεται
toward but the great by-the our somehow the greatest is-bounded
 δυνάμει, σχεδὸν δῆλον ἐκ τῶν εἰρημένων· ὅτι δ' ὀκτὼ
capacity nearly (is)-clear from the(-things) said that and eight
 μεγέθη συμφώνων διαστημάτων γίνεταί, ῥάδιον συνιδεῖν.
magnitudes of-concordant intervals arise (is)-easy to-see-together

I.11 • THE TONE AND ITS PARTS

The tone is the difference in magnitude between the first two concords, the fifth and the fourth. Three of its parts are sung: the half, called the semitone; the third, called the least chromatic diesis; and the quarter, the least enharmonic diesis. Everything smaller is unsingable.

Τούτων δ' ὄντων γνωρίμων τὸ τονιαῖον διάστημα
these and being known the tone-sized interval
 πειρατέον ἀφορίσαι. Ἔστι δὴ τόνος ἢ τῶν πρώτων
one-must-try to-mark-off is indeed (the)-tone the of-the first

συμφώνων κατὰ μέγεθος διαφορά. Διαιρείσθω δ' εἰς τρεῖς
concorde by magnitude difference let-it-be-divided and into three
 διαιρέσεις· μελωδεῖσθω γὰρ αὐτοῦ τό τε ἥμισυ καὶ τὸ
divisions let-there-be-sung for of-it the both half and the
 τρίτον μέρος καὶ τὸ τέταρτον· τὰ δὲ τούτων ἐλάττονα
third part and the fourth the but than-these smaller
 διαστήματα πάντα ἔστω ἀμελῶδητα. Καλείσθω δὲ τὸ
intervals all let-be unsingable let-be-called and the
 μὲν ἐλάχιστον δίεσις ἐναρμόνιος ἐλαχίστη, τὸ δ' ἐχόμενον
indeed least diesis enharmonic least the and next
 δίεσις χρωματικὴ ἐλαχίστη, τὸ δὲ μέγιστον ἡμιτόνιον.
diesis chromatic least the and greatest semitone

I.12 · THE MOVING NOTES AND THEIR RANGES

In the tetrachord from mese to hypate the two outer notes stand fast while the two inner ones move: their tightening and slackening makes the differences of the genera. The lichanos ranges through a whole tone, the parhypate through the least diesis; their regions do not overlap. Aristoxenus defends the two-tone lichanos of the older, nobler style against the moderns who sweeten everything toward the chromatic.

Τούτων δ' οὕτως ἀφωρισμένων τὰς τῶν γενῶν διαφορὰς
these and thus having-been-marked-off the of-the genera differences
 ὅθεν γίνονται καὶ ὃν τρόπον πειρατέον καταμαθεῖν.
whence they-arise and in-what manner one-must-try to-learn
 Δεῖ δὲ νοῆσαι τῶν συμφώνων διαστημάτων τὸ ἐλάχιστον
must and one-conceive of-the concordant intervals the least
 22 τὸ κατεχόμενον τά γε πλεῖστα ὑπὸ τεττάρων φθόγγων·
that occupied the at-least most-parts by four notes
 ὅθεν δὴ καὶ τὴν προσηγορίαν ὑπὸ τῶν παλαιῶν ἔσχε
whence indeed also the appellation from the ancients it-got

*** τίνα δὴ τάξιν πλειόνων οὐσῶν νοητέον; ἐν
 (lacuna) what then order several (there-)being must-be-conceived in
 ἥ ἴσα τά τε κινούμενά εἰσι καὶ τὰ ἡρεμοῦντα ἐν ταῖς
 which equal the both moving are and the resting in the
 τῶν γενῶν διαφοραῖς. Γίνεται δ' ἐν τῷ τοιούτῳ οἶον
 of-the genera differences arises and in the such(-tetrachord) as
 τὸ ἀπὸ μέσης ἐφ' ὑπάτην· ἐν τούτῳ γὰρ δύο μὲν οἱ
 that from mese to hypate in this for two indeed the
 περιέχοντες φθόγγοι ἀκίνητοί εἰσιν ἐν ταῖς τῶν γενῶν
 enclosing notes unmoved are in the of-the genera
 διαφοραῖς, δύο δ' οἱ περιεχόμενοι κινούνται. Τοῦτο μὲν
 differences two and the enclosed move this indeed
 οὖν οὕτω κείσθω. τῶν δὲ συγχορδιῶν πλειόνων τ' οὐσῶν
 then thus let-it-stand of-the but note-groups several both being
 τῶν τὴν εἰρημένην τάξιν τοῦ διὰ τεσσάρων κατεχουσῶν
 of-those the aforesaid order of-the through four occupying
 καὶ ὀνόμασιν ἰδίοις ἐκάστης αὐτῶν ὠρισμένης, μία τίς
 and by-names proper each of-them being-determined one certain
 ἐστίν ἢ μέσης καὶ λιχανοῦ καὶ παρυπάτης καὶ ὑπάτης
 is that of-mese and lichanos and parhypate and hypate
 σχεδὸν γνωριμωτάτη τοῖς ἀπτομένοις μουσικῆς ἐν ἣ τὰς
 nearly best-known to-those touching music in which the
 τῶν γενῶν διαφορὰς ἀναγκαῖον ἐπισκέψασθαι τίνα τρόπον
 of-the genera differences (it-is)-necessary to-examine in-what manner
 γίνονται. Ὅτι μὲν οὖν αἱ τῶν κινεῖσθαι πεφυκότων
 they-arise that indeed then the of-the to-move fitted
 φθόγγων ἐπιτάσεις τε καὶ ἀνέσεις αἰτιαί εἰσι τῆς τῶν
 notes tightenings both and slackenings causes are of-the of-the
 γενῶν διαφορὰς φανερόν. τίς δ' ὁ τόπος τῆς κινήσεως
 genera difference (is)-evident what but the region of-the motion
 ἑκατέρου τῶν φθόγγων τούτων λεκτέον. Λιχάνου μὲν οὖν
 of-each of-the notes these must-be-told of-lichanos indeed then

- ἐστὶ τονιαῖος ὁ σύμπας τόπος ἐν ᾧ κινεῖται, οὔτε γὰρ
is tone-sized the entire region in which it-moves neither for
 ἔλαττον ἀφίσταται μέσης τονιαίου διαστήματος οὔτε
less it-stands-off from-mese than-a-tone-sized interval nor
 μείζον διτόνου. Τούτων δὲ τὸ μὲν ἔλαττον παρὰ μὲν τῶν
more than-a-ditone of-these and the one less by indeed those
 ἤδη κατανενοηκότων τὸ διάτονον γένος οὐχ ὁμολογεῖται,
already having-recognized the diatonic genus not is-agreed
 23 παρὰ δὲ τῶν μήπω συνεωρακότων συγχωροῖτ' ἂν
by and those not-yet having-seen-together it-would-be-conceded —
 ἐπαχθέντων αὐτῶν· τὸ δὲ μείζον οἱ μὲν συγχωροῦσιν
having-been-led(-on) they the but greater some indeed concede
 οἱ δ' οὐ. δι' ἣν δὲ γίγνεται τοῦτο αἰτίαν, ἐν
others and not through what and arises this cause in
 τοῖς ἔπειτα ρηθήσεται. Ὅτι δ' ἔστι τις μελοποιῖα
the(-things) hereafter will-be-told that and there-is a-certain melody-making
 διτόνου λιχανοῦ δεομένη καὶ οὐχ ἡ φαυλοτάτη γε
of-a-ditone lichanos needing and not the meanest at-least
 ἀλλὰ σχεδὸν ἡ καλλίστη, τοῖς μὲν πολλοῖς τῶν νῦν
but nearly the finest to-the indeed many of-those now
 ἀπτομένων μουσικῆς οὐ πάνυ εὐδηλὸν ἐστι, γένοιτο
touching music not very evident it-is it-would-become
 μεντὰν ἐπαχθεῖσιν αὐτοῖς· τοῖς δὲ συνειθισμένοις
however (to-them-)having-been-brought to-them to-those but accustomed
 τῶν ἀρχαϊκῶν τρόπων τοῖς τε πρώτοις καὶ τοῖς δευτέροις
of-the archaic styles to-the both first and the second
 ἱκανῶς δηλὸν ἐστὶ τὸ λεγόμενον. Οἱ μὲν γὰρ
sufficiently clear is the(-thing) said the(-men) indeed for
 τῇ νῦν κατεχούσῃ μελοποιίᾳ συνήθεις μόνον ὄντες
with-the now prevailing melody-making familiar only being
 εἰκότως τὴν δίτονον λιχανὸν ἐξορίζουσι· συντονωτέραις γὰρ
with-reason the ditone lichanos banish tenser(-ones) for

χρῶνται σχεδὸν οἱ πλείστοι τῶν νῦν. τούτου δ' αἴτιον
they-use nearly the most of-the moderns this and (the)-cause
 τὸ βούλεσθαι γλυκαίνειν αἰεί, σημεῖον δ' ὅτι τούτου
the wishing to-sweeten always (a)-sign and that at-this
 στοχάζονται, μάλιστα μὲν γὰρ καὶ πλείστον χρόνον ἐν τῷ
they-aim most indeed for and most time in the
 χρώματι διατρίβουσιν, ὅταν δ' ἀφίκωνταί ποτε εἰς τὴν
chromatic they-dwell when and they-arrive ever at the
 ἀρμονίαν, ἐγγὺς τοῦ χρώματος προσάγουσι συνεσπασμένου
harmonia near the chromatic they-bring(-it) being-drawn-tight
 τοῦ ἥθους. Περὶ τούτων μὲν οὖν ἐπὶ τοσοῦτο ἀρκείτω·
the character about these indeed then to so-far let-it-suffice
 ὁ δὲ τῆς λιχανοῦ τόπος τονιαῖος ὑποκείσθω, ὁ δὲ τῆς
the indeed of-the lichanos region tone-sized let-be-supposed the and of-the
 παρυπάτης διέσεως ἐλαχίστης. οὔτε γὰρ ἐγγυτέρω τῆς
parhypate of-a-diesis least neither for nearer the
 ὑπάτης προσέρχεται διέσεως οὔτε πλείον ἀφίσταται ἡμίσεος
hypate it-approaches than-a-diesis nor more stands-off than-half
 τόνου. οὐ γὰρ ἐπαλλάττουσιν οἱ τόποι, ἀλλ' ἔστω αὐτῶν
a-tone not for overlap the regions but let-be of-them
 πέρας ἢ συναφή, ὅταν γὰρ ἐπὶ τὴν αὐτὴν τάσιν ἀφίκωνται
(the)-limit the conjunction when for upon the same tension arrive
 ἢ τε παρυπάτη καὶ ἡ λιχανός, ἡ μὲν ἐπιτεινομένη ἡ
the both parhypate and the lichanos the one being-tightened the
 δ' ἀνιεμένη, πέρας ἔχουσιν οἱ τόποι· καὶ ἔστιν ὁ μὲν
other being-slackened (a)-limit have the regions and is the one
 ἐπὶ τὸ βαρὺ παρυπάτης, ὁ δ' ἐπὶ τὸ ὀξὺ λιχανοῦ.
toward the heavy of-parhypate the other toward the sharp of-lichanos

Taking the fourth as two and a half tones, Aristoxenus builds the pyknon and takes six positions of the lichanos: two pykna of least dieses, one enharmonic and one chromatic, then the hemiolic, the tone-sized, and two diatonic. From these he bounds the ranges — every lichanos heavier than the chromatic is enharmonic, and the lichanoi are infinite in number, since wherever the voice stands in the region there is a lichanos. Parhyypate has two regions, one shared by diatonic and chroma, one proper to the enharmonic.

- 24 Περὶ μὲν οὖν τῶν ὅλων τόπων λιχανοῦ τε καὶ παρυπάτης
 about indeed then the whole regions of-lichanos both and of-parhyypate
 οὕτως ὠρίσθω, περὶ δὲ τῶν κατὰ τὰ γένη τε καὶ
 thus let-it-be-determined about but those according-to the genera both and
 τὰς χροᾶς λεκτέον. Τὸ μὲν οὖν διὰ τεσσάρων ὄν
 the shades one-must-speak the indeed then through four in-what
 τρόπον ἔξεταστέον, εἴτε μετρεῖται τιμὴ τῶν ἐλαττόνων
 manner must-be-examined whether it-is-measured by-some of-the smaller
 διαστημάτων εἴτε πᾶσιν ἔστιν ἀσύμμετρον, ἐν τοῖς
 intervals or to-all is incommensurable in the(-intervals)
 διὰ συμφωνίας λαμβανομένοις λέγεται ὡς φαινομένου
 through concord taken is-stated as appearing
 δ' ἐξ ἐκείνου δύο τόνων καὶ ἡμίσεος, κείσθω
 and from that(-method) of-two tones and a-half let-be-laid-down
 τοῦτο ἂν εἶναι τὸ μέγεθος. Πυκνὸν δὲ λεγέσθω τὸ ἐκ
 this then to-be the magnitude (a)-pyknon and let-be-called that from
 δύο διαστημάτων συνεστηκὸς ἃ συντεθέντα ἔλαττον
 two intervals composed which compounded (a)-smaller
 διάστημα περιέξει τοῦ λειπομένου διαστήματος ἐν τῷ διὰ
 interval will-enclose than-the remaining interval in the through
 τεσσάρων. Τούτων δ' οὕτως ὠρισμένων πρὸς τῷ βαρυτέρῳ
 four these and thus being-determined at the heavier

τῶν μενόντων φθόγγων εἰλήφθω τὸ ἐλάχιστον πυκνόν·
of-the standing notes let-be-taken the least pyknon
 τοῦτο δ' ἔσται τὸ ἐκ δύο διέσεων ἐναρμονίων ἐλαχίστων·
this and will-be that from two dieses enharmonic least
 ἔπειτα δεύτερον πρὸς τῷ αὐτῷ· τοῦτο δὲ ἔσται τὸ ἐκ δύο
then (a)-second at the same this and will-be that from two
 διέσεων χρωματικῶν ἐλαχίστων. ἔσονται δὲ αἱ δύο λιχανοὶ
dieses chromatic least there-will-be and the two lichanoi
 εἰλημμένοι δύο γενῶν βαρύτεραι, ἡ μὲν ἀρμονίας ἡ
taken of-two genera heaviest the one of-harmonia the
 δὲ χρώματος. καθόλου γὰρ βαρύτεραι μὲν αἱ ἐναρμόνιοι
other of-chromatic in-general for heaviest indeed the enharmonic
 λιχανοὶ ἦσαν, ἐχόμεναι δ' αἱ χρωματικαί, συντονώταται δ'
lichanoi were next and the chromatic tensest and
 αἱ διάτονοι. Μετὰ ταῦτα τρίτον εἰλήφθω πυκνόν πρὸς τῷ
the diatonic after these third let-be-taken (a)-pyknon at the
 αὐτῷ· τέταρτον δ' εἰλήφθω πυκνόν τονιαῖον· πέμπτον δὲ
same fourth and let-be-taken (a)-pyknon tone-sized fifth and
 πρὸς τῷ αὐτῷ, τὸ ἐξ ἡμιτονίου καὶ ἡμιολίου διαστήματος
at the same the from a-semitone and a-hemiolic interval
 συνεστηκὸς σύστημα εἰλήφθω· ἕκτον δὲ τὸ ἐξ ἡμιτονίου
composed system let-be-taken sixth and that from a-semitone
 καὶ τόνου. Αἱ μὲν οὖν τὰ δύο τὰ πρῶτα ληφθέντα
and a-tone the indeed then the two the first taken
 πυκνὰ ὀρίζουσαι λιχανοὶ εἴρηνται· ἡ δὲ τὸ τρίτον
pykna bounding lichanoi have-been-named the and the third
 πυκνὸν ὀρίζουσα λιχανὸς χρωματικὴ μὲν ἔστιν, καλεῖται 25
pyknon bounding lichanos chromatic indeed is it-is-called
 δὲ τὸ χρῶμα ἐν ᾧ ἔστιν ἡμιόλιον. Ἡ δὲ τὸ τέταρτον
and the chroma in which is (the)-hemiolic the and the fourth
 πυκνὸν ὀρίζουσα λιχανὸς χρωματικὴ μὲν ἔστιν, καλεῖται
pyknon bounding lichanos chromatic indeed is it-is-called

δὲ τὸ χρῶμα ἐν ᾧ ἐστὶ τονιαῖον. ἡ δὲ τὸ πέμπτον
and the chroma in which is (the)-tone-sized the and the fifth
 ληφθὲν σύστημα ὀρίζουσα λιχανός, ὃ μείζον ἤδη
taken system bounding lichanos which greater already
 πυκνοῦ ἦν, ἐπειδὴ περ ἴσα ἐστὶ τὰ δύο τῷ ἐνί, βαρυτάτη
than-a-pyknon was since-indeed equal are the two to-the one heaviest
 διάτονός ἐστιν. ἡ δὲ τὸ ἕκτον ληφθὲν σύστημα ὀρίζουσα
diatonic is the and the sixth taken system bounding
 λιχανὸς συντονωτάτη διάτονός ἐστιν. Ἡ μὲν οὖν βαρυτάτη
lichanos tensest diatonic is the indeed then heaviest
 χρωματικὴ λιχανὸς τῆς ἐναρμονίου βαρυτάτης ἕκτῃ
chromatic lichanos than-the enbarmonic heaviest by-a-sixth
 μέρει τόνου ὀξυτέρα ἐστίν, ἐπειδὴ περ ἡ χρωματικὴ δίεσις
part of-a-tone sharper is since-indeed the chromatic diesis
 τῆς ἐναρμονίου διέσεως δωδεκατημορίῳ τόνου μείζων
than-the enbarmonic diesis by-a-twelfth of-a-tone greater
 ἐστί. Δεῖ γὰρ τὸ τοῦ αὐτοῦ τριτημόριον τοῦ τετάρτου
is must for the of-the same third-part the fourth
 μέρους δωδεκατημορίῳ ὑπερέχειν, αἱ δὲ δύο χρωματικαὶ
part by-a-twelfth exceed the and two chromatic
 τῶν δύο ἐναρμονίων δῆλον ὡς τῷ διπλασίῳ. τοῦτο δὲ
than-the two enbarmonic (is-)clear that by-the double this and
 ἐστὶν ἐκτημόριον, ἔλαττον διάστημα τοῦ ἐλαχίστου τῶν
is a-sixth-part (a)-smaller interval than-the least of-the
 μελωδουμένων. Τὰ δὲ τοιαῦτα ἀμελώδητά ἐστιν, ἀμελώδητον
sung(-intervals) the and such unsingable are unsingable
 γὰρ λέγομεν ὃ μὴ τάττεται καθ' ἑαυτὸ ἐν συστήματι.
for we-call what not is-ranked by itself in (a)-system
 Ἡ δὲ βαρυτάτη διάτονος τῆς βαρυτάτης χρωματικῆς
the and heaviest diatonic than-the heaviest chromatic
 ἡμιτονίῳ καὶ δωδεκατημορίῳ τόνου ὀξυτέρα ἐστίν. ἐπὶ μὲν
by-a-semitone and a-twelfth of-a-tone sharper is to indeed

γὰρ τὴν τοῦ ἡμιολίου χρώματος λιχανὸν ἡμιτόνιον ἦν ἀπ'
for the of-the hemiolic chroma lichanos a-semitone was from
 αὐτῆς, ἀπὸ δὲ τῆς ἡμιολίου ἐπὶ τὴν ἐναρμόνιον δίεσις,
it from and the hemiolic to the enharmonic (a)-diesis
 ἀπὸ δὲ τῆς ἐναρμονίου ἐπὶ τὴν βαρυτάτην χρωματικὴν
from and the enharmonic to the heaviest chromatic
 ἑκτημόριον, ἀπὸ δὲ τῆς βαρυτάτης χρωματικῆς ἐπὶ τὴν
a-sixth-part from and the heaviest chromatic to the
 ἡμιόλιον δωδεκατημόριον τόνου. τὸ δὲ τεταρτημόριον
hemiolic a-twelfth of-a-tone the and quarter(-tone)
 ἐκ τριῶν δωδεκατημορίων σύγκειται, ὥστ' εἶναι φανερόν, 26
from three twelfth-parts is-composed so-as to-be evident
 ὅτι τὸ εἰρημένον διάστημά ἐστιν ἀπὸ τῆς βαρυτάτης
that the said interval is from the heaviest
 διατόνου ἐπὶ τὴν βαρυτάτην χρωματικὴν. Ἡ δὲ
diatonic to the heaviest chromatic the and
 συντονωτάτη διάτονος τῆς βαρυτάτης διατόνου δίεσει
tensest diatonic than-the heaviest diatonic by-a-diesis
 ἐστι συντονωτέρα. Ἐκ τούτων δὴ φανεροὶ γίνονται
is tenser from these indeed evident become
 οἱ τόποι τῶν λιχανῶν ἐκάστης· ἥ τε γὰρ βαρυτέρα
the regions of-the lichanoi of-each the both for heavier
 τῆς χρωματικῆς πᾶσά ἐστιν ἐναρμόνιος λιχανὸς ἥ
than-the chromatic all is (an)-enharmonic lichanos the
 τε τῆς διατόνου βαρυτέρα πᾶσά ἐστι χρωματικὴ
both of-the diatonic heavier all is chromatic
 μέχρι τῆς βαρυτάτης χρωματικῆς ἥ τε τῆς διατόνου
as-far-as the heaviest chromatic the and of-the diatonic
 συντονωτάτης βαρυτέρα πᾶσά ἐστι διάτονος μέχρι τῆς
tensest heavier all is diatonic as-far-as the
 βαρυτάτης διατόνου. Νοητέον γὰρ ἀπείρους τὸν ἀριθμὸν
heaviest diatonic must-be-conceived for boundless in number

τὰς λιχανούς· οὐ γὰρ ἂν στήσης τὴν φωνὴν τοῦ
the lichanoi where for ever you-set the voice of-the
 ἀποδεδειγμένου λιχανῶ τόπου λιχανὸς ἔσται, διάκενον
granted to-lichanos region (a)-lichanos there-will-be empty
 δ' οὐδέν ἐστι τοῦ λιχανοειδοῦς τόπου οὐδὲ τοιοῦτον οἶον
and nothing is of-the lichanos-shaped region nor such as
 μὴ δέχεσθαι λιχανόν. "Ωστ' εἶναι μὴ περὶ μικροῦ τὴν
not to-receive (a)-lichanos so-as to-be not about (a)-small(-thing) the
 ἀμφισβήτησιν· οἱ μὲν γὰρ ἄλλοι διαφέρονται περὶ τοῦ
dispute the indeed for others differ about the
 διαστήματος μόνον, οἶον πότερον δίτονός ἐστιν ἢ λιχανὸς ἢ
interval only as whether two-tone is the lichanos or
 συντονωτέρα ὡς μιᾶς οὔσης ἐναρμονίου· ἡμεῖς δ' οὐ μόνον
tenser as of-one being enharmonic we but not only
 πλείους ἐν ἐκάστῳ γένει φαμέν εἶναι λιχανοὺς μιᾶς ἀλλὰ
several in each genus say to-be lichanoi than-one but
 καὶ προστίθεμεν ὅτι ἄπειροί εἰσι τὸν ἀριθμόν. Τὰ
also we-add that boundless they-are in number the(-matters)
 μὲν οὖν περὶ τῶν λιχανῶν οὕτως ἀφωρίσθω· παρυπάτης
indeed then about the lichanoi thus let-be-determined of-parhybate
 δὲ δύο εἰσὶ τόποι, ὁ μὲν κοινὸς τοῦ τε διατόνου καὶ
but two are regions the one common of-the both diatonic and
 τοῦ χρώματος, ὁ δ' ἕτερος ἴδιος τῆς ἀρμονίας· κοινωνεῖ
the chromatic the and other proper to-the harmonia shares
 γὰρ τὰ δύο γένη τῶν παρυπατῶν. ἐναρμόνιος μὲν οὖν
for the two genera in-the parhypatai enharmonic indeed then
 ἐστὶ παρυπάτη πᾶσα ἢ βαρυτέρα τῆς
is parhybate every the heavier than-the
 27 βαρυτάτης χρωματικῆς, χρωματικὴ δὲ καὶ διάτονος ἢ λοιπὴ
heaviest chromatic chromatic and also diatonic the remaining
 πᾶσα μέχρι τῆς ἀφωρισμένης. Τῶν δὲ διαστημάτων τὸ μὲν
all as-far-as the marked-off(-one) of-the and intervals the one

ὑπάτης καὶ παρυπάτης τῷ παρυπάτης καὶ λιχανοῦ ἤτοι
of-hypate and parhypate than-that of-parhypate and lichanos either
 ἴσον μελωδεῖται ἢ ἔλαττον, τὸ δὲ παρυπάτης καὶ λιχανοῦ
equal is-sung or smaller the other of-parhypate and lichanos
 τῷ λιχανοῦ καὶ μέσης καὶ ἴσον καὶ ἀνισον ἀμφοτέρως.
than-that of-lichanos and mese both equal and unequal both-ways
 τούτου δ' αἴτιον τὸ κοινὰς εἶναι τὰς παρυπάτας τῶν
of-this and (the)-cause the common to-be the parhypatai of-the
 γενῶν, γίνεταί γὰρ ἐμμελὲς τετράχορδον ἐκ παρυπάτης
genera there-arises for (a)-melodic tetrachord from parhypate
 τε χρωματικῆς βαρυτάτης καὶ διατόνου λιχανοῦ τῆς
both chromatic heaviest and of-diatonic lichanos the
 συντονωτάτης. Ὁ δὲ τῆς παρυπάτης τόπος φανερός ἐστι ἐκ
tensest the and of-the parhypate region evident is from
 τῶν ἔμπροσθεν, διαιρεθεὶς τε καὶ συντεθεὶς ὅσος ἐστίν.
the(-things) before divided both and compounded how-great it-is

I.14 • CONTINUITY AND SUCCESSION

Continuity in melody is like the natural order of letters in speech: not everything follows everything. It is not to be sought in the close-packed diagrams of the harmonists but in the nature of melody itself, asking what the voice sets after what. The book closes with the axioms laid down for what follows and definitions of progression and its straight course, breaking off in a lacuna.

Περὶ δὲ συνεχείας καὶ τοῦ ἐξῆς ἀκριβῶς οὐ πάνυ ῥάδιον ἐν
about and continuity and the successive exactly not very easy at
 ἀρχῇ διορίσαι, τύπῳ δὲ πειρατέον ὑποσημῆναι. Φαίνεται δὲ
(the)-start to-define in-outline but one-must-try to-indicate appears and
 τοιαύτη τις φύσις εἶναι τοῦ συνεχοῦς ἐν τῇ μελωδίᾳ οὔα καὶ
such some (the)-nature to-be of-the continuous in the melody as also

- ἐν τῇ λέξει περὶ τὴν τῶν γραμμάτων σύνθεσιν· καὶ γὰρ ἐν
in the diction concerning the of-the letters composition also for in
 τῷ διαλέγεσθαι φύσει ἡ φωνὴ καθ' ἐκάστην τῶν συλλαβῶν
the conversing by-nature the voice in each of-the syllables
 πρῶτόν τι καὶ δεύτερον τῶν γραμμάτων τίθησι καὶ τρίτον
(a)-first some and second of-the letters places and third
 καὶ τέταρτον καὶ κατὰ τοὺς λοιποὺς ἀριθμοὺς ὡσαύτως, οὐ
and fourth and through the remaining numbers likewise not
 πᾶν μετὰ πᾶν, ἀλλ' ἔστι τοιαύτη τις φυσικὴ αὔξις
every(-one) after every(-one) but there-is such a natural growth
 τῆς συνθέσεως. παραπλησίως δὲ καὶ ἐν τῷ μελωδεῖν
of-the composition similarly and also in the singing
 ἔοικεν ἡ φωνὴ τιθεῖν κατὰ συνέχειαν τὰ τε διαστήματα
seems the voice to-place by continuity the both intervals
 καὶ τοὺς φθόγγους φυσικὴν τινα σύνθεσιν διαφυλάττουσα,
and the notes (a)-natural certain composition preserving
 οὐ πᾶν μετὰ πᾶν διάστημα μελωδοῦσα οὐτ' ἴσον οὐτ'
not every(-interval) after every interval singing neither equal nor
 ἄνισον. Ζητητέον δὲ τὸ συνεχὲς οὐχ ὡς οἱ ἁρμονικοὶ ἐν
unequal must-be-sought and the continuous not as the harmonists in
 28 ταῖς τῶν διαγραμμάτων καταπυκνώσεσιν ἀποδιδόναι
the of-the diagrams close-packings to-render
 πειρῶνται, τούτους ἀποφαίνοντες τῶν φθόγγων ἐξῆς
try these declaring of-the notes next
 ἀλλήλων κείσθαι οἷς συμβέβηκε τὸ ἐλάχιστον διάστημα
to-one-another to-lie for-which it-has-befallen the least interval
 διέχειν ἀφ' αὐτῶν. οὐ γὰρ ὅτι μὴ δυνατόν διέσεις ὀκτὼ
to-stand-apart from them not for that not possible dieses eight
 καὶ εἴκοσιν ἐξῆς μελωδεῖν τῇ φωνῇ ἐστίν, ἀλλὰ τὴν
and twenty in-succession to-sing for-the voice it-is but the
 τρίτην διέσιν πάντα ποιοῦσα οὐχ οἷα τέ ἐστι προστιθέναι,
third dieses everything doing not able — it-is to-add

ἀλλ' ἐπὶ μὲν τὸ ὀξύ ἐλάχιστον μελωδεῖ τὸ λοιπὸν τοῦ διὰ
but toward indeed the sharp (as-)least it-sings the remainder of-the through
 τεσσάρων,— τὰ δ' ἐλάττω πάντα ἑξαδυνατεῖ— τοῦτο δ'
four the but smaller all it-fails(-at) this and
 ἐστὶν ἥτοι ὀκταπλάσιον τῆς ἐλαχίστης διέσεως ἢ μικρῶ τινὶ
is either eightfold of-the least diesis or by-small some
 παντελῶς καὶ ἀμελωδήτῳ ἑλαττον, ἐπὶ δὲ τὸ βαρὺ τῶν
altogether even unsingable(-amount) less toward but the heavy than-the
 δύο διέσεων τονιαίου ἑλαττον οὐ δύναται μελωδεῖν. Οὐ δὲ
two dieses of-a-tone smaller not it-can sing not indeed
 προσεκτέον εἰ τὸ συνεχὲς ὅτε μὲν ἐξ ἴσων ὅτε
one-must-attend whether the continuous at-one-time indeed from equal at-another
 δ' ἐξ ἀνίσων γίνεταί, ἀλλὰ πρὸς τὴν τῆς μελωδίας
and from unequal(-intervals) arises but toward the of-the melody
 φύσιν πειρατέον βλέπειν κατανοεῖν τε προθυμούμενον τί
nature one-must-try to-look to-observe and being-eager what
 μετὰ τί πέφυκεν ἢ φωνὴ διάστημα τιθεῖν κατὰ μέλος.
after what is-fitted the voice (as-)interval to-place according-to melody
 εἰ γὰρ μετὰ παρυπάτην καὶ λιχανὸν μὴ δυνατόν ἐγγυτέρω
if for after parhypate and lichanos not (it-is-)possible nearer
 μελωδεῖν φθόγγον μέσης, αὕτη ἂν εἴη μετὰ τὴν
to-sing (a)-note than-mese this would be(-next) after the
 λιχανόν, εἴτε διπλάσιον εἴτε πολλαπλάσιον διάστημα ὀρίζει
lichanos whether double or manifold interval it-bounds
 τοῦ παρυπάτης καὶ λιχανοῦ. Τίνα μὲν οὖν τρόπον τό τε
of-that of-parhypate and lichanos in-what indeed then manner the both
 συνεχὲς καὶ τὸ ἐξῆς δεῖ ζητεῖν, σχεδὸν δὴλον ἐκ τῶν
continuous and the successive must one-see nearly (is)-clear from the(-things)
 εἰρημένων· πῶς δὲ γίνεταί καὶ τί μετὰ τί διάστημα
said how and it-arises and what after what interval

- 29 τίθεται τε καὶ οὐ τίθεται, ἐν τοῖς στοιχείοις δειχθήσεται.
is-placed both and not is-placed in the Elements will-be-shown
- Ὑποκείσθω μετὰ τὸ πυκνὸν ἢ τὸ ἄπυκνον τιθέμενον
let-it-be-supposed after the pyknon or the non-pyknon placed
- σύστημα ἐπὶ μὲν τὸ ὀξὺ μὴ τίθεσθαι ἔλαττον διάστημα
system toward indeed the sharp not to-be-placed (a)-smaller interval
- τοῦ λειπομένου τῆς πρώτης συμφωνίας, ἐπὶ δὲ τὸ
than-the remainder of-the first concord toward and the
- βαρὺ μὴ ἔλαττον τονιαίου· ὑποκείσθω δὲ καὶ τῶν ἐξῆς
heavy not (one)-smaller than-a-tone let-it-be-supposed and also of-the in-succession
- κειμένων φθόγγων κατὰ μέλος ἐν ἐκάστῳ γένει ἥτοι τοὺς
lying notes according-to melody in each genus either the
- τετάρτους τοῖς τέτρασι διὰ τεττάρων συμφωνεῖν ἢ τοὺς
fourths with-the fourth(-notes) through four to-concord or the
- πέμπτους τοῖς πέντε διὰ πέντε ἢ ἀμφοτέρως· ὧ
fifths with-the fifth(-notes) through five or both-ways for-whichever
- δ' ἂν τῶν φθόγγων μηδὲν ἢ τούτων συμβεβηκός, ἐκμελῇ
and ever of-the notes none is of-these befallen unmelodic
- τοῦτον εἶναι πρὸς τοὺς ἀσύμφωνός ἐστιν. Ὑποκείσθω δὲ
this(-note) to-be toward those with-which-it-is discordant let-it-be-supposed and
- καὶ τεττάρων γιγνομένων διαστημάτων ἐν τῷ διὰ πέντε,
also (of-)four arising intervals in the through five
- δύο μὲν ἴσων ὥς ἐπὶ τὸ πολὺ, τῶν τὸ πυκνὸν κατεχόντων,
two indeed equal as for the most of-those the pyknon occupying
- δύο δ' ἀνίσων, τοῦ τε λειπομένου τῆς πρώτης συμφωνίας
two and unequal the both remainder of-the first concord
- καὶ τῆς ὑπεροχῆς ἢ τὸ διὰ πέντε τοῦ διὰ τεσσάρων
and the excess by-which the through five the through four
- ὑπέρχει, ἐναντίως τίθεσθαι πρὸς τοῖς ἴσοις τὰ δὲ
exceeds contrariwise to-be-placed to the equal(-ones) the and
- ἄνισα ἐπὶ τε τὸ ὀξὺ καὶ τὸ βαρὺ. Ὑποκείσθω δὲ καὶ
unequal at both the sharp and the heavy let-it-be-supposed and also

τοὺς τοῖς ἐξῆς φθόγγοις συμφωνοῦντας διὰ τῆς αὐτῆς
those with-the successive notes concording through the same
 συμφωνίας ἐξῆς αὐτοῖς εἶναι. Ἀσύνθετον δὲ ὑποκείσθω
concord successive to-themselves to-be incomposite and let-it-be-supposed
 ἐν ἐκάστῳ γένει εἶναι διάστημα κατὰ μέλος ὃ ἡ
in each genus to-be (an)-interval according-to melody which the
 φωνὴ μελωδοῦσα μὴ δύναται διαιρεῖν εἰς διαστήματα.
voice singing not can divide into intervals
 Ὑποκείσθω δὲ καὶ τῶν συμφώνων ἕκαστον μὴ διαιρεῖσθαι
let-it-be-supposed and also of-the concords each not to-be-divided
 εἰς ἀσύνθετα πάντα μεγέθη. Ἀγωγὴ δ' ἔστω ἡ διὰ
into incomposite all magnitudes progression and let-be the(-course) through
 τῶν ἐξῆς φθόγων ὧν, ἔσωθεν τῶν ἄκρων, ὧν ἐν
the successive notes of-which within the extremes of-which one
 ἐκάστου ἐκατέρωθεν ἀσύνθετον κείται διάστημα· εὐθεῖα δ'
of-each on-either-side incomposite lies interval straight and
 ἡ ἐπὶ τὸ αὐτό. ***
that toward the same(-direction) (lacuna)

BOOK II

ΑΡΙΣΤΟΞΕΝΟΥ ΑΡΜΟΝΙΚΩΝ ΣΤΟΙΧΕΙΩΝ ΔΕΥΤΕΡΟΝ

II.1 • PLATO'S LECTURE ON THE GOOD

Book II opens with a story Aristotle used to tell: those who came to Plato's lecture on the Good expected wealth or happiness, heard mathematics and astronomy instead, and went away contemptuous. The moral is to say in advance what a study is about. Some expect harmonics to make them better men; others despise it as trivial. Neither is right.

Βέλτιον ἴσως ἐστὶ τὸ προδιελθεῖν τὸν τρόπον τῆς 30
 better perhaps it-is the going-through-beforehand the manner of-the
 πραγματείας τίς ποτ' ἐστίν, ἵνα προγινώσκοντες ὥσπερ
 study what ever it-is so-that knowing-beforehand as
 ὁδὸν ἢ βαδιστέον ῥάδιον πορευόμεθα εἰδότες τε κατὰ
 (a)-road by-which one-must-walk easily we-may-travel knowing both at
 τί μέρος ἐσμέν αὐτῆς καὶ μὴ λάθωμεν ἡμᾶς αὐτοὺς
 what part we-are of-it and lest we-escape our own(-notice)
 παρυσπολαμβάνοντες τὸ πρᾶγμα. Καθάπερ Ἀριστοτέλης
 mis-taking the matter just-as Aristotle
 αἰὲ διηγείτο τοὺς πλείστους τῶν ἀκουσάντων παρὰ
 always used-to-relate the most of-those having-heard from
 Πλάτωνος τὴν περὶ τἀγαθοῦ ἀκρόασιν παθεῖν. προσιέναι
 Plato the about the-good lecture to-have-felt to-come
 μὲν γὰρ ἕκαστον ὑπολαμβάνοντα λήψεσθαι τι τῶν
 indeed for each supposing to-get something of-the
 νομιζομένων τούτων ἀνθρωπίνων ἀγαθῶν οἶον πλοῦτον
 reckoned these human goods such-as wealth
 ὑγίειαν ἰσχὺν τὸ ὅλον εὐδαιμονίαν τινὰ θαυμαστήν· ὅτε
 health strength (in-)the whole (a)-happiness certain wonderful when

- δὲ φανείησαν οἱ λόγοι περὶ μαθημάτων καὶ ἀριθμῶν καὶ
but appeared the discourses about sciences and numbers and
 γεωμετρίας καὶ ἀστρολογίας καὶ τὸ πέρας ὅτι ἀγαθόν
geometry and astronomy and the conclusion that (the)-good
 31 ἐστὶν ἓν, παντελῶς οἶμαι παράδοξόν τι ἐφαίνετο
is one utterly I-think paradoxical something it-appeared
 αὐτοῖς· εἴθ' οἱ μὲν ὑποκατεφρόνουν τοῦ πράγματος οἱ
to-them then the some began-to-despise the matter the
 δὲ κατεμέμφοντο. Τί οὖν τὸ αἴτιον; οὐ προήδεσαν,
others found-fault what then the cause not they-foreknew
 ἀλλ' ὥσπερ οἱ ἐριστικοὶ πρὸς τὸννομα αὐτὸ ὑποκεχηγότες
but like the eristics at the-name itself gaping
 προσήεσαν· εἰ δέ γέ τις οἶμαι προεξετίθει τὸ ὅλον,
they-approached if and at-least someone I-think set-forth-beforehand the whole
 ἀπεγίνωσκεν ἂν ὁ μέλλων ἀκούειν ἢ εἴπερ ἤρεσκεν
would-renounce — the(-one) about to-hear or if-indeed it-pleased
 αὐτῷ διέμενεν ἂν ἐν τῇ εἰρημένῃ ὑπολήψει. Προέλεγε
him he-would-remain — in the said supposition used-to-forewarn
 μὲν οὖν καὶ αὐτὸς Ἀριστοτέλης δι' αὐτὰς ταύτας τὰς
indeed then also himself Aristotle for very these the
 αἰτίας, ὥς ἔφη, τοῖς μέλλουσιν ἀκροᾶσθαι παρ' αὐτοῦ, περὶ
causes as he-said those about to-hear from him about
 τίνων τ' ἐστὶν ἡ πραγματεία καὶ τίς. Βέλτιον δὲ καὶ
what-things both is the study and what(-it-is) better and also
 ἡμῶν φαίνεται, καθάπερ εἵπομεν ἐν ἀρχῇ, τὸ προειδέναι.
to-us it-appears just-as we-said at (the)-start the knowing-beforehand
 Γίνεται γὰρ ἐνίοτε ἐφ' ἑκάτερα ἁμαρτία· οἱ μὲν γὰρ μέγα
there-arises for sometimes on either-side error the some for great
 τι ὑπολαμβάνουσιν εἶναι τὸ μάθημα καὶ ἔσσεθαι
something suppose to-be the study and (that-they)-will-be
 ἔνιοι μὲν οὐ μόνον μουσικοὶ ἀκούσαντες τὰ ἁρμονικά, ἀλλὰ
some indeed not only musicians having-beard the harmonics but

καὶ βελτίους τὸ ἦθος— παρακούσαντες τῶν ἐν ταῖς δείξεσι
 also better in character having-misheard the in the lectures
 λόγων ὅτι πειρώμεθα ποιεῖν τῶν μελοποιῶν ἐκάστην καὶ τὸ
 words that we-try to-make of-the melody-makings each and the
 ὅλον, τῆς μουσικῆς ὅτι ἡ μὲν τοιαύτη βλάπτει τὰ ἡθῆ ἡ
 whole of-the music that the one such harms the characters the
 δὲ τοιαύτη ὠφελεί, τοῦτο αὐτὸ παρακούσαντες, τὸ δ'
 other such benefits this very(-thing) having-misheard the and
 ὅτι καθ' ὅσον μουσικὴ δύναται ὠφελεῖν οὐδ' ἀκούσαντες
 that in so-far-as music can benefit not-even having-heard
 ὅλως— οἱ δὲ πάλιν ὥς οὐδὲν ἄλλ' ἢ μικρόν τι
 at-all the others again as-though nothing else than (a)-small something
 καὶ βουλόμενοι μὴ εἶναι ἔμπειροι μηδὲ τί ποτ' ἔστιν.
 and wishing not to-be experienced nor(-to-know) what ever it-is
 Οὐδέτερον δὲ τούτων ἀληθές ἐστιν, οὔτε γὰρ εὐκαταφρόνητόν
 neither and of-these true is neither for contemptible
 ἐστὶ τινι ὃς νοῦν ἔχει τὸ μάθημα— δῆλον δ' ἔσται
 is to-one who sense has the study clear and it-will-be
 προϊόντος τοῦ λόγου οὔτε τηλικούτον ὥστ' αὐταρκες
 (as)-advances the discourse nor so-great so-as self-sufficing
 εἶναι πρὸς πάντα, καθάπερ οἴονται τινες. πολλὰ γὰρ δὴ 32
 to-be for all-things as think some many for indeed
 καὶ ἕτερα ὑπάρχει ἢ καθάπερ αἰεὶ λέγεται τῷ μουσικῷ·
 also other(-things) belong or as always is-said to-the musician
 μέρος γάρ ἐστιν ἡ ἀρμονικὴ πραγματεία τῆς τοῦ μουσικοῦ
 (a)-part for is the harmonic study of-the of-the musician
 ἕξεως, καθάπερ ἢ τε ρυθμικὴ καὶ ἡ μετρικὴ καὶ ἡ
 trained-condition just-as the both rhythmic and the metric and the
 ὀργανικὴ. Δεκτέον οὖν περὶ αὐτῆς τε καὶ τῶν μερῶν.
 instrumental one-must-speak then about it both and the parts

The science treats how the voice naturally places intervals, and its proofs must agree with the appearances. Aristoxenus rejects both his predecessors' schools — those who dismissed perception and built causes out of numbers and speeds, and those who uttered oracles without demonstration. His own principles are to be evident to everyone experienced in music.

Καθόλου μὲν οὖν νοητέον οὖσαν ἡμῖν τὴν θεωρίαν περὶ
in-general indeed then must-be-conceived being for-us the science about
 μέλους παντὸς πῶς ποτὲ πέφυκεν ἢ φωνὴ ἐπιτεινομένη καὶ
melody every how ever is-fitted the voice being-tightened and
 ἀνιεμένη τιθέναι τὰ διαστήματα. φυσικὴν γὰρ δὴ τινά
being-slackened to-place the intervals natural for indeed some
 φαμεν ἡμεῖς τὴν φωνὴν κίνησιν κινεῖσθαι καὶ οὐχ ὥς ἔτυχε
we-say we the voice motion to-move and not as it-chances
 διάστημα τιθέναι. Καὶ τούτων ἀποδείξεις πειρώμεθα λέγειν
interval to-place and of-these demonstrations we-try to-state
 ὁμολογουμένας τοῖς φαινομένοις, οὐ καθάπερ οἱ ἔμπροσθεν,
agreeing with-the appearances not as those before(-us)
 οἱ μὲν ἀλλοτριολογοῦντες καὶ τὴν μὲν αἴσθησιν ἐκκλίνοντες
the some speaking-alien(-matter) and the indeed perception declining
 ὥς οὖσαν οὐκ ἀκριβῆ, νοητὰς δὲ κατασκευάζοντες αἰτίας καὶ
as being not exact intelligible but constructing causes and
 φάσκοντες λόγους τέ τινας ἀριθμῶν εἶναι καὶ τάχῃ πρὸς
asserting ratios both certain of-numbers to-be and speeds toward
 ἀλλήλα ἐν οἷς τό τε ὀξύ καὶ τὸ βαρὺ γίγνεται, πάντων
one-another in which the both sharp and the heavy arises of-all
 ἀλλοτριωτάτους λόγους λέγοντες καὶ ἐναντιωτάτους τοῖς
most-alien accounts stating and most-contrary to-the
 φαινομένοις· οἱ δ' ἀποθεσπίζοντες ἕκαστα ἄνευ αἰτίας
appearances the others oracle-uttering each(-point) without cause

καὶ ἀποδείξεως οὐδ' αὐτὰ τὰ φαινόμενα καλῶς.

and demonstration not-even themselves the appearances well(-reporting)

Ἡμεῖς δ' ἀρχάς τε πειρώμεθα λαβεῖν φαινομένας ἀπάσας

we but principles and try to-take appearing all

τοῖς ἐμπείροις μουσικῆς καὶ τὰ ἐκ τούτων συμβαίνοντα 33

to-the experienced in-music and the(-things) from these following

ἀποδεικνύναι.

to-demonstrate

II.3 • HEARING AND UNDERSTANDING

The study rests on two faculties: hearing judges the sizes of intervals, understanding contemplates the functions of notes. Unlike geometry, which uses no perception, music makes exactness of hearing a first principle. Its comprehension is always of something abiding and something moving at once, as the genera, the figures, and the rhythms all show. It divides into seven parts, the first being to define the genera, which no one has yet done.

Ἔστι δὴ τὸ μὲν ὅλον ἡμῖν ἡ θεωρία περὶ μέλους

is indeed the indeed whole for-us the science about melody

παντὸς μουσικοῦ τοῦ γιγνομένου ἐν φωνῇ τε καὶ ὀργάνοις.

every musical that arising in voice both and instruments

Ἀνάγεται δ' ἡ πραγματεία εἰς δύο, εἷς τε τὴν ἀκοὴν

is-referred and the study to two(-things) to both the hearing

καὶ εἰς τὴν διάνοιαν. τῇ μὲν γὰρ ἀκοῇ κρίνομεν τὰ τῶν

and to the understanding by-the indeed for hearing we-judge the of-the

διαστημάτων μεγέθη, τῇ δὲ διανοίᾳ θεωροῦμεν τὰς

intervals magnitudes by-the and understanding we-contemplate the

τῶν φθόγγων δυνάμεις. Δεῖ οὖν ἐθισθῆναι ἕκαστα ἀκριβῶς

of-the notes functions must then one-be-trained each exactly

κρίνειν. οὐ γὰρ ἔστιν ὥσπερ ἐπὶ τῶν διαγραμμάτων

to-judge not for it-is as upon the diagrams

εἴθισται λέγεσθαι ἔστω τοῦτο εὐθεῖα γραμμή,— οὕτω
it-is-customary to-be-said let-be this (a)-straight line so
 καὶ ἐπὶ τῶν διαστημάτων εἰπόντα ἀπηλλάχθαι. ὁ μὲν
also upon the intervals having-spoken to-be-quit the indeed
 γὰρ γεωμέτρης οὐδὲν χρήται τῇ τῆς αἰσθήσεως δυνάμει, οὐ
for geometer nothing uses the of-the perception power not
 γὰρ ἐθίζει τὴν ὄψιν οὔτε τὸ εὐθὺ οὔτε τὸ περιφερὲς οὔτ'
for he-trains the sight neither the straight nor the curved nor
 ἄλλο οὐδὲν τῶν τοιούτων οὔτε φαύλως οὔτε εὖ κρίνειν,
other anything of-the such neither badly nor well to-judge
 ἀλλὰ μᾶλλον ὁ τέκτων καὶ ὁ τορνευτῆς καὶ ἕτεραί τινες
but rather the carpenter and the turner and other some
 τῶν τεχνῶν περὶ ταῦτα πραγματεύονται. τῷ δὲ μουσικῷ
of-the crafts about these are-busied for-the but musician
 σχεδὸν ἔστιν ἀρχῆς ἔχουσα τάξιν ἢ τῆς αἰσθήσεως
nearly is of-a-first-principle holding rank the of-the perception
 ἀκρίβεια, οὐ γὰρ ἐνδέχεται φαύλως αἰσθανόμενον εὖ
exactness not for it-is-possible badly perceiving well
 λέγειν περὶ τούτων ὧν μηδένα τρόπον αἰσθάνεται.
to-speak about these(-things) which in-no way he-perceives
 Ἔσται δὲ τοῦτο φανερόν ἐπ' αὐτῆς τῆς πραγματείας.
it-will-be and this evident upon itself the study
 Οὐ δεῖ δ' ἀγνοεῖν, ὅτι ἡ τῆς μουσικῆς ξύνεσις
not must and one-fail-to-know that the of-the music understanding
 ἅμα μένοντός τινος καὶ κινουμένου ἐστὶ καὶ τοῦτο
at-once of-something-abiding certain and moving is and this
 σχεδὸν διὰ πάσης καὶ κατὰ πᾶν μέρος αὐτῆς, ὥς εἰπεῖν
nearly through all and in every part of-it so-to speak
 ἀπλῶς, διατείνειν. Εὐθέως γὰρ τὰς τῶν γενῶν διαφορὰς
simply extends straightway for the of-the genera differences
 αἰσθανόμεθα τοῦ μὲν περιέχοντος μένοντος, τῶν δὲ
we-perceive the one enclosing abiding the others

μέσων κινουμένων· καὶ πάλιν ὅταν μένοντος τοῦ
 middle(-notes) moving and again when abiding the
 μεγέθους τὸδε μὲν καλῶμεν ὑπάτην καὶ μέσην, τὸδε δὲ
 magnitude this indeed we-call hypate and mese that and
 παραμέσην καὶ νήτην, μένοντος γὰρ τοῦ μεγέθους συμβαίνει
 paramese and nete abiding for the magnitude it-befalls
 κινεῖσθαι τὰς τῶν φθόγγων δυνάμεις· καὶ πάλιν ὅταν τοῦ
 to-move the of-the notes functions and again when of-the
 αὐτοῦ μεγέθους πλείω σχήματα γίνηται, καθάπερ τοῦ τε
 same magnitude several figures arise as of-the both
 διὰ τεσσάρων καὶ διὰ πέντε καὶ ἑτέρων· ὡσαύτως δὲ
 through four and through five and others likewise and
 καὶ ὅταν τοῦ αὐτοῦ διαστήματος πῇ μὲν τιθεμένου
 also when of-the same interval in-one-way indeed placed
 μεταβολὴ γίνηται, πῇ δὲ μή. Πάλιν ἐν τοῖς περὶ
 modulation arises in-another and not again in the(-studies) about
 τοὺς ῥυθμοὺς πολλὰ τοιαῦθ' ὁρῶμεν γιγνόμενα· καὶ γὰρ
 the rhythms many such we-see happening also for
 μένοντος τοῦ λόγου καθ' ὃν διώρισται τὰ γένη τὰ μεγέθη
 abiding the ratio by which are-defined the genera the magnitudes
 κινεῖται τῶν ποδῶν διὰ τὴν τῆς ἀγωγῆς δύναμιν, καὶ
 move of-the feet through the of-the tempo power and
 τῶν μεγεθῶν μενόντων ἀνόμοιοι γίνονται οἱ πόδες· καὶ
 the magnitudes abiding unlike become the feet and
 τὸ αὐτὸ μέγεθος πόδα τε δύναται καὶ συζυγίαν· δηλὸν δ'
 the same magnitude (as)-foot both can-serve and (as)-pair (is)-clear and
 ὅτι καὶ αἱ διαφοραὶ αἱ τῶν διαιρέσεών τε καὶ σχημάτων
 that also the differences those of-the divisions both and figures
 περὶ μένον τι μέγεθος γίνονται. καθόλου δ' εἰπεῖν ἡ
 about (an)-abiding some magnitude arise in-general and to-speak the
 μὲν ῥυθμοποιῖα πολλὰς καὶ παντοδαπὰς κινήσεις κινεῖται,
 indeed rhythm-making many and manifold motions moves

οἱ δὲ πόδες οἷς σημαίνόμεθα τοὺς ῥυθμοὺς ἀπλᾶς τε καὶ
the but feet by-which we-mark the rhythms simple both and
 τὰς αὐτὰς αἰεί. Τοιαύτην δ' ἐχούσης φύσιν τῆς μουσικῆς
the same always such and having nature the music
 ἀναγκαῖον καὶ ἐν τοῖς περὶ τὸ ἡρμοσμένον συνεθισθῆναι
necessary also in the(-studies) about the attuned to-be-trained
 τὴν τε διάνοιαν καὶ τὴν αἴσθησιν καλῶς κρίνειν τό
the both understanding and the perception well to-judge the
 τε μένον καὶ τὸ κινούμενον. Ἀπλῶς μὲν οὖν εἰπεῖν
both abiding and the moving simply indeed then to-speak
 τοιαύτη τίς ἐστίν ἡ ἀρμονικὴ κληθεῖσα ἐπιστήμη οἷαν
such a-certain is the harmonic called science as-we
 διεληλύθαμεν· συμβέβηκε δ' αὐτὴν διαιρεῖσθαι εἰς ἑπτὰ μέρη.
have-gone-through it-has-befallen and it to-be-divided into seven parts

35 Ὡν ἐστίν ἐν μὲν καὶ πρῶτον τὸ διορίσαι τὰ γένη
of-which is one indeed and first the to-define the genera
 καὶ ποιῆσαι φανερόν, τίνων ποτὲ μενόντων καὶ τίνων
and to-make evident what(-notes) ever abiding and what
 κινουμένων αἱ διαφοραὶ αὐταὶ γίνονται. Τοῦτο γὰρ
moving the differences these arise this for
 οὐδεὶς πώποτε διώρισε τρόπον τινὰ εἰκότως· οὐ γὰρ
no-one ever defined (in-any-)manner some with-reason not for
 ἐπραγματεύοντο περὶ τῶν δύο γενῶν, ἀλλὰ περὶ αὐτῆς
they-were-busied about the two genera but about itself
 τῆς ἀρμονίας· οὐ μὴν ἀλλ' οἳ γε διατρίβοντες περὶ
the harmonia not however but those at-least dwelling about
 τὰ ὄργανα διησθάνοντο μὲν ἐκάστου τῶν γενῶν, αὐτὸ
the instruments discerned indeed each of-the genera itself
 δὲ τὸ πότε ἄρχεται ἐξ ἀρμονίας χρῶμά τι γίνεσθαι,
but the when begins from harmonia (a)-chroma some to-arise
 οὐδεὶς οὐδ' ἐπέβλεψε πώποτ' αὐτῶν. οὔτε γὰρ κατὰ πᾶσαν
no-one even observed ever of-them neither for in every

χροάν ἐκάστου τῶν γενῶν διησθάνοντο διὰ τὸ μήτε
shade of-each of-the genera they-discerned because-of the neither
 πάσης μελοποιῖας ἔμπειροι εἶναι μήτε συνειθίσθαι περὶ
of-every melody-making experienced to-be nor to-have-been-trained about
 τὰς τοιαύτας διαφορὰς ἀκριβολογεῖσθαι οὔτ' αὐτό πως
the such differences to-speak-exactly nor itself somehow
 τοῦτο κατέμαθον ὅτι τόποι τινὲς ἦσαν τῶν κινουμένων
this they-learned that regions certain were of-the moving
 φθόγγων ἐν ταῖς τῶν γενῶν διαφοραῖς. Δι' αἷς μὲν οὖν
notes in the of-the genera differences for which indeed then
 αἰτίας οὐκ ἦν διωρισμένα τὰ γένη πρότερον, σχεδὸν εἰσιν
causes not were defined the genera formerly nearly are
 αἱ εἰρημέναι· ὅτι δὲ διοριστέον εἰ μέλλομεν ἀκολουθεῖν
the said(-ones) that but one-must-define if we-intend to-follow
 ταῖς γιγνομέναις ἐν τοῖς μέλεσι διαφοραῖς, φανερόν.
the arising in the melodies differences (is)-evident

II.4 · THE SEVEN PARTS

The parts are enumerated: the genera; intervals; notes; systems; the keys on which systems are set — where the harmonists' lists are as arbitrary as civic calendars; modulation, on which nothing has been said; and last, melody-making itself. Along the way Aristoxenus notes how much of this no one has examined at all.

Πρῶτον μὲν οὖν τῶν μερῶν ἐστὶ τὸ εἰρημένον· δεύτερον
first indeed then of-the parts is the said(-one) second
 δὲ τὸ περὶ διαστημάτων εἰπεῖν, μηδεμίαν τῶν ὑπαρχουσῶν
and the about intervals to-speak none of-the belonging
 αὐτοῖς διαφορῶν εἰς δύναμιν παραλιμπάνοντας. Σχεδὸν
to-them differences to (our)-power passing-over nearly
 δέ, ὥς ἀπλῶς εἰπεῖν, αἱ πλείους αὐτῶν εἰσὶν ἀθεώρητοι.
and so simply to-speak the more of-them are unexamined

οὐ δεῖ δ' ἀγνοεῖν, ὅτι καθ' ἣν ἂν γενώμεθα τῶν
not must and one-fail-to-know that in whichever ever we-be of-the
 ἐκλιμπανουσῶν τε καὶ ἀθεωρήτων διαφορῶν, κατὰ ταύτην
omitted both and unexamined differences in this
 ἀγνοήσομεν τὰς ἐν τοῖς μελωδουμένοις διαφοράς.
we-shall-fail-to-know the in the sung(-melodies) differences

36 Ἐπεὶ δ' ἐστὶν οὐκ αὐτάρκη τὰ διαστήματα πρὸς τὴν
since and are not self-sufficient the intervals for the
 τῶν φθόγγων διάγνωσιν— πᾶν γάρ, ὡς ἀπλῶς εἶπεῖν,
of-the notes discernment every for so simply to-speak
 διαστήματος μέγεθος πλειόνων τινῶν δυνάμεων κοινόν
of-interval magnitude of-several certain functions common
 ἐστίν—, τρίτον ἂν τι μέρος εἴη τῆς ὅλης πραγματείας
is third would some part be of-the whole study
 τὸ περὶ τῶν φθόγγων εἶπεῖν ὅσοι τ' εἰσὶ καὶ τίνι
that about the notes to-speak how-many both they-are and by-what
 γνωρίζονται καὶ πότερον τάσεις τινές εἰσιν, ὥσπερ οἱ
they-are-known and whether tensions certain they-are as the
 πολλοὶ ὑπολαμβάνουσιν, ἢ δυνάμεις καὶ αὐτὸ τοῦτο τί
many suppose or functions and itself this what
 ποτ' ἐστὶν ἡ δύναμις. Οὐδὲν γὰρ τῶν τοιούτων διορᾶται
ever is the function nothing for of-the such is-seen-clearly
 καθαρῶς ὑπὸ τῶν τὰ τοιαῦτα πραγματευομένων.

purely by those the such(-matters) treating
 Τέταρτον δ' ἂν εἴη μέρος τὰ συστήματα θεωρῆσαι πόσα
fourth and would be part the systems to-contemplate how-many
 τ' ἐστὶ καὶ ποῖ ἅττα καὶ πῶς ἔκ τε τῶν διαστημάτων
both they-are and what sorts and how from both the intervals
 καὶ φθόγγων συνεστηκότα. Οὐδέτερον γὰρ τῶν τρόπων
and notes composed neither for of-the ways
 τεθεώρηται τὸ μέρος τοῦτο ὑπὸ τῶν ἔμπροσθεν· οὔτε
has-been-contemplated the part this by those before neither

γὰρ εἰ πάντα τρόπον ἐκ τῶν διαστημάτων συντίθεται
for whether every way from the intervals are-compounded
 τὰ συστήματα καὶ μηδεμία τῶν συνθέσεων παρὰ φύσιν
the systems and none of-the compoundings against nature
 ἐστὶν ἐπισκέψεως τετύχηκεν, οὐθ' αἱ διαφοραὶ πᾶσαι τῶν
is of-examination it-has-chanced nor the differences all of-the
 συστημάτων ὑπ' οὐδενὸς ἐξηρίθμηνται. Περὶ μὲν γὰρ
systems by anyone have-been-counted about indeed for
 ἑμμελοῦς ἢ ἐκμελοῦς ἀπλῶς οὐδένα λόγον πεποιήνται
melodic or unmelodic simply no account have-made
 οἱ πρὸ ἡμῶν, τῶν δὲ συστημάτων τὰς διαφορὰς οἱ
those before us of-the but systems the differences the
 μὲν ὅλως οὐκ ἐπεχείρουν ἐξαριθμεῖν— ἀλλὰ περὶ αὐτῶν
some wholly not attempted to-count-up but about them
 μόνον τῶν ἐπτὰ ὀκταχόρδων ἃ ἐκάλουν ἁρμονίας
only the seven eight-stringed(-scales) which they-called harmoniai
 τὴν ἐπίσκεψιν ἐποιοῦντο—, οἱ δ' ἐπιχειρήσαντες οὐδένα
the examination made the others having-attempted in-no
 τρόπον ἐξηριθμοῦντο, καθάπερ οἱ περὶ Πυθαγόραν τὸν
way counted-up just-as those around Pythagoras the
 Ζακύνθιον καὶ Ἀγήνορα τὸν Μιτυληναῖον. Ἔστι
Zacynthian and Agenor the Mytilenean is
 δὲ τοιαύτη τις ἢ περὶ τὸ ἑμμελὲς τε καὶ ἐκμελὲς 37
and such a-certain the concerning the melodic both and unmelodic
 τάξις οἷα καὶ ἡ περὶ τὴν τῶν γραμμάτων σύνθεσιν
order as also that concerning the of-the letters composition
 ἐν τῷ διαλέγεσθαι· οὐ γὰρ πάντα τρόπον ἐκ τῶν αὐτῶν
in the conversing not for (in)-every way from the same
 γραμμάτων συντιθεμένη ξυλλαβὴ γίνεταί, ἀλλὰ πῶς
letters compounded (a)-syllable arises but somehow
 μέν, πῶς δ' οὐ.
in-one-way somehow in-another not

Πέμπτον δ' ἐστὶ τῶν μερῶν τὸ περὶ τοὺς τόνους ἐφ'
fifth and is of-the parts that about the keys on
 ὧν τιθέμενα τὰ συστήματα μελωδεῖται. Περὶ ὧν οὐδεὶς
which placed the systems are-sung about which no-one
 οὐδὲν εἶρηκεν, οὔτε τίνα τρόπον ληπτέον οὔτε πρὸς τί
anything has-said neither in-what manner must-be-taken nor toward what
 βλέποντας τὸν ἀριθμὸν αὐτῶν ἀποδοτέον ἐστίν. ἀλλὰ
looking the number of-them must-be-rendered is but
 παντελῶς ἔοικε τῇ τῶν ἡμερῶν ἀγωγῇ τῶν ἀρμονικῶν ἣ
utterly resembles the of-the days reckoning of-the harmonists the
 περὶ τῶν τόνων ἀπόδοσις, οἷον ὅταν Κορίνθιοι μὲν δεκάτην
about the keys rendering as when Corinthians indeed (the)-tenth
 ἄγωσιν, Ἀθηναῖοι δὲ πέμπτην ἕτεροι δέ τινες ὀγδόην.
keep Athenians and (the)-fifth others and some (the)-eighth
 οὕτω γὰρ οἱ μὲν τῶν ἀρμονικῶν λέγουσι βαρύτετον μὲν
thus for the some of-the harmonists say heaviest indeed
 τὸν ὑποδώριον τῶν τόνων, ἡμιτονίᾳ δὲ ὀξύτερον τούτου
the hypodorian of-the keys by-a-semitone and sharper than-this
 τὸν μιξολύδιον, τούτου δ' ἡμιτονίᾳ τὸν δώριον, τοῦ δὲ
the mixolydian than-this and by-a-semitone the dorian than-the and
 δωρίου τόνῳ τὸν φρύγιον, ὡσαύτως δὲ καὶ τοῦ φρυγίου
dorian by-a-tone the phrygian likewise and also than-the phrygian
 τὸν λύδιον ἑτέρῳ τόνῳ· ἕτεροι δὲ πρὸς τοῖς εἰρημένους
the lydian by-another tone others and besides the said(-ones)
 τὸν ὑποφρύγιον αὐλὸν προστιθέασιν ἐπὶ τὸ βαρὺ, οἱ δὲ
the hypophrygian aulos add at the heavy(-end) others and
 αὖ πρὸς τὴν τῶν αὐλῶν τρύπησιν βλέποντες τρεῖς μὲν
again at the of-the auloi boring looking three indeed
 τοὺς βαρυτάτους τρισὶ διέσεσιν ἀπ' ἀλλήλων χωρίζουσιν,
the heaviest by-three dieses from one-another separate
 τὸν τε ὑποφρύγιον καὶ τὸν ὑποδώριον καὶ τὸν δώριον,
the both hypophrygian and the hypodorian and the dorian

τὸν δὲ φρυγίον ἀπὸ τοῦ δωρίου τόνω, τὸν δὲ λυδίον
the and phrygian from the dorian by-a-tone the and lydian
 ἀπὸ τοῦ φρυγίου πάλιν τρεῖς διέσεις ἀφιστᾶσιν· ὡσαύτως
from the phrygian again three dieses they-set-apart likewise
 δὲ καὶ τὸν μιξολύδιον τοῦ λυδίου. Τί δ' ἐστὶ πρὸς
and also the mixolydian from-the lydian what and is (that)-toward
 ὃ βλέποντες οὕτω ποιεῖσθαι τὴν διάστασιν τῶν τόνων 38
whicb looking thus to-make the spacing of-the keys
 προτεθίμηνται, οὐδὲν εἰρήκασιν. Ὅτι δέ ἐστιν ἡ πύκνωσις
they-have-been-eager nothing they-have-said that but is the close-packing
 ἐκμελής καὶ πάντα τρόπον ἄχρηστος, φανερόν ἐπ' αὐτῆς
unmelodic and (in)-every way useless evident upon itself
 ἔσται τῆς πραγματείας.

will-be the study
 Ἐπεὶ δὲ τῶν μελωδουμένων ἐστὶ τὰ μὲν ἀπλᾶ τὰ δὲ
since and of-the sung(-melodies) are the some simple the others
 μετάβολα, περὶ μεταβολῆς ἂν εἶη λεκτέον, πρῶτον μὲν
modulating about modulation would it-be to-be-spoken first indeed
 αὐτὸ τί ποτ' ἐστὶν ἡ μεταβολὴ καὶ πῶς γιγνόμενον—
itself what ever is the modulation and how arising
 λέγω δ' οἶον πάθους τίνος συμβαίνοντος ἐν τῇ τῆς
I-mean and as-it-were (an)-affection certain befalling in the of-the
 μελωδίας τάξει ἔπειτα πόσαι εἰσὶν αἱ πᾶσαι μεταβολαὶ καὶ
melody order then how-many are the all modulations and
 κατὰ πόσα διαστήματα. Περὶ γὰρ τούτων οὐδεὶς οὐδενὸς
at how-many intervals about for these no of-any
 εἴρηται λόγος οὐτ' ἀποδεικτικὸς οὐτ' ἀναπόδεικτος.

has-been-spoken account neither demonstrative nor undemonstrated
 Τελευταῖον δὲ τῶν μερῶν ἐστὶ τὸ περὶ αὐτῆς τῆς
last and of-the parts is that about itself the
 μελοποιίας. Ἐπεὶ γὰρ ἐν τοῖς αὐτοῖς φθόγοις ἀδιαφόροις
melody-making since for in the same notes undifferentiated

οὔσι τὸ καθ' αὐτοὺς πολλαί τε καὶ παντοδαπαὶ μορφαὶ
being the in themselves many both and manifold forms
 μελῶν γίνονται, δῆλον ὅτι παρὰ τὴν χρῆσιν τοῦτο
of-melodies arise clear that because-of the use this
 γένοιτ' ἂν. καλοῦμεν δὲ τοῦτο μελοποιῶν. Ἡ μὲν
would-come-about — we-call and this melody-making the indeed
 οὖν περὶ τὸ ἡρμοσμένον πραγματεία διὰ τῶν εἰρημένων
then about the attuned study through the said
 μερῶν πορευθεῖσα τοιοῦτον λήψεται τέλος.
parts having-traveled such will-take (an)-end

II.5 • THE END OF THE SCIENCE

The goal is to follow the sung melodies with ear and understanding through every difference, for melody exists in becoming. Musical comprehension stands on two things: perception of what is arising, and memory of what has arisen. There is no other way to follow music.

Ὅ δ' ἐστὶ τὸ ξυνιέναι τῶν μελωδουμένων τῇ τε ἀκοῇ
which and is the to-comprehend the sung(-melodies) by-the both hearing
 καὶ τῇ διανοίᾳ κατὰ πᾶσαν διαφορὰν τοῖς γιγνομένοις
and the understanding in every difference the arising(-things)
 παρακολουθεῖν δῆλον— ἐν γενέσει γὰρ δὴ τὸ μέλος,
to-follow-closely (is)-clear in becoming for indeed the melody(-exists)
 καθάπερ καὶ τὰ λοιπὰ μέρη τῆς μουσικῆς— ***
just-as also the remaining parts of-the music (lacuna)
 ἐκ δύο γὰρ τούτων ἡ τῆς μουσικῆς ξύνεσις ἐστίν,
from two for these the of-the music understanding is
 αἰσθήσεως τε καὶ μνήμης· αἰσθάνεσθαι μὲν γὰρ δεῖ τὸ
perception both and memory to-perceive indeed for one-must the

γιγνόμενον, μνημονεύειν δὲ τὸ γεγονός. κατ' ἄλλον δὲ 39
 happening to-remember and the having-happened in-an other and
 τρόπον οὐκ ἔστι τοῖς ἐν τῇ μουσικῇ παρακολουθεῖν.
 way not it-is-possible the(-things) in the music to-follow

II.6 · AGAINST NOTATION AND THE AULOS

Some make notation the goal of harmonics, others the lore of the aulos. Both are wholly astray. Writing a Phrygian melody down no more requires understanding it than writing an iambic line requires knowing what the iambic is; and the signs mark only magnitudes, of which nothing musical becomes known. The judge of attunement is not an instrument but perception: auloi shift and err, and no hole or string holds the attunement unless a hand brings it there.

Ἄ δέ τινες ποιοῦνται τέλη τῆς ἀρμονικῆς καλουμένης
 what(-goals) but some make (as)-ends of-the harmonic so-called
 πραγματείας οἱ μὲν τὸ παρασημαίνεσθαι τὰ μέλη φάσκοντες
 study the some the noting-down(-of) the melodies asserting
 πέρας εἶναι τοῦ ξυνιέναι τῶν μελωδουμένων ἕκαστον,
 (the)-limit to-be of-the comprehending of-the sung(-melodies) each
 οἱ δὲ τὴν περὶ τοὺς αὐλοὺς θεωρίαν καὶ τὸ ἔχειν
 the others the about the auloi theory and the being-able
 εἰπεῖν τίνα τρόπον ἕκαστα τῶν αὐλουμένων καὶ πόθεν
 to-say in-what manner each of-the aulos-pieces and whence
 γίγνεται τὸ δὴ ταῦτα λέγειν παντελῶς ἔστιν ὅλου
 arises the indeed these(-things) to-say utterly is wholly
 τινὸς διημαρτηκός. Οὐ γὰρ ὅτι πέρας τῆς
 (the-mark)-of-someone having-gone-astray not for that (the)-limit of-the
 ἀρμονικῆς ἐπιστήμης ἔστιν ἡ παρασημαντική, ἀλλ' οὐδὲ
 harmonic science is the notation(-art) but not-even
 μέρος οὐδέν, εἰ μὴ καὶ τῆς μετρικῆς τὸ γράψασθαι
 (a)-part at-all if not also of-the metric the to-write-down

τῶν μέτρων ἕκαστον· εἰ δ' ὥσπερ ἐπὶ τούτων οὐκ
of-the meters each if but as in these(-cases) not
 ἀναγκαῖόν ἐστι τὸν δυνάμενον γράψασθαι τὸ ἱαμβικόν
necessary is the(-one) able to-write-down the iambic
 μέτρον καὶ εἰδέναι τί ἐστι τὸ ἱαμβικόν, οὕτως ἔχει καὶ
meter also to-know what is the iambic so it-holds also
 ἐπὶ τῶν μελωδουμένων,— οὐ γὰρ ἀναγκαῖόν ἐστι τὸν
in the sung(-melodies) not for necessary is the(-one)
 γραψάμενον τὸ φρύγιον μέλος καὶ εἰδέναι τί ἐστι τὸ
having-written-down the phrygian melody also to-know what is the
 φρύγιον μέλος— δῆλον ὅτι οὐκ ἂν εἴη τῆς εἰρημένης
phrygian melody clear that not would be of-the said
 ἐπιστήμης πέρας ἢ παρασημαντική. "Οτι δ' ἀληθῆ τὰ
science (the)-limit the notation(-art) that and true the(-things)
 λεγόμενα καὶ ἔστιν ἀναγκαῖον τῷ παρασημαινομένῳ
said and it-is necessary for-the(-one) noting-down
 μόνον τὰ μεγέθη τῶν διαστημάτων διαισθάνεσθαι, φανερόν
only the magnitudes of-the intervals to-discern evident
 γένοιτ' ἂν ἐπισκοπουμένοις. Ὁ γὰρ τιθέμενος σημεῖα
it-would-become — to-those-examining the(-man) for placing signs
 τῶν διαστημάτων οὐ καθ' ἑκάστην τῶν ἐνυπαρχουσῶν
of-the intervals not for each of-the inhering
 αὐτοῖς διαφορῶν ἴδιον τίθεται σημεῖον, οἷον
in-them differences (a)-proper places sign such-as
 εἰ τοῦ διὰ τεσσάρων τυγχάνουσιν αἱ διαίρεσεις οὐσαι
whether of-the through four happen the divisions being
 πλείους ἢ ποιούσιν αἱ τῶν γενῶν διαφοραί, ἢ σχήματα
several which make the of-the genera differences or figures
 πλείονα ποιεῖ ἢ τῆς τῶν ἀσυνθέτων διαστημάτων τάξεως
more makes the of-the of-the incomposite intervals order
 ἀλλοίωσις· τὸν αὐτὸν δὲ λόγον καὶ περὶ τῶν δυνάμεων
alteration the same and account also about the functions

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ἐροῦμεν ἅς αἱ τῶν τετραχόρδων φύσεις ποιοῦσι, τὸ
we-shall-say which the of-the tetrachords natures make the
 γὰρ ὑπερβολαίων καὶ νητῶν καὶ μέσων καὶ ὑπατῶν τῷ
for of-topmost and of-netai and of-middle and of-lowest by-the
 αὐτῷ γράφεται σημείῳ, τὰς δὲ τῶν δυνάμεων διαφορὰς
same is-written sign the but of-the functions differences
 οὐ διορίζει τὰ σημεία ὥστε μέχρι τῶν μεγεθῶν αὐτῶν
not distinguish the signs so-that as-far-as the magnitudes themselves
 κεῖσθαι, πορρωτέρω δὲ μηδέν. Ὅτι δ' οὐδέν ἐστι μέρος
to-lie further and nothing that and nothing is (a)-part
 τῆς συμπάσης ξυνέσεως τὸ διαισθάνεσθαι τῶν μεγεθῶν
of-the entire understanding the discerning of-the magnitudes
 αὐτῶν, ἐλέχθη μὲν πως καὶ ἐν ἀρχῇ, ῥάδιον δὲ
themselves was-said indeed somehow also at (the)-start easy and
 καὶ ἐκ τῶν ῥηθησομένων συνιδεῖν· οὔτε γὰρ τὰς
also from the(-things) to-be-said to-see-together neither for the
 τῶν τετραχόρδων οὔτε τὰς τῶν φθόγγων δυνάμεις οὔτε
of-the tetrachords nor the of-the notes functions nor
 τὰς τῶν γενῶν διαφορὰς οὔτε, ἀπλῶς εἰπεῖν, τὴν τοῦ
the of-the genera differences nor simply to-speak the of-the
 συνθέτου καὶ τὴν τοῦ ἀσυνθέτου διαφορὰν οὔτε τὸ ἀπλοῦν
composite and that of-the incomposite difference nor the simple
 καὶ μεταβολὴν ἔχον οὔτε τοὺς τῶν μελοποιῶν τρόπους
and modulation having nor the of-the melody-makers styles
 οὔτ' ἄλλο οὐδέν, ὡσαύτως εἰπεῖν, δι' αὐτῶν τῶν
nor other anything likewise to-speak through themselves the
 μεγεθῶν γίνεταί γινώριμον. Εἰ μὲν οὖν δι' ἄγνοιαν
magnitudes becomes known if indeed then through ignorance
 τὴν ὑπόληψιν ταύτην ἐσχέκασιν οἱ καλούμενοι ἁρμονικοί,
the supposition this have-held the so-called harmonists
 τὸ μὲν ἥθος οὐκ ἂν εἶεν ἄτοποι, τὴν δὲ ἄγνοιαν
in-the indeed character not would they-be strange the but ignorance

ἰσχυράν τινα καὶ μεγάλην εἶναι παρ' αὐτοῖς ἀναγκαῖον· εἰ
strong some and great to-be with them (is)-necessary if
 δὲ συνορῶντες, ὅτι οὐκ ἔστι τὸ παρασημαίνεσθαι πέρας
but seeing-together that not is the noting-down (the)-limit
 τῆς εἰρημένης ἐπιστήμης, χαριζόμενοι δὲ τοῖς ιδιώταις
of-the said science gratifying but the laymen
 καὶ πειρώμενοι ἀποδιδόναι ὀφθαλμοειδές τι ἔργον ταύτην
and trying to-render (an)-eye-visible some work this
 ἐκτεθείκασι τὴν ὑπόληψιν, μεγάλην ἄν
they-have-set-forth the supposition great would(-I)

- 41 αὖθις αὐτῶν ἀτοπίαν τοῦ τρόπου κατανοοίην· πρῶτον
once-more of-them (the)-absurdity of-the manner observe first
 μέν, ὅτι κριτὴν οἴονται δεῖν κατασκευάζειν τῶν ἐπιστημῶν
indeed that (a)-judge they-think one-must equip of-the sciences
 τὸν ιδιώτην— ἀτοπος γὰρ ἂν εἴη τὸ αὐτὸ μανθάνων τε
the layman absurd for would be the same learning both
 καὶ κρίνων ὁ αὐτός—, ἔπειθ' ὅτι πέρας τοῦ ξυνιέναι
and judging the same(-man) next that (the)-limit of-the comprehending
 τιθέντες φανερὸν τι ἔργον ὡς οἴονται ἀνάπαλιν τιθέασιν·
positing (a)-visible some work as they-think backwards they-place
 παντὸς γὰρ ὀφθαλμοφανοῦς ἔργου πέρας ἐστὶν ἡ ξύνεσις.
of-every for eye-apparent work (the)-limit is the understanding
 τὸ γὰρ ἐπιστατοῦν πᾶσι καὶ κρίνον τοῦτ' ἔστι ἢ
the(-thing) for presiding-over all and judging this is (whether)-either
 τὰς χεῖρας ἢ τὴν φωνὴν ἢ τὸ στόμα ἢ τὸ πνεῦμα ἢ ὅστις
the hands or the voice or the mouth or the breath or whoever
 οἶεται πολὺ τι διαφέρειν τῶν ἀψύχων ὀργάνων οὐκ
thinks(-them) much anything to-differ from-the soulless instruments not
 ὀρθῶς διανοεῖται· εἰ δὲ τὴν ψυχὴν που καταδεδικός ἐστιν
rightly reasons if but in-the soul somewhere sunk-down is
 ἡ ξύνεσις καὶ μὴ πρόχειρον μηδὲ τοῖς πολλοῖς φανερὸν,
the understanding and not ready-to-hand nor to-the many evident

καθάπερ αἱ τε χειρουργίαι καὶ τὰ λοιπὰ τῶν τοιούτων,
just-as the both handicrafts and the rest of-the such-things
οὐ διὰ τοῦτο ἄλλως ὑποληπτέον ἔχειν τὰ εἰρημένα.
not for this otherwise must-one-suppose to-hold the(-things) said
διημαρτηκέναι γὰρ συμβήσεται τάληθους, ἐὰν τὸ μὲν
to-have-strayed for it-will-befall from-the-truth if the indeed
κρῖνον μήτε πέρασ μήτε κύριον ποιῶμεν, τὸ δὲ κρινόμενον
judging(-part) neither limit nor sovereign we-make the but judged(-part)
κύριόν τε καὶ πέρασ. Οὐχ ἦττον δέ ἐστι ταύτης ἢ περὶ τοὺς
sovereign both and limit not less and is than-this the about the
αὐλοὺς ὑπόληψις ἄτοπος· μέγιστον μὲν οὖν καὶ καθόλου
auloi supposition absurd greatest indeed then and in-general
μάλιστα ἄτοπον τῶν ἀμαρτημάτων ἐστὶ τὸ εἰς ὄργανον
most absurd of-the errors is the to (an)-instrument
ἀνάγειν τὴν τοῦ ἡρμοσμένου φύσιν· οὐδὲν γὰρ τῶν
referring the of-the attuned nature nothing for of-the(-properties)
τοῖς ὀργάνοις ὑπαρχόντων τοιοῦτόν ἐστι τὸ ἡρμοσμένον
to-the instruments belonging such is the attuned
οὐδὲ τοιαύτην τάξιν ἔχον. οὐ γάρ, ὅτι ὁ αὐλὸς
nor such order having not for(-is-it-true) that the aulos
τρυπήματά τε καὶ κοιλίας ἔχει καὶ τὰ λοιπὰ τῶν τοιούτων,
holes both and bores has and the rest of-the such-things
ὅτι δὲ χειρουργίαν τὴν μὲν ἀπὸ τῶν χειρῶν τὴν δ' ἀπὸ 42
that and handiwork the one from the hands the other from
τῶν λοιπῶν μερῶν οἷς ἐπιτείνειν τε καὶ ἀνιέναι πέφυκε,
the remaining parts by-which to-tighten both and to-slacken it-is-fitted
διὰ τοῦτο συμφωνεῖ διὰ τεσσάρων ἢ διὰ πέντε
through this it-concords through four or through five
ἢτοι διὰ πασῶν, ἢ τῶν ἄλλων διαστημάτων ἕκαστον
either through all or of-the other intervals each
λαμβάνει τὸ προσήκον μέγεθος. Πάντων γὰρ τούτων
takes the befitting magnitude (with)-all for these

ὑπαρχόντων οὐδὲν ἦττον τὰ μὲν πλείω διαμαρτάνουσιν
belonging none the-less for-the indeed most(-part) miss
 οἱ αὐληταὶ τῆς τοῦ ἡρμοσμένου τάξεως, ὀλίγα δ' ἐστὶν ἃ
the aulos-players of-the of-the attuned order few and are which
 τυγχάνουσι ποιοῦντες πάντα ταῦτα, καὶ γὰρ ἀφαιρῶντες
they-chance making all these(-things) both for drawing-away
 καὶ παραβάλλοντες καὶ τῷ πνεύματι ἐπιτείνοντες καὶ
and closing-in and with-the breath tightening and
 ἀνιέντες καὶ ταῖς ἄλλαις αἰτίαις ἐνεργοῦντες. ὥστ' εἶναι
slackening and by-the other causes working so-as to-be
 φανερόν, ὅτι οὐδὲν διαφέρει λέγειν τὸ καλῶς ἐν τοῖς
evident that in-nothing it-differs to-speak(-of) the well in the
 αὐλοῖς τοῦ κακῶς· οὐκ ἔδει δὲ τοῦτο συμβαίνειν, εἴπερ
auloi from-the badly not ought and this to-befall if-indeed
 τι ὄφελος ἦν τῆς εἰς ὄργανον τοῦ ἡρμοσμένου ἀναγωγῆς,
any use was of-the to (an)-instrument of-the attuned referring
 ἀλλ' ἅμα τ' εἰς τοὺς αὐλοὺς ἀνήχθαι τὸ μέλος
but at-once both to the auloi to-have-been-referred the melody
 καὶ εὐθὺς ἀστραβὲς εἶναι καὶ ἀναμάρτητον καὶ ὀρθόν.
and straightway unwarped to-be and faultless and right
 ἀλλὰ γὰρ οὐτ' αὐλοὶ οὔτε τῶν ἄλλων οὔθεν ὀργάνων
but for neither auloi nor of-the other any instruments
 ποτὲ βεβαιώσει τὴν τοῦ ἡρμοσμένου φύσιν· τάξιν γάρ
ever will-secure the of-the attuned nature (an)-order for
 τινα καθόλου τῆς φύσεως τοῦ ἡρμοσμένου θαυμαστήν
certain universal of-the nature of-the attuned wonderful
 μεταλαμβάνει τῶν ὀργάνων ἕκαστον ἐφ' ὅσον δύναται,
partakes of-the instruments each so-far-as as-much-as it-can
 τῆς αἰσθήσεως αὐτοῖς ἐπιστατούσης πρὸς ἣν ἀνάγεται
the perception over-them presiding toward which is-referred
 καὶ ταῦτα καὶ τὰ λοιπὰ τῶν κατὰ μουσικὴν. Εἰ
both these and the rest of-the(-things) concerning music if

δέ τις οἶεται, ὅτι τὰ τρυπήματα ὁρᾷ ταυτὰ ἐκάστης
and someone thinks that the holes he-sees the-same each
 ἡμέρας ἢ τὰς χορδὰς ἐντεταμένας τὰς αὐτάς, διὰ τοῦθ'
day or the strings stretched the same through this
 εὐρήσειν τὸ ἡρμοσμένον ἐν αὐτοῖς διαμένον τε καὶ τὴν
will-find the attuned in them abiding both and the
 αὐτὴν τάξιν διασώζον, παντελῶς εὐήθης· ὥσπερ γὰρ ἐν
same order preserving (he-is)-utterly simple as for in
 ταῖς χορδαῖς οὐκ ἔστι τὸ ἡρμοσμένον, ἐὰν μή τις αὐτὸ 43
the strings not is the attuned if not someone it
 διὰ τῆς χειρουργίας προσαγαγὼν ἀρμόσεται, οὕτως
through the bandiwork bringing-to attune-it so
 οὐδὲ ἐν τοῖς τρυπήμασιν, ἐὰν μή τις αὐτὸ χειρουργία
neither in the holes if not someone it by-bandiwork
 προσαγαγὼν ἀρμόσεται. ὅτι δ' οὐδὲν τῶν ὀργάνων αὐτὸ
bringing-to attune-it that and none of-the instruments itself
 ἀρμόττεται ἀλλὰ ἡ αἴσθησίς ἐστιν ἡ τούτου κυρία, δηλον
attunes-itself but the perception is the of-this sovereign clear
 ὅτι οὐδὲ λόγου δεῖται, φανερόν γάρ. Θαυμαστὸν δ' εἰ
that not-even argument it-needs evident for(-it-is) wonderful and if
 μηδ' εἰς τὰ τοιαῦτα βλέποντες ἀφίστανται τῆς τοιαύτης
not-even at the such(-facts) looking they-withdraw from-the such
 ὑπολήψεως ὁρῶντες ὅτι κινοῦνται οἱ αὐλοὶ καὶ οὐδέποθ'
supposition seeing that move the auloi and never
 ὡσαύτως ἔχουσιν ἀλλ' ἕκαστα τῶν αὐλουμένων μεταβάλλει
in-the-same-way hold but each of-the aulos-pieces changes
 κατὰ τὰς αἰτίας ἀφ' ὧν αὐλεῖται. Σχεδὸν δὴ φανερόν,
according-to the causes from which it-is-played nearly indeed evident
 ὅτι δι' οὐδεμίαν αἰτίαν εἰς τοὺς αὐλοὺς ἀνακτέον τὸ μέλος,
that for no cause to the auloi must-be-referred the melody
 οὔτε γὰρ βεβαιώσει τὴν τοῦ ἡρμοσμένου τάξιν τὸ εἰρημένον
neither for it-will-secure the of-the attuned order the said

ὄργανον οὐτ', εἴ τις ᾤήθη δεῖν εἰς ὄργανόν τι
instrument nor if someone thought (it)-needful to (an)-instrument some
 ποιεῖσθαι τὴν ἀναγωγὴν, εἰς τοὺς αὐλοὺς ἦν ποιητέον,
to-make the reference to the auloi was(-it) to-be-made
 ἐπειδὴ μάλιστα πλανᾶται καὶ κατὰ τὴν αὐλοποιίαν καὶ
since most it-wanders both in the aulos-making and
 κατὰ τὴν χειρουργίαν καὶ κατὰ τὴν ἰδίαν φύσιν.
in the handiwork and in the proper nature

II.7 · THE PRINCIPLES RESTATED

Before the Elements proper, three things must hold: the appearances well taken, the prior and posterior rightly distinguished, and the consequences correctly seen. A principle must be both true and evident — what demands demonstration is no principle. One must neither fall over the border into physics, beginning from sound as moving air, nor turn back too soon and leave the proper ground out.

Ἄ μὲν οὖν προδιέλθοι τις ἂν περὶ τῆς
what(-things) indeed then might-go-through-beforehand one — about the
 ἀρμονικῆς καλουμένης πραγματείας σχεδὸν ἐστὶ ταῦτα·
harmonic so-called study nearly are these
 μέλλοντας δ' ἐπιχειρεῖν τῇ περὶ τὰ στοιχεῖα πραγματεία
being-about and to-attempt the concerning the Elements study
 δεῖ προδιανοηθῆναι τὰ τοιάδε· ὅτι οὐκ ἐνδέχεται καλῶς
one-must think-out-beforehand the following that not it-is-possible well
 αὐτὴν διεξελεῖν μὴ προϋπαρξάντων τριῶν τῶν
it to-go-through (there-)not pre-existing three the(-things)
 ῥηθησομένων· πρῶτον μὲν αὐτῶν τῶν φαινομένων καλῶς
to-be-stated first indeed themselves the appearances well
 ληφθέντων, ἔπειτα διορισθέντων ἐν
having-been-taken then having-been-distinguished among

αὐτοῖς τῶν τε προτέρων καὶ τῶν ὑστέρων ὀρθῶς, τρίτον 44
them the both prior and the posterior rightly third
 δὲ τοῦ συμβαίνοντός τε καὶ ὁμολογουμένου κατὰ τρόπον
and the following both and agreeing in-due manner
 συνοφθέντος. Ἐπεὶ δὲ πάσης ἐπιστήμης, ἥτις ἐκ
having-been-seen-together since and of-every science which from
 προβλημάτων πλειόνων συνέστηκεν, ἀρχὰς προσήκον ἐστι
problems several is-composed principles fitting it-is
 λαβεῖν ἐξ ὧν δειχθήσεται τὰ μετὰ τὰς ἀρχάς,
to-take from which will-be-shown the(-things) after the principles
 ἀναγκαῖον ἂν εἴη λαμβάνειν προσέχοντας δύο τοῖσδε·
necessary would it-be to-take attending to-two these-things
 πρῶτον μὲν ὅπως ἀληθές τε καὶ φαινόμενον ἕκαστον
first indeed that true both and apparent each
 ἔσται τῶν ἀρχοειδῶν προβλημάτων, ἔπειθ' ὅπως τοιοῦτον
shall-be of-the principle-like problems next that such
 οἶον ἐν πρώτοις ὑπὸ τῆς αἰσθήσεως συνοραῖσθαι τῶν
as among first(-things) by the perception to-be-seen-together of-the
 τῆς ἀρμονικῆς πραγματείας μερῶν· τὸ γάρ πως
of-the harmonic study parts the(-thing) for somehow
 ἀπαιτοῦν ἀπόδειξιν οὐκ ἔστιν ἀρχοειδές. Καθόλου δ'
demanding demonstration not is principle-like in-general and
 ἐν τῷ ἄρχεσθαι παρατηρητέον, ὅπως μήτ' εἰς τὴν
in the beginning must-be-watched that neither into the
 ὑπερορίαν ἐμπίπτωμεν ἀπὸ τινος φωνῆς ἢ κινήσεως
beyond-the-border we-fall from some sound or motion
 ἀέρος ἀρχόμενοι, μήτ' αὖ κάμπτοντες ἐντὸς πολλὰ τῶν
of-air beginning nor again bending within many of-the
 οἰκείων ἀπολιμπάνωμεν ***.
proper(-matters) we-leave-out (lacuna)

Three genera of melody are laid down: diatonic, chroma, and harmonia. Eight sizes of concord are posited, the fourth the least by melody's own nature; whatever lies between fourth and fifth is discordant. Any concord added to the octave yields a concord — the property of that concord alone. The tone is the difference of fifth and fourth; its half, third, and quarter are sung, and nothing smaller.

Τρία γένη τῶν μελωδουμένων ἔστω· διάτονον χρώμα
three genera of-the sung(-melodies) let-there-be diatonic chroma
 ἁρμονία. αἱ μὲν οὖν διαφοραὶ τούτων ὕστερον ῥηθήσονται·
harmonia the indeed then differences of-these later will-be-stated
 τοῦτο δ' αὐτὸ ἐκκείσθω, ὅτι πᾶν μέλος ἔσται ἢτοι
this but itself let-be-set-out that every melody will-be either
 διάτονον ἢ χρωματικὸν ἢ ἐναρμόνιον ἢ μικτὸν ἐκ τούτων
diatonic or chromatic or enharmonic or mixed from these
 ἢ κοινὸν τούτων.

or common to-these

Δευτέρα δ' ἐστὶ διαίρεσις τῶν διαστημάτων εἶναι τὰ μὲν
second and is (a)-division of-the intervals to-be the some
 σύμφωνα τὰ δὲ διάφωνα. γνωριμώταται μὲν δοκοῦσιν
concordant the others discordant best-known indeed seem
 εἶναι αὗται δύο τῶν διαστηματικῶν διαφορῶν, ἣ τε
to-be these two of-the intervallic differences in-which both
 μεγέθει διαφέρουσιν ἀλλήλων καὶ τὰ σύμφωνα τῶν
in-magnitude they-differ from-one-another and the concordant from-the
 διαφώνων· περιέχεται δ' ἡ ὑστέρα ῥηθεῖσα διαφορὰ τῇ
discordant is-embraced and the later stated difference by-the
 προτέρα, πᾶν γὰρ
former every for

σύμφωνον παντὸς διαφώνου διαφέρει μέγεθι. Ἐπεὶ δὲ
concordant from-every discordant differs in-magnitude since and
 τῶν συμφώνων πλείους εἰς πρὸς ἄλληλα διαφοραί, μία
of-the concords several are toward one-another differences one
 τις ἢ γνωριμωτάτη αὐτῶν ἐκκείσθω πρώτη· αὕτη δ'
certain the best-known of-them let-be-set-out first this and
 ἐστὶν ἢ κατὰ μέγεθος. Ἐστω δὴ τῶν συμφώνων ὀκτὼ
is that by magnitude let-there-be indeed of-the concords eight
 μεγέθη· ἐλάχιστον μὲν τὸ διὰ τεσσάρων— συμβαίνει δὲ
magnitudes least indeed the through four it-befalls and
 τοῦτο αὐτῇ τῇ τοῦ μέλους φύσει ἐλάχιστον εἶναι· σημείον
this by-itself the of-the melody nature least to-be (a)-sign
 δὲ τὸ μελωδεῖν μὲν ἡμᾶς πολλὰ τοῦ διὰ τεσσάρων
and the singing indeed we many than-the through four
 ἐλάττω, πάντα μέντοι διάφωνα—. δεύτερον δὲ τὸ
smaller(-intervals) all however discordant second and the
 διὰ πέντε, ὃ τι δ' ἂν τούτων ἀνὰ μέσον ἦ
through five what ever and — of-these between (the)-middle may-be
 μέγεθος πᾶν ἔσται διάφωνον. τρίτον δ' ἐκ τῶν εἰρημένων
magnitude every will-be discordant third and from the said
 συμφώνων σύνθετον τὸ διὰ πασῶν, τὰ δὲ τούτων
concords composite the through all the(-magnitudes) and of-these
 ἀνὰ μέσον διάφωνα ἔσται. Ταῦτα μὲν οὖν λέγομεν ἃ
between (the)-middle discordant will-be these indeed then we-say which
 παρὰ τῶν ἔμπροσθεν παρειλήφαμεν, περὶ δὲ τῶν λοιπῶν
from the men-before we-have-received about and the rest
 ἡμῖν αὐτοῖς διοριστέον. Πρῶτον μὲν οὖν λεκτέον, ὅτι
for-us ourselves must-be-determined first indeed then must-be-said that
 πρὸς τῷ διὰ πασῶν πᾶν σύμφωνον προστιθέμενον
to the through all every concordant added
 διάστημα τὸ γιγνόμενον ἐξ αὐτῶν μέγεθος σύμφωνον ποιεῖ.
interval the arising from them magnitude concordant makes

καὶ ἔστιν ἴδιον τοῦτο τὸ πάθος τοῦ συμφώνου τούτου, καὶ
and is proper this the property of-the concord this also
 γὰρ ἐλάττωνος προστεθέντος καὶ ἴσου καὶ μείζονος τὸ
for (a)-smaller having-been-added and (an)-equal and (a)-greater the
 γιγνόμενον ἐκ τῆς συνθέσεως σύμφωνον γίγνεται τοῖς δὲ
arising from the compounding concordant becomes to-the but
 πρώτοις συμφώνοις οὐ συμβαίνει τοῦτο, οὔτε γὰρ τὸ ἴσον
first concords not befalls this neither for the equal
 ἑκατέρῳ αὐτῶν συντεθὲν τὸ ὅλον σύμφωνον ποιεῖ οὔτε τὸ ἐξ
to-each of-them compounded the whole concordant makes nor that from
 ἑκατέρου αὐτῶν καὶ τοῦ διὰ πασῶν συγκείμενον, ἀλλ' αἰεὶ
each of-them and the through all composed but always
 διαφωνήσει τὸ ἐκ τῶν εἰρημένων συμφώνων συγκείμενον.
will-be-discordant the from the said concords composed

46 Τόνος δ' ἐστὶν ὃ τὸ διὰ πέντε τοῦ διὰ
(the)-tone and is that-by-which the through five than-the through
 τεσσάρων μείζον· τὸ δὲ διὰ τεσσάρων δύο τόνων καὶ
four (is)-greater the and through four (is)-two tones and
 ἡμίσεος. Τῶν δὲ τοῦ τόνου μερῶν μελωδεῖται τὸ ἥμισυ,
a-half of-the and of-the tone parts is-sung the half
 ὃ καλεῖται ἡμιτόνιον, καὶ τὸ τρίτον μέρος, ὃ καλεῖται
which is-called semitone and the third part which is-called
 δίεσις χρωματικὴ ἐλαχίστη, καὶ τὸ τέταρτον, ὃ καλεῖται
diesis chromatic least and the fourth which is-called
 δίεσις ἐναρμόνιος ἐλαχίστη· τούτου δ' ἔλαττον οὐδὲν
diesis enharmonic least than-this and smaller no
 μελωδεῖται διάστημα. Δεῖ δὲ πρῶτον μὲν τοῦτο αὐτὸ
is-sung interval must and first indeed this itself
 μὴ ἀγνοεῖν, ὅτι πολλοὶ ἤδη διήμαρτον ὑπολαβόντες
not one-fail-to-know that many already have-strayed supposing
 ἡμᾶς λέγειν ὅτι ὁ τόνος εἰς τρία ἢ τέσσαρα ἴσα
us to-say that the tone into three or four equal(-parts)

διαιρούμενος μελωδεῖται. συνέβη δ' αὐτοῖς τοῦτο παρὰ τὸ
 divided is-sung befell and them this because-of the
 μὴ κατανοεῖν ὅτι ἕτερόν ἐστι τό τε λαβεῖν τρίτον μέρος
 not observing that different it-is the both to-take (a)-third part
 τόνου καὶ τὸ διελόντα εἰς τρία τόνον μελωδεῖν. ἔπειτα
 of-a-tone and the having-divided into three (a)-tone to-sing next
 ἀπλῶς μὲν οὐθὲν ὑπολαμβάνομεν εἶναι διάστημα ἐλάχιστον.
 simply indeed nothing we-suppose to-be interval least

II.9 · THE RANGES OF THE MOVING NOTES

In the tetrachord from mese to hypate the extremes stand and the middle notes move: the lichanos through a tone, the parhypate through a diesis. Against those who want a new name for every position, Aristoxenus answers that notes differ by function, not by the magnitudes of their intervals: the ear sets lichanos and parhypate between mese and hypate wherever they stand, and the lichanoi are infinite in number.

Αἱ δὲ τῶν γενῶν διαφοραὶ λαμβάνονται ἐν τετραχόρδῳ
 the and of-the genera differences are-taken in (a)-tetrachord
 τοιούτῳ οἶόν ἐστι τὸ ἀπὸ μέσης ἐφ' ὑπάτην, τῶν μὲν
 such as is that from mese to hypate the indeed
 ἄκρων μενόντων, τῶν δὲ μέσων κινουμένων ὅτε
 extremes abiding the and middle(-notes) moving at-one-time
 μὲν ἀμφοτέρων ὅτε δὲ θατέρου. Ἐπεὶ δ' ἀναγκαῖον
 indeed both at-another and one-of-the-two since and (it-is)-necessary
 τὸν κινούμενον φθόγγον ἐν τόπῳ τινὶ κινεῖσθαι, ληπτέος
 the moving note in (a)-region certain to-move must-be-taken
 ἂν εἴη τόπος ὠρισμένος ἐκατέρου τῶν εἰρημένων
 — would-be (a)-region determined of-each of-the said
 φθόγγων. φαίνεται δὴ συντονωτάτη μὲν εἶναι λιχανὸς
 notes it-appears indeed tensest indeed to-be (a)-lichanos

ἡ τόνον ἀπὸ μέσης ἀπέχουσα, ποιῇ δ' αὕτη διάτονον
the(-one) (a)-tone from mese standing-off makes and this (the)-diatonic
 γένος, βαρυτάτη δ' ἡ δίτονος, γίγνεται δ' αὕτη
genus heaviest and the two-tone(-one) becomes and this
 ἐναρμόνιος· ὥστ' εἶναι φανερόν ἐκ τούτων, ὅτι τονιαίος
enharmonic so-as to-be evident from these that tone-sized
 ἐστίν ὁ τῆς λιχανοῦ τόπος. τὸ δὲ παρυπάτης καὶ ὑπάτης
is the of-the lichanos region the and of-parhybate and hypate
 διάστημα ἑλάττων μὲν ὅτι οὐκ ἂν γένοιτο διέσεως
interval smaller indeed that not would become than-a-diesis
 ἐναρμονίου φανερόν, ἐπειδὴ πάντων τῶν μελωδουμένων
enharmonic (is)-evident since of-all the sung(-intervals)
 47 ἐλάχιστόν ἐστι διέσις ἐναρμόνιος· ὅτι δὲ καὶ τοῦτο εἰς τὸ
least is (the)-diesis enharmonic that and also this to the
 διπλάσιον αὖξεται, κατανοητέον. ὅταν γὰρ ἐπὶ τὴν αὐτὴν
double increases must-be-observed when for upon the same
 τάσιν ἀφίκωνται ἢ τε λιχανὸς ἀνιεμένη καὶ ἡ παρυπάτη
tension arrive the both lichanos being-slackened and the parhybate
 ἐπιτεινομένη ὀρίζεσθαι δοκεῖ ἐκατέρας ὁ τόπος. ὥστ' εἶναι
being-tightened to-be-bounded seems of-each the region so-as to-be
 φανερόν, ὅτι οὐ μείζων διέσεως ἐλαχίστης ἐστίν ὁ τῆς
evident that not greater than-a-diesis least is the of-the
 παρυπάτης τόπος. Ἦδη δέ τινες θαυμάζουσι πῶς ἐστι
parhybate region already and some wonder how there-is
 λιχανὸς κινηθέντος ἑνὸς ὅτου δήποτε τῶν μέσης
(a)-lichanos having-moved(-when) one of-whatever kind of-the of-mese
 καὶ λιχανοῦ διαστημάτων· διὰ τί γὰρ μέσης μὲν καὶ
and lichanos intervals through what for of-mese indeed and
 παραμέσης ἓν ἐστι διάστημα καὶ πάλιν αὖ μέσης τε καὶ
paramese one is interval and again in-turn of-mese both and
 ὑπάτης καὶ τῶν ἄλλων ὅσοι μὴ κινοῦνται τῶν φθόγγων,
hypate and of-the others as-many-as not move of-the notes

τὰ δὲ μέσης καὶ λιχανοῦ διαστήματα πολλὰ θετέον
the but of-mese and lichanos intervals many must-be-posit-ed
 εἶναι· κρεῖττον γὰρ τῶν φθόγγων τὰ ὀνόματα κινεῖν μηκέτι
to-be better for of-the notes the names to-move no-longer
 καλοῦντας λιχανοὺς τὰς λοιπὰς, ἐπειδὰν ἡ δίτονος λιχανὸς
calling lichanoi the rest whenever the two-tone lichanos
 κληθῇ ἢ τῶν ἄλλων μία ἥτις ποτ' οὖν. δεῖν γὰρ
be-named or of-the others one whichever ever then (saying-that)-must for
 ἑτέρους εἶναι φθόγγους τοὺς τὸ ἕτερον μέγεθος ὀρίζοντας·
different to-be notes those the different magnitude bounding
 ὡσαύτως δὲ δεῖν ἔχειν καὶ τὰ ἀντιστρέφοντα. τὰ γὰρ
likewise and must to-hold also the corresponding(-notes) the for
 ἴσα τῶν μεγεθῶν τοῖς αὐτοῖς ὀνόμασι περιληπτέον εἶναι.
equal of-the magnitudes by-the same names must-be-embraced to-be
 Πρὸς δὴ ταῦτα τοιοῦτοί τινες ἐλέχθησαν λόγοι· πρῶτον
against indeed these such some were-spoken arguments first
 μὲν ὅτι τὸ ἀξιοῦν τοὺς διαφέροντας ἀλλήλων φθόγγους
indeed that the demanding the differing from-one-another notes
 ἴδιον μέγεθος ἔχειν διαστήματος μέγα τι κινεῖν ἐστίν·
(a)-proper magnitude to-have of-interval great something to-move is
 ὁρῶμεν γὰρ ὅτι νήτη μὲν καὶ μέση παρανήτης καὶ λιχανοῦ
we-see for that nete indeed and mese from-paranete and lichanos
 διαφέρει κατὰ τὴν δύναμιν καὶ πάλιν αὖ παρανήτη τε
differ in the function and again in-turn paranete both
 καὶ λιχανὸς τρίτης τε καὶ παρυπάτης, ὡσαύτως δὲ καὶ
and lichanos from-trite both and parhypate likewise and also
 οὗτοι παραμέσης τε καὶ ὑπάτης—καὶ διὰ ταύτην τὴν
these(-differ) from-paramese both and hypate and through this the
 αἰτίαν ἴδια κεῖται ὀνόματα ἐκάστοις αὐτῶν—, διάστημα
cause proper lie names for-each of-them (an)-interval
 δ' αὐτοῖς πᾶσιν ὑπόκειται ἓν, τὸ διὰ πέντε, ὥσθ' ὅτι
but for-them all underlies one the through five so-that that

μὲν οὐχ οἶόν τ' αἰὲν τῇ τῶν φθόγγων διαφορᾷ
indeed not possible (it-is) always for-the of-the notes difference
 τὴν τῶν διαστηματικῶν μεγεθῶν διαφορὰν ἀκολουθεῖν
the of-the intervallic magnitudes difference to-follow
 φανερόν. "Ὅτι δ' οὐδὲ τὸναντίον ἀκολουθεῖν θετέον,
(is)-evident that and neither the-converse to-follow must-be-posit-ed
 κατανοήσειεν ἂν τις ἐκ τῶν ῥηθησομένων. Πρῶτον
might-observe — one from the(-things) to-be-said first
 μὲν οὖν εἰ καὶ καθ' ἐκάστην αὐξήσιν τε καὶ ἐλάττωσιν
indeed then if even at each increase both and decrease
 τῶν περὶ τὸ πυκνὸν γιγνομένων ἴδια ζητήσομεν ὀνόματα,
of-those about the pyknon arising proper we-shall-see names
 δῆλον ὅτι ἀπείρων ὀνομάτων δεησόμεθα, ἐπειδὴ περὶ ὁ
clear that of-boundless names we-shall-have-need since-indeed the
 τῆς λιχανοῦ τόπος εἰς ἀπείρους τέμνεται τομάς. Ὡς
of-the lichanos region into boundless is-cut cuts as
 ἀληθῶς γὰρ τίνι ἂν τις προσθεῖτο τῶν ἀμφισβητούντων
truly for to-whom would one assent of-those disputing
 περὶ τὰς τῶν γενῶν χροάς; οὐ γὰρ δὴ πρὸς τὴν
about the of-the genera shades not for indeed toward the
 αὐτὴν διαίρεσιν βλέποντες πάντες οὔτε τὸ χρῶμα οὔτε
same division looking all either the chroma or
 τὴν ἀρμονίαν ἀρμόττονται, ὥστε τί μᾶλλον τὴν δίτονον
the harmonia they-do-tune so-that why rather the two-tone
 λιχανὸν λεκτέον ἢ τὴν μικρῶ συντονωτέραν; ἀρμονία
lichanos must-be-called than the by-a-little tenser harmonia
 μὲν γὰρ εἶναι τῇ αἰσθήσει κατ' ἀμφοτέρας τὰς διαιρέσεις
indeed for to-be to-the perception in both the divisions
 φαίνεται, τὰ δὲ μεγέθη τῶν διαστημάτων δῆλον ὅτι οὐ
it-appears the but magnitudes of-the intervals (is)-clear that not
 ταυτὰ ἐν ἐκατέρᾳ τῶν διαιρέσεων.
the-same in each of-the divisions

ἔπειτα πειρώμενοι παρατηρεῖν τό τ' ἴσον καὶ τὸ ἄνισον
then trying to-watch-closely the both equal and the unequal
 ἀποβαλοῦμεν τὴν τοῦ ὁμοίου τε καὶ ἀνομοίου διάγνωσιν,
we-shall-throw-away the of-the like both and unlike discernment
 ὥστε μὴδὲ πυκνὸν καλεῖν ἔξω ἐνὸς μεγέθους, δηλὸν
so-that not-even pyknon to-call outside one magnitude clear
 δ' ὅτι μὴδ' ἁρμονίαν μὴδὲ χρῶμα, τόπῳ γάρ τινι καὶ
and that neither harmonia nor chroma by-region for some also
 ταῦτα διώρισται. Δηλὸν δ' ὅτι οὐδὲν τούτων ἐστὶ πρὸς
these are-defined clear and that none of-these is toward
 τὴν τῆς αἰσθήσεως φαντασίαν· ἐκείνη μὲν γὰρ εἰς
the of-the perception impression that(-faculty) indeed for to
 ὁμοιότητα ἐνός τινος εἵδους βλέπουσα τό τε χρῶμα λέγει
(the)-likeness of-one certain form looking the both chroma calls(-it)
 καὶ τὴν ἁρμονίαν ἀλλ' οὐκ εἰς ἐνός τινος διαστήματος
and the harmonia but not to of-one certain interval
 μέγεθος, λέγω δὲ πυκνοῦ μὲν εἶδος τιθεῖσα ἕως ἂν
magnitude I-mean and of-pyknon indeed (a)-form positing so-long-as ever
 τὰ δύο διαστήματα τοῦ ἐνὸς ἐλάττω τόπον κατέχη—
the two intervals than-the one (a)-smaller region occupy
 ἐμφαίνεται γὰρ ἐν πᾶσι τοῖς πυκνοῖς πυκνοῦ τινὸς φωνῇ
there-shows-forth for in all the pykna of-pyknon a-certain voice
 καίπερ ἀνίσων αὐτῶν ὄντων— χρώματος δὲ εἶδος ἕως
although unequal they being of-chroma and (a)-form so-long
 ἂν τὸ χρωματικὸν ἦθος ἐμφαίνεται. ἰδίαν γὰρ δὴ
as the chromatic character shows-forth (a)-proper for indeed
 κίνησιν ἕκαστον τῶν γενῶν κινεῖται πρὸς τὴν αἴσθησιν
motion each of-the genera moves toward the perception
 οὐ μιᾷ χρώμενον τετραχόρδου διαιρέσει ἀλλὰ
not one using of-tetrachord division but

πολλαῖς. ὥστ' εἶναι φανερόν, ὅτι κινουμένων τῶν μεγεθῶν
 many so-as to-be evident that moving the magnitudes
 συμβαίνει μένειν τὸ γένος, οὐ γὰρ ὁμοίως κινεῖται τῶν
 it-befalls to-abide the genus not for likewise it-moves the
 μεγεθῶν κινουμένων μέχρι τινός, ἀλλὰ διαμένει· τούτου δὲ
 magnitudes moving up-to a-point but it-abides this and
 μένοντος εἰκὸς καὶ τὰς τῶν φθόγγων δυνάμεις διαμένειν. τὸ
 abiding likely also the of-the notes functions to-abide the
 γὰρ εἶδος τοῦ τετραχόρδου ταυτό· διόπερ καὶ τοὺς τῶν
 for form of-the tetrachord (is)-the-same wherefore also the of-the
 διαστημάτων ὄρους ἀναγκαῖον εἰπεῖν τοὺς αὐτούς. Καθόλου
 intervals bounds necessary to-call the same in-general
 δ' εἰπεῖν, ἕως ἂν μένῃ τὰ τῶν περιεχόντων ὀνόματα καὶ
 and to-speak so-long-as ever may-abide the of-the enclosing(-notes) names and
 λέγεται αὐτῶν ἢ μὲν ὀξυτέρα μέση ὑπάτῃ δ' ἢ βαρυτέρα,
 be-called of-them the one sharper mese hypate and the heavier
 διαμενεῖ καὶ τὰ τῶν περιεχομένων ὀνόματα καὶ ῥηθήσεται
 will-abide also the of-the enclosed names and will-be-called
 αὐτῶν ἢ μὲν ὀξυτέρα λιχανὸς ἢ δὲ βαρυτέρα παρυπάτῃ,
 of-them the one sharper lichanos the other heavier parhypate
 ἀεὶ γὰρ τοὺς μεταξὺ μέσης τε καὶ ὑπάτης λιχανόν τε
 always for the(-notes) between mese both and hypate lichanos both
 καὶ παρυπάτῃ ἢ αἰσθησις τίθησιν. Τὸ δ' ἀξιοῦν ἢ τὰ
 and parhypate the perception places the but demanding either the
 ἴσα διαστήματα τοῖς αὐτοῖς ὀνόμασι ὀρίζεσθαι ἢ τὰ ἄνισα
 equal intervals by-the same names to-be-bounded or the unequal
 ἐτέροις μάχεσθαι τοῖς φαινομένοις ἐστί· τό τε γὰρ ὑπάτης
 by-different to-fight with-the appearances is the both for of-hypate
 καὶ παρυπάτῃ τῷ παρυπάτῃ πλεονάκις ἴσον μελωδεῖται ἢ
 and of-parhypate that of-parhypate more-often equal is-sung than

καὶ λιχανοῦ μελωδεῖται ποτὲ ἴσον ποτὲ ἄνισον· ὅτι δ' 50
and of-lichanos it-is-sung sometimes equal sometimes unequal that and
οὐκ ἐνδέχεται δύο διαστημάτων ἑξῆς κειμένων τοῖς
not it-is-possible (of-)two intervals in-succession lying by-the
αὐτοῖς ὀνόμασιν ἑκάτερον αὐτῶν περιέχεσθαι φανερόν,
same names each of-them to-be-embraced (is)-evident
εἴπερ μὴ μέλλοι ὁ μέσος δύο ἔξειν ὀνόματα. Δῆλον
if not should the middle(-note) two have names clear
δὲ καὶ ἐπὶ τῶν ἀνίσων τὸ ἄτοπον· οὐ γὰρ δυνατόν
and also upon the unequal the absurdity not for possible
διαμένοντος τοῦ ἑτέρου τῶν ὀνομάτων τὸ ἕτερον κινεῖσθαι,
abiding the one of-the names the other to-move
πρὸς ἄλληλα γὰρ λέλεκται· ὥσπερ γὰρ ὁ τέταρτος
relative to-one-another for they-are-spoken as for the fourth
ἀπὸ τῆς μέσης ὑπάτη πρὸς μέσῃν λέγεται, οὕτως ὁ
from the mese hypate relative-to mese is-called so the
ἐχόμενος τῆς μέσης λιχανὸς πρὸς μέσῃν λέγεται. Πρὸς
next-to the mese lichanos relative-to mese is-called against
μὲν οὖν ταύτην τὴν διαπορίαν τοσαῦτα εἰρήσθω.
indeed then this the perplexity so-much let-be-said

II.10 • THE SIX DIVISIONS OF THE TETRACHORD

The pyknon is defined, and the familiar divisions counted: one enharmonic, three chromatic — soft, hemiolic, tone-sized — and two diatonic, soft and tense. Six lichanoi result and four parhypatai, of which the enharmonic is proper to its genus and three are common. The melodic and unmelodic pairings of parhypate and lichanos are marked off.

Πυκνὸν δὲ λεγέσθω μέχρι τούτου ἕως ἂν ἐν
 (a)-pyknon and let-be-called up-to this-point so-long ever(-as) in
 τετραχόρδῳ διὰ τεσσάρων συμφωνούντων τῶν ἄκρων
 (a)-tetrachord through four concordng the extremes
 τὰ δύο διαστήματα συντεθέντα τοῦ ἐνὸς ἐλάττω τόπον
 the two intervals compounded than-the one (a)-smaller region
 κατέχει. Τετραχόρδου δέ εἰσι διαιρέσεις ἐξάιρετοί τε καὶ
 occupy of-a-tetrachord and are divisions select both and
 γνώριμοι αὗται αἱ εἰσιν εἰς γνῶριμα διαιρούμεναι μεγέθη
 familiar these which are into familiar divided magnitudes
 διαστημάτων. Μία μὲν οὖν τούτων τῶν διαιρέσεων ἐστὶν
 of-intervals one indeed then of-these the divisions is
 ἐναρμόνιος ἐν ἣ τὸ μὲν πυκνὸν ἡμιτόνιον ἐστὶ τὸ δὲ
 enharmonic in which the indeed pyknon (a)-semitone is the and
 λοιπὸν δίτονον. τρεῖς δὲ χρωματικά, ἣ τε τοῦ μαλακοῦ
 remainder (a)-ditone three and chromatic the both of-the soft
 χρώματος καὶ ἡ τοῦ ἡμιολίου καὶ ἡ τοῦ τονιαίου·
 chroma and that of-the hemiolic and that of-the tone-sized
 μαλακοῦ μὲν οὖν χρώματός ἐστι διαίρεσις ἐν ἣ τὸ μὲν
 of-soft indeed then chroma is (the)-division in which the indeed
 πυκνὸν ἐκ δύο χρωματικῶν διέσεων ἐλάχιστων σύγκειται,
 pyknon from two chromatic dieses least is-composed
 τὸ δὲ λοιπὸν δύο μέτροις μετρεῖται, ἡμιτονίῳ μὲν
 the and remainder by-two measures is-measured by-semitone indeed
 τρίς, χρωματικῇ δὲ διέσει ἅπαξ, ὥστε μετρεῖσθαι τρισὶν
 thrice by-chromatic and diesis once so-as to-be-measured by-thrice
 ἡμιτονίοις καὶ τόνου τρίτῳ μέρει ἅπαξ· ἐστὶ δὲ τῶν
 semitones and of-a-tone third part once is and of-the
 χρωματικῶν πυκνῶν ἐλάχιστον καὶ λιχανὸς αὕτη βαρυτάτη
 chromatic pykna least and (the)-lichanos this heaviest
 τοῦ γένους τούτου. ἡμιολίου δὲ χρώματος διαίρεσίς ἐστιν ἐν
 of-the genus this of-hemiolic and chroma (the)-division is in

ἥ τό τε πυκνὸν ἡμιόλιον ἐστὶ τοῦ τ' ἐναρμονίου καὶ 51
whicb the both pyknon hemiolic is of-the both enharmonic and
 τῶν διέσεων ἑκάτερα ἑκατέρας τῶν ἐναρμονίων· ὅτι δ'
of-the dieses each of-each of-the enharmonic that and
 ἐστὶ μείζον τὸ ἡμιόλιον πυκνὸν τοῦ μαλακοῦ, ῥάδιον
is greater the hemiolic pyknon than-the soft (is)-easy
 συνιδεῖν, τὸ μὲν γὰρ ἐναρμονίου διέσεως λείπει τόνος εἶναι
to-see-together the one for of-enharmonic diesis falls-short (a)-tone to-be
 τὸ δὲ χρωματικῆς. τονιαίου δὲ χρώματος διαίρεσις ἐστὶν
the other of-chromatic of-tone-sized and chroma (the)-division is
 ἐν ἣ τὸ μὲν πυκνὸν ἐξ ἡμιτονίων δύο σύγκειται τὸ
in whicb the indeed pyknon from semitones two is-composed the
 δὲ λοιπὸν τριημιτονίον ἐστὶν. Μέχρι μὲν οὖν ταύτης τῆς
and remainder three-semitones is up-to indeed then this the
 διαιρέσεως ἀμφοτέροι κινουῦνται οἱ φθόγγοι, μετὰ ταῦτα δ'
division both move the notes after these and
 ἡ μὲν παρυπάτη μένει, διελήλυθε γὰρ τὸν αὐτῆς τόπον,
the indeed parhypate abides it-has-traversed for the its-own region
 ἡ δὲ λιχανὸς κινεῖται διέσιν ἐναρμόνιον καὶ γίνεταί τὸ
the and lichanos moves (a)-diesis enharmonic and becomes the
 λιχανοῦ καὶ ὑπάτης διάστημα ἴσον τῷ λιχανοῦ καὶ μέσης,
of-lichanos and hypate interval equal to-that of-lichanos and mese
 ὥστε μηκέτι γίνεσθαι πυκνὸν ἐν ταύτῃ τῇ διαιρέσει.
so-as no-longer to-arise (a)-pyknon in this the division
 συμβαίνει δ' ἅμα παύεσθαι τὸ πυκνὸν συνιστάμενον ἐν
it-befalls and at-once to-cease the pyknon forming in
 τῇ τῶν τετραχόρδων διαιρέσει καὶ ἄρχεσθαι γιγνόμενον
the of-the tetrachords division and to-begin arising
 τὸ διάτονον γένος. Εἰσὶ δὲ δύο διατόνου διαιρέσεις, ἥ
the diatonic genus are and two of-diatonic divisions the
 τε τοῦ μαλακοῦ καὶ ἡ τοῦ συντόνου. μαλακοῦ μὲν
both of-the soft and that of-the tense of-soft indeed

οὖν ἐστὶ διατόνου διαίρεσις ἐν ᾗ τὸ μὲν ὑπάτης καὶ
 then is of-diatonic (the)-division in which the one of-hypate and
 παρυπάτης ἡμιτονιαῖόν ἐστι, τὸ δὲ παρυπάτης καὶ λιχανοῦ
 parhypate half-tone-sized is the other of-parhypate and lichanos
 τριῶν διέσεων ἐναρμονίων, τὸ δὲ λιχανοῦ καὶ μέσης
 of-three dieses enharmonic the other of-lichanos and mese
 πέντε διέσεων· συντόνου δὲ ἐν ᾗ τὸ μὲν ὑπάτης καὶ
 of-five dieses of-tense and in which the one of-hypate and
 παρυπάτης ἡμιτονιαῖον, τῶν δὲ λοιπῶν τονιαῖον ἐκάτερόν
 parhypate half-tone-sized the others remaining tone-sized each
 ἐστί. Λιχανοὶ μὲν οὖν εἰσὶν ἕξ, μία ἐναρμόνιος, τρεῖς
 is lichanoi indeed then are six one enharmonic three

- 52 χρωματικαὶ καὶ δύο διάτονοι, ὅσαι περ αἱ τῶν
 chromatic and two diatonic as-many as the of-the
 τετραχόρδων διαιρέσεις, παρυπάται δὲ δύο ἐλάττους, τῇ
 tetrachords divisions parhypatai and two fewer the
 γὰρ ἡμιτονιαία χρώμεθα πρὸς τε τὰς διατόνους καὶ
 for half-tone-sized we-use both for the diatonic and
 πρὸς τὴν τοῦ τονιαίου χρώματος διαίρεσιν· τεττάρων
 for the of-the tone-sized chroma division four
 δ' οὓσων παρυπατῶν ἡ μὲν ἐναρμόνιος ἰδία ἐστὶ τῆς
 and being parhypatai the one enharmonic proper is to-the
 ἀρμονίας, αἱ δὲ τρεῖς κοιναὶ τοῦ τε διατόνου καὶ τοῦ
 harmonia the other three common of-the both diatonic and of-the
 χρώματος. Τῶν δ' ἐν τῷ τετραχόρδῳ διαστημάτων τὸ
 chroma of-the and in the tetrachord intervals the
 μὲν ὑπάτης καὶ παρυπάτης τῷ παρυπάτης καὶ λιχανοῦ
 one of-hypate and parhypate to-that of-parhypate and lichanos
 ἢ ἴσον μελωδεῖται ἢ ἔλαττον, μείζον δ' οὐδέποτε. ὅτι
 either equal is-sung or smaller greater and never that
 μὲν οὖν ἴσον φανερόν ἐκ τῆς ἐναρμονίου διαιρέσεως
 indeed then equal (is)-evident from the enharmonic division

καὶ τῶν χρωματικῶν, ὅτι δ' ἔλαττον ἐκ μὲν τῶν
and the chromatic that and smaller from indeed the
 διατόνων φανερόν, ἐκ δὲ τῶν χρωματικῶν οὕτως ἂν τις
diatonic (is)-evident from and the chromatic thus would one
 κατανοήσειεν, εἰ παρυπάτην μὲν λάβοι τὴν τοῦ μαλακοῦ
observe if parhypate indeed one-took that of-the soft
 χρώματος, λιχανὸν δὲ τὴν τοῦ τονιαίου· καὶ γὰρ αἱ
chroma lichanos and that of-the tone-sized also for the
 τοιαῦται διαιρέσεις τῶν πυκνῶν ἐμμελεῖς φαίνονται. τὸ
such divisions of-the pykna melodic appear the
 δ' ἐκμελὲς γένοιτ' ἂν ἐκ τῆς ἐναντίας λήψεως, εἴ τις
but unmelodic would-arise — from the contrary taking if one
 παρυπάτην μὲν λάβοι τὴν ἡμιτονιαίαν, λιχανὸν δὲ τὴν τοῦ
parhypate indeed took the half-tone-sized lichanos and that of-the
 ἡμιολίου χρώματος, ἢ παρυπάτην μὲν τὴν τοῦ ἡμιολίου,
hemiotic chroma or parhypate indeed that of-the hemiotic
 λιχανὸν δὲ τὴν τοῦ μαλακοῦ χρώματος· ἀνάρμοστοι γὰρ
lichanos and that of-the soft chroma unattuned for
 φαίνονται αἱ τοιαῦται διαιρέσεις. Τὸ δὲ παρυπάτης καὶ
appear the such divisions the other of-parhypate and
 λιχανοῦ τῷ λιχανοῦ καὶ μέσης καὶ ἴσον μελωδεῖται καὶ
lichanos to-that of-lichanos and mese both equal is-sung and
 ἄνισον ἀμφοτέρως· ἴσον μὲν ἐν τῷ συντονωτάτῳ διατόνῳ,
unequal both-ways equal indeed in the tensest diatonic
 ἔλαττον δ' ἐν πᾶσι τοῖς λοιποῖς, μείζον δ' ὅταν τις
smaller and in all the rest greater and when one
 λιχανῶ μὲν τῇ συντονωτάτῃ τῶν διατόνων, παρυπάτη
for-lichanos indeed the tensest of-the diatonic for-parhypate
 δὲ τῶν βαρυτέρων τινὲ τῆς ἡμιτονιαίας χρήσεται.
and of-the heavier some than-the half-tone-sized uses

Succession must be sought in the nature of melody itself, not in the close-packed diagrams — the voice cannot string together more than three dieses. The exact account must wait, but that succession exists is plain: there is a greatest number into which melody divides every interval, and the notes enclosing its parts are successive.

Μετὰ δὲ ταῦτα δεικτέον περὶ τοῦ ἐξῆς ὑποτυπώσαντες
after and these must-be-shown about the successive having-sketched
 πρῶτον αὐτὸν τὸν τρόπον καθ' ὃν ἀξιωτέον τὸ
first itself the manner according-to which must-be-demanded the
 ἐξῆς ἀφορίζειν.

successive to-mark-off

- 53 Ἀπλῶς μὲν οὖν εἰπεῖν κατὰ τὴν τοῦ μέλους φύσιν
simply indeed then to-speak according-to the of-the melody nature
 ζητητέον τὸ ἐξῆς καὶ οὐχ ὡς οἱ εἰς τὴν καταπύκνωσιν
must-be-sought the successive and not as those at the close-packing
 βλέποντες εἰώθασιν ἀποδιδόναι τὸ συνεχές. ἐκεῖνοι μὲν
looking are-accustomed to-render the continuous those indeed
 γὰρ ὀλιγωρεῖν φαίνονται τῆς τοῦ μέλους ἀγωγῆς· φανερόν
for to-neglect appear the of-the melody course evident
 δ' ἐκ τοῦ πλήθους τῶν ἐξῆς τιθεμένων διέσεων, οὐ γὰρ
and from the multitude of-the in-succession placed dieses not for
 διὰ τοσούτων δυνηθεῖη τις ἄν· μέχρι γὰρ τριῶν ἢ φωνῇ
through so-many could one ever up-to for three the voice
 δύναται συνείρειν· ὥστ' εἶναι φανερόν ὅτι τὸ ἐξῆς οὐτ' ἐν
can string-together so-as to-be evident that the successive neither in
 τοῖς ἐλαχίστοις οὐτ' ἐν τοῖς ἀνίστοις οὐτ' ἐν τοῖς ἴσοις ἀεὶ
the least nor in the unequal nor in the equal always
 ζητητέον διαστήμασιν, ἀλλ' ἀκολουθητέον τῇ φύσει. Τὸν
must-be-sought intervals but one-must-follow the nature the

μὲν οὖν ἀκριβῇ λόγον τοῦ ἐξῆς οὐπω ῥάδιον ἀποδοῦναι,
indeed then exact account of-the successive not-yet (is-it)-easy to-render
 ἕως ἂν αἱ συνθέσεις τῶν διαστημάτων ἀποδοθῶσιν· ὅτι δ'
until ever the compoundings of-the intervals be-rendered that but
 ἔστι τι ἐξῆς καὶ τῷ παντελῶς ἀπείρῳ φανερόν γένοιτ'
is some successive even to-the utterly unversed evident would-become
 ἂν διὰ τοιαύδε τινος ἐπαγωγῆς. Πιθανὸν γὰρ τὸ μηδὲν
— through such-as-this a-certain induction plausible for the no
 εἶναι διάστημα ὃ μελωδοῦντες εἰς ἄπειρα τέμνομεν,
to-be interval which (in)-singing into boundless(-parts) we-cut
 ἀλλ' εἶναί τινα μέγιστον ἀριθμὸν εἰς ὃν διαιρεῖται τῶν
but to-be some greatest number into which is-divided of-the
 διαστημάτων ἕκαστον ὑπὸ τῆς μελωδίας. Εἰ δὲ τοῦτό
intervals each by the singing if and this
 φάμεν ἥτοι πιθανὸν ἢ καὶ ἀναγκαῖον εἶναι, δῆλον ὅτι
we-say either plausible or even necessary to-be clear that
 οἱ τοῦ προειρημένου ἀριθμοῦ μέρη περιέχοντες φθόγγοι
the of-the aforesaid number parts enclosing notes
 ἐξῆς ἀλλήλων ἔχονται. δοκοῦσι δ' εἶναι τοιούτων τῶν
in-succession of-one-another hold seem and to-be of-such the
 φθόγων καὶ οὗτοι οἷς τυγχάνομεν ἐκ παλαιοῦ χρώμενοι
notes also these which we-happen from of-old using
 οἶον ἢ νήτη καὶ ἢ παρανήτη καὶ οἱ τούτοις συνεχεῖς.
such-as the nete and the paranete and the to-these continuous

II.12 · THE FIRST PRINCIPLE OF MELODY

In every genus, from every note, melody moving through successive notes must make the fourth note concordant at the fourth or the fifth at the fifth; the note that does neither is unmelodic. This is the first principle, without which everything else is useless. Tetrachords of the same system must either concord with one another or concord with the same note.

Ἐχόμενον δ' ἂν εἴη τὸ ἀφορίσαι τὸ πρῶτον καὶ
next and would it-be the to-mark-off the first and
 ἀναγκαϊότατον
most-necessary

- 54 τῶν συντεινόντων πρὸς τὰς ἐμμελεῖς συνθέσεις τῶν
of-the(-things) tending toward the melodic compoundings of-the
 διαστημάτων. Ἐν παντὶ δὲ γένει ἀπὸ παντὸς φθόγγου διὰ
intervals in every and genus from every note through
 τῶν ἐξῆς τὸ μέλος ἀγόμενον καὶ ἐπὶ τὸ βαρὺ καὶ
the successive(-notes) the melody being-led both toward the heavy and
 ἐπὶ τὸ ὀξὺ ἢ τὸν τέταρτον τῶν ἐξῆς διὰ τεσσάρων ἢ
toward the sharp either the fourth of-the successive through four or
 τὸν πέμπτον διὰ πέντε σύμφωνον λαμβανέτω, ᾧ
the fifth through five (as)-concordant let-it-take with-whichever
 δ' ἂν μηδέτερα τούτων συμβαίνει, ἐκμελῆς ἔστω οὗτος
and ever neither of-these befalls unmelodic let-be this(-note)
 πρὸς ἅπαντας οἷς συμβέβηκεν ἀσυμφώνῳ εἶναι
toward all those-with-which it-has-befallen discordant to-be
 κατὰ τοὺς εἰρημένους ἀριθμούς. Οὐ δεῖ δ' ἀγνοεῖν,
according-to the said numbers not must and one-fail-to-know
 ὅτι οὐκ ἔστιν αὐταρκες τὸ εἰρημένον πρὸς τὸ ἐμμελῶς
that not is self-sufficient the said(-rule) for the melodically
 συγκεῖσθαι τὰ συστήματα ἐκ τῶν διαστημάτων· οὐδὲν
to-be-composed the systems from the intervals nothing
 γὰρ κωλύει συμφωνούντων τῶν φθόγγων κατὰ τοὺς
for prevents concordng the notes according-to the
 εἰρημένους ἀριθμούς ἐκμελῶς τὰ συστήματα συνεστάναι,
said numbers unmelodically the systems to-be-composed
 ἀλλὰ τούτου μὴ ὑπάρχοντος οὐδὲν ἔτι γίγνεται τῶν
but this not subsisting nothing further becomes of-the
 λοιπῶν ὄφελος. θετέον οὖν τοῦτο πρῶτον εἰς ἀρχῆς
rest of-use must-be-placed then this first into of-a-principle

τάξιν οὐ μὴ ὑπάρχοντος ἀναιρεῖται τὸ ἡρμοσμένον. Ὅμοιον
rank which not subsisting is-destroyed the attuned like
 δ' ἐστὶ τούτῳ τρόπον τινὰ καὶ τὸ περὶ τὰς τῶν
and is to-this (in)-manner a-certain also the(-matter) about the of-the
 τετραχόρδων πρὸς ἄλληλα θέσεις· δεῖ γὰρ τοῖς τοῦ αὐτοῦ
tetrachords toward one-another positions must for the of-the same
 συστήματος τετραχόρδοις ἐσομένοις δυοῖν θάτερον ὑπάρχειν,
system tetrachords going-to-be of-two one-of-the-two belong
 ἢ γὰρ συμφωνεῖν πρὸς ἄλληλα, ὥσθ' ἕκαστον ἐκάστω
either for to-concord with one-another so-as each with-each
 σύμφωνον εἶναι καθ' ἣν δῆποτε τῶν συμφωνιῶν, ἢ
concordant to-be according-to whichever soever of-the concords or
 πρὸς τὸ αὐτὸ συμφωνεῖν μὴ ἐπὶ τὸν αὐτὸν τόπον συνεχῇ
with the same to-concord not upon the same region continuous
 ὄντα ᾧ συμφωνεῖ ἐκάτερον αὐτῶν. Ἔστι δ' οὐδὲ
being with-which concords each of-them is and not-even
 τοῦτο αὐταρκες πρὸς τὸ εἶναι τοῦ αὐτοῦ συστήματος τὰ
this self-sufficient for the to-be of-the same system the
 τετράχορδα, προσδεῖται γὰρ τινων καὶ ἐτέρων περὶ ὧν
tetrachords it-needs-besides for certain also other(-things) about which
 ἐν τοῖς ἔπειτα ρηθήσεται, ἀλλ' ἄνευ γε
in the(-things) hereafter will-be-told but without at-least
 τούτου πάντα γίνεταί τὰ λοιπὰ ἄχρηστα.
this all become the rest useless

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II.13 · TAKING DISCORDS THROUGH CONCORDS

Perception trusts the sizes of concords far more than discords, so the most exact way to take a discord is through concords: to find a ditone below a note, take the fourth up, the fifth down, the fourth up, the fifth down. The same holds for subtracting; what remains is likewise taken through concord.

Ἐπεὶ δὲ τῶν διαστηματικῶν μεγεθῶν τὰ μὲν τῶν
since and of-the intervallic magnitudes the some of-the
 συμφώνων ἤτοι ὅλως οὐκ ἔχειν δοκεῖ τόπον ἀλλ' ἐνὶ
concordances either wholly not to-have seem (a)-range but by-one
 μεγέθει ὠρίσθαι, ἢ παντελῶς ἀκαριαῖόν τινα, τὰ δὲ τῶν
magnitude to-be-bounded or (an)-utterly tiny certain the others of-the
 διαφώνων πολλῶ ἦττον τοῦτο πέπονθε καὶ διὰ ταύτας
discordances by-much less this have-suffered and through these
 τὰς αἰτίας πολὺ μᾶλλον τοῖς τῶν συμφώνων μεγέθεσι
the causes much more the of-the concordances magnitudes
 πιστεύει ἢ αἴσθησις ἢ τοῖς τῶν διαφώνων ἀκριβεστάτη
trusts the perception than those of-the discordances most-exact
 δ' ἂν εἴη διαφώνου διαστήματος λήψις ἢ διὰ
and would be of-a-discordant interval taking that through
 συμφωνίας. Ἐὰν μὲν οὖν προσταχθῇ πρὸς τῷ δοθέντι
concord if indeed then it-be-ordered at the given
 φθόγγῳ λαβεῖν ἐπὶ τὸ βαρὺ τὸ διάφωνον οἷον δίτονον
note to-take toward the heavy the discord such-as (a)-ditone
 ἢ ἄλλο τι τῶν δυνατῶν ληφθῆναι διὰ συμφωνίας,
or other any of-the possible(-ones) to-be-taken through concord
 ἐπὶ τὸ ὀξὺ ἀπὸ τοῦ δοθέντος φθόγγου ληπτέον τὸ
toward the sharp from the given note must-be-taken the
 διὰ τεσσάρων, εἴτ' ἐπὶ τὸ βαρὺ τὸ διὰ πέντε, εἴτα
through four then toward the heavy the through five then
 πάλιν ἐπὶ τὸ ὀξὺ τὸ διὰ τεσσάρων, εἴτ' ἐπὶ τὸ βαρὺ
again toward the sharp the through four then toward the heavy
 τὸ διὰ πέντε. καὶ οὕτως ἔσται τὸ δίτονον ἀπὸ τοῦ
the through five and thus will-be the ditone from the
 ληφθέντος φθόγγου εἰλημμένον τὸ ἐπὶ τὸ βαρὺ. ἐὰν δ'
taken note taken that toward the heavy if and
 ἐπὶ τοῦναντίον προσταχθῇ λαβεῖν τὸ διάφωνον, ἐναντίως
toward the-contrary it-be-ordered to-take the discord contrariwise

ποιητέον τὴν τῶν συμφώνων λήψιν. Γίγνεται δὲ καὶ ἐὰν
 must-be-made the of-the concords taking it-arises and also if
 ἀπὸ συμφώνου διαστήματος τὸ διάφωνον ἀφαιρεθῇ διὰ
 from (a)-concordant interval the discord be-subtracted through
 συμφωνίας καὶ τὸ λοιπὸν διὰ συμφωνίας εἰλημμένον·
 concord also the remainder through concord (is)-taken
 ἀφαιρείσθω γὰρ τὸ δίτονον ἀπὸ τοῦ διὰ τεσσάρων
 let-be-subtracted for the ditone from the through four
 διὰ συμφωνίας· δῆλον δὴ ὅτι οἱ τὴν ὑπεροχὴν
 through concord clear indeed that the(-notes) the excess
 περιέχοντες ἢ τὸ διὰ τεσσάρων ὑπερέχει τοῦ διτόνου
 enclosing by-which the through four exceeds the ditone
 διὰ συμφωνίας ἔσονται πρὸς ἀλλήλους εἰλημμένοι·
 through concord will-be relative-to one-another taken
 ὑπάρχουσι μὲν γὰρ οἱ τοῦ διὰ τεσσάρων ὅροι σύμφωνοι· 56
 subsist indeed for the of-the through four bounds concordant
 ἀπὸ δὲ τοῦ ὀξυτέρου αὐτῶν λαμβάνεται φθόγγος σύμφωνος
 from and the sharper of-them is-taken (a)-note concordant
 ἐπὶ τὸ ὀξὺ διὰ τεσσάρων, ἀπὸ δὲ τοῦ ληφθέντος ἕτερος
 toward the sharp through four from and the taken(-note) another
 ἐπὶ τὸ βαρὺ διὰ πέντε, εἴτα πάλιν ἐπὶ τὸ ὀξὺ διὰ
 toward the heavy through five then again toward the sharp through
 τεσσάρων, εἴτ' ἀπὸ τούτου ἕτερος ἐπὶ τὸ βαρὺ διὰ πέντε.
 four then from this another toward the heavy through five
 καὶ πέπτωκε τὸ τελευταῖον σύμφωνον ἐπὶ τὸν ὀξύτερον
 and has-fallen the last concord upon the sharper
 τῶν τὴν ὑπεροχὴν ὀριζόντων, ὥστ' εἶναι φανερόν, ὅτι,
 of-the(-notes) the excess bounding so-as to-be evident that
 ἐὰν ἀπὸ συμφώνου διάφωνον ἀφαιρεθῇ διὰ συμφωνίας,
 if from (a)-concord (a)-discord be-subtracted through concord
 ἔσται καὶ τὸ λοιπὸν διὰ συμφωνίας εἰλημμένον.
 will-be also the remainder through concord taken

The most exact test: take a fourth, mark a ditone off from each end through concords, extend each by a fourth, and carry the extremes to the ear. The two excesses are equal; if the outer notes are discordant the fourth is not two and a half tones, and if they concord at the fifth each excess is a semitone and the fourth is five semitones. They can concord at no interval but the fifth, the only concord between fourth and octave.

Πότερον δ' ὀρθῶς ὑπόκειται τὸ διὰ τεσσάρων ἐν
whether and rightly is-supposed the through four in
 ἀρχῇ δύο τόνων καὶ ἡμίσεος, κατὰ τόνδε τὸν τρόπον
(the)-beginning (as)-two tones and a-half in this-here the manner
 ἐξετάσειεν ἂν τις ἀκριβέστατα· εἰλήφθω γὰρ τὸ διὰ
might-test — one most-exactly let-be-taken for the through
 τεσσάρων καὶ πρὸς ἐκατέρῳ τῶν ὄρων ἀφορίσθω δίτονον
four and at each of-the bounds let-be-marked-off (a)-ditone
 διὰ συμφωνίας. δῆλον δὲ ὅτι ἀναγκαῖον τὰς ὑπεροχὰς
through concord clear indeed that (it-is)-necessary the excesses
 ἴσας εἶναι, ἐπειδὴ περ καὶ ἴσα ἀπ' ἴσων ἀφήρηται. μετὰ
equal to-be since-indeed also equals from equals have-been-subtracted after
 δὲ τοῦτο τῷ τὸ ὀξύτερον δίτονον ἐπὶ τὸ βαρὺ ὀρίζοντι
and this by-the(-note) the sharper ditone toward the heavy bounding
 διὰ τεσσάρων εἰλήφθω ἐπὶ τὸ ὀξύ, τῷ δὲ τὸ
through four let-be-taken toward the sharp by-the(-note) and the
 βαρύτερον δίτονον ἐπὶ τὸ ὀξὺ ὀρίζοντι εἰλήφθω ἕτερον διὰ
heavier ditone toward the sharp bounding let-be-taken another through
 τεσσάρων ἐπὶ τὸ βαρὺ. φανερόν δὲ ὅτι πρὸς ἐκατέρῳ
four toward the heavy evident indeed that at each
 τῶν ὀριζόντων τὸ γεγονὸς σύστημα δύο συνεχεῖς ἔσονται
of-the(-notes) bounding the resulting system two continuous will-be
 κείμεναι ὑπεροχαὶ ὥς ἀναγκαῖον ἴσας εἶναι διὰ τὰ
lying excesses which (it-is)-necessary equal to-be through the(-things)

ἔμπροσθεν εἰρημένα. τούτων δ' οὕτω προκατεσκευασμένων
before said these and thus having-been-prepared-beforehand
 τοὺς ἄκρους τῶν ὀρισμένων φθόγγων ἐπὶ τὴν αἴσθησιν
the extremes of-the determined notes to the perception
 ἐπανακτέον· εἰ μὲν οὖν φανήσονται διάφωνοι, δῆλον ὅτι
must-be-brought-back if indeed then they-shall-appear discordant clear that
 οὐκ ἔσται τὸ διὰ τεσσάρων δύο τόνων καὶ ἡμίσεος,
not will-be the through four two tones and a-half
 εἰ δὲ συμφωνήσουσι διὰ πέντε, δῆλον ὅτι δύο τόνων καὶ 57
if but they-shall-concord through five clear that two tones and
 ἡμίσεος ἔσται τὸ διὰ τεσσάρων. ὁ μὲν γὰρ βαρύτατος τῶν
a-half will-be the through four the one for heaviest of-the
 εἰλημμένων φθόγγων διὰ τεσσάρων ἡρμόσθη σύμφωνος
taken notes through four was-attuned concordant
 τῷ τὸ βαρύτερον δίτονον ἐπὶ τὸ ὀξὺ ὀρίζοντι,
with-the(-note) the heavier ditone toward the sharp bounding
 τὸν δ' ὀξύτατον τῶν εἰλημμένων φθόγγων διὰ πέντε
the other sharpest of-the taken notes through five
 συμβέβηκε συμφωνεῖν τῷ βαρυτάτῳ, ὥστε τῆς ὑπεροχῆς
it-has-befallen to-concord with-the heaviest so-that the excess
 οὔσης τονιαίας τε καὶ εἰς ἴσα διηρημένης ὧν ἑκάτερον
being tone-sized both and into equals divided of-which each
 ἡμιτόνιον τε καὶ ὑπεροχὴ μὲν τοῦ διὰ τεσσάρων ἐστὶν
(is)-a-semitone both and (the)-excess indeed of-the through four is
 ὑπὲρ τὸ δίτονον, δῆλον ὅτι πέντε ἡμιτονίων συμβαίνει τὸ
over the ditone clear that of-five semitones it-befalls the
 διὰ τεσσάρων εἶναι. Ὅτι δ' οἱ τοῦ ληφθέντος συστήματος
through four to-be that and the of-the taken system
 ἄκροι οὐ συμφωνήσουσιν ἄλλην συμφωνίαν ἢ τὴν διὰ
extremes not will-concord (in)-another concord than the through
 πέντε, ῥάδιον συνιδεῖν· πρῶτον μὲν οὖν ὅτι τὴν διὰ
five (is)-easy to-see-together first indeed then that the through

- τεσσάρων οὐ συμφωνοῦσι κατανοητέον, ἐπειδήπερ πρὸς τῷ
four not they-concord must-be-observed since-indeed at the
 ληφθέντι ἐξ ἀρχῆς διὰ τεσσάρων ὑπεροχὴ πρόσκειται
taken from (the)-beginning through four (an)-excess is-added
 ἐφ' ἐκάτερα· ἔπειθ' ὅτι τὴν διὰ πασῶν οὐκ ἐνδέχεται
on each-side next that the through all not is-possible
 συμφωνίαν δεικτέον. τὸ γὰρ ἐκ τῶν ὑπεροχῶν γιγνόμενον
(as)-concord must-be-shown the for from the excesses arising
 μέγεθος ἔλαττον ἐστὶ διτόνου, ἐλάττονι γὰρ ὑπερέχει
magnitude smaller is than-a-ditone by-(a)-smaller(-amount) for exceeds
 τὸ διὰ τεσσάρων ἢ τόνῳ τοῦ διτόνου συγχωρεῖται γὰρ
the through four than by-a-tone the ditone it-is-conceded for
 παρὰ πάντων τὸ διὰ τεσσάρων μείζον μὲν εἶναι δύο
by all the through four greater indeed to-be than-two
 τόνων ἔλαττον δὲ τριῶν, ὥστε πᾶν τὸ προσκείμενον τῷ
tones smaller and than-three so-that every the added to-the
 διὰ τεσσάρων ἔλαττον ἐστὶ τοῦ διὰ πέντε φανερόν
through four smaller is than-the through five evident
 δὴ ὅτι τὸ συγκεείμενον ἐξ αὐτῶν οὐκ ἂν εἴη διὰ
indeed that the composed from them not would be through
 πασῶν. εἰ δὲ συμφωνοῦσιν οἱ ἄκροι τῶν ληφθέντων
all if and concord the extremes of-the taken
 58 φθόγων μείζω μὲν συμφωνίαν τῆς διὰ τεσσάρων
notes (a)-greater indeed concord than-the through four
 ἐλάττω δὲ τῆς διὰ πασῶν, ἀναγκαῖον αὐτοὺς διὰ
(a)-smaller and than-the through all necessary(-it-is) them through
 πέντε συμφωνεῖν· τοῦτο γάρ ἐστὶ μόνον μέγεθος σύμφωνον
five to-concord this for is (the)-only magnitude concordant
 μεταξὺ τοῦ διὰ τεσσάρων καὶ τοῦ διὰ πασῶν.
between the through four and the through all

BOOK III

ΑΡΙΣΤΟΞΕΝΟΥ ΑΡΜΟΝΙΚΩΝ ΣΤΟΙΧΕΙΩΝ ΤΡΙΤΟΝ

III.1 • CONJUNCTION AND DISJUNCTION

Book III opens with the two ways successive tetrachords stand: conjoined, sharing a common note, or disjoined, with a tone between. One or the other must hold for successive tetrachords, since every fourth note concurring at the fourth makes conjunction, and every fifth at the fifth disjunction.

Τὰ ἐξῆς τετράχορδα ἢ συνῆπται ἢ διέζευκται·
the successive tetrachords either are-conjoined or are-disjoined
 καλείσθω δὲ συναφὴ μὲν ὅταν δύο τετραχόρδων ἐξῆς
let-be-called and conjunction indeed when (of-)two tetrachords in-succession
 μελωδουμένων ὁμοίων κατὰ σχῆμα φθόγγος ἀνὰ μέσον
sung similar in figure (a)-note in (the)-middle
 κοινός, διάζευξις δ' ὅταν δύο τετραχόρδων ἐξῆς
(is)-common disjunction and when (of-)two tetrachords in-succession
 μελωδουμένων ὁμοίων κατὰ σχῆμα τόνος ἢ ἀνὰ μέσον.
sung similar in figure (a)-tone be in (the)-middle
 Ὅτι δ' ἀναγκαῖον ἕτερον πότερον συμβαίνειν τοῖς
that and (it-is)-necessary one-or-the-other of-the-two to-befall the
 ἐξῆς τετραχόρδοις, φανερόν ἐκ τῶν ὑποκειμένων· οἱ
successive tetrachords (is)-evident from the(-things) laid-down the
 μὲν γὰρ τέταρτοι τῶν ἐξῆς διὰ τεσσάρων συμφωνοῦντες
indeed for fourths of-the successive through four concurring
 συναφὴν ποιήσουσιν, οἱ δὲ πέμπτοι διὰ πέντε
conjunction will-make the and fifths through five

- 59 διάζευξιν. δεῖ δ' ἕτερον πότερον τούτων ὑπάρχειν τοῖς
 disjunction must and one-or-the-other of-the-two of-these belong to-the
 φθόγγοις, ὥστε καὶ τοῖς ἐξῆς τετραχόρδοις ἀναγκαῖον
 notes so-that also to-the successive tetrachords necessary(-it-is)
 ἕτερον τῶν εἰρημένων ὑπάρχειν.
 one-or-the-other of-the said(-two) to-belong

III.2 · THE APORIA ON SUCCESSION

One of the hearers asked what succession is, whether it comes about in one way or in several, and whether conjoined and disjoined systems are both successive. The answer given is that systems are continuous when their bounding notes are successive or overlap. Two similar tetrachords can stand in succession only if a tone lies between them or their bounds overlap, and between unlike tetrachords that are successive no tetrachord can be placed.

ἤδη δέ τις ἠπόρησε τῶν ἀκούοντων περὶ τοῦ
 already and someone has-raised-difficulty of-the hearers about the
 ἐξῆς· πρῶτον μὲν καθόλου τί ποτ' ἐστὶ τὸ ἐξῆς, ἔπειτα
 successive first indeed in-general what ever is the successive then
 πότερον κατὰ ἓνα μόνον γίγνεται τρόπον ἢ κατὰ πλείους,
 whether in one only it-arises way or in several
 τρίτον δ' εἰ ἴσως ἀμφοτέρω ταύτ' ἐστὶν ἐξῆς τά τε
 third and whether equally both these are successive the both
 συνημμένα καὶ τὰ διεzeugμένα. Πρὸς δὲ ταῦτα τοιοῦτοί
 conjoined and the disjoined in-reply-to indeed these such
 τινες ἐλέγοντο λόγοι· καθόλου ταῦτα εἶναι συστήματα
 some were-spoken arguments in-general these to-be systems
 συνεχῇ ὧν οἱ ὅροι ἢτοι ἐξῆς εἰσὶν ἢ ἐπαλλάττουσιν.
 continuous of-which the bounds either successive are or overlap
 τοῦ δ' ἐξῆς δύο τρόποι εἰσὶ, καὶ ὁ μὲν καθ' ὃν
 of-the and successive two ways there-are and the one according-to which

τῷ τοῦ ὀξυτέρου συστήματος βαρυτέρῳ ὄρω κοινός ἐστιν
with-the of-the sharper system heavier bound common is
 ὁ τοῦ βαρυτέρου συστήματος ὄρος ὀξύτερος, ὁ δ' ἕτερος
the of-the heavier system bound sharper the and other
 καθ' ὃν ὁ τοῦ ὀξυτέρου συστήματος βαρύτερος ὄρος
according-to which the of-the sharper system heavier bound
 ἐξῆς ἐστὶ τῷ τοῦ βαρυτέρου συστήματος ὀξυτέρῳ ὄρω.
successive is to-the of-the heavier system sharper bound
 κατὰ μὲν οὖν τὸν πρότερον τῶν τρόπων τόπου τέ τινος
in indeed then the former of-the ways of-region both a-certain
 κοινωνεῖ τὰ τῶν ἐξῆς τετραχόρδων συστήματα καὶ ὁμοιά
share the of-the successive tetrachords systems and similar
 ἐστιν ἐξ ἀνάγκης, κατὰ δὲ τὸν ἕτερον κεχώρισται
they-are from necessity in but the other they-have-been-separated
 ἀπ' ἀλλήλων καὶ ὅμοια δύναται γίγνεσθαι τὰ εἶδη τῶν
from one-another and similar can become the forms of-the
 τετραχόρδων· τοῦτο δὲ γίνεται τόνου ἀνὰ μέσον
tetrachords this but arises (a)-tone in (the)-middle
 τεθέντος, ἄλλως δ' οὐ. ὥστε δύο τετράχορδα ὅμοια
having-been-placed otherwise and not so-that two tetrachords similar
 τοιαῦτα συμβαίνειν ἐξῆς ἀλλήλων εἶναι ὧν ἥτοι τόνος
such to-result in-succession of-one-another to-be of-which either (a)-tone
 ἀνὰ μέσον ἐστὶν ἢ οἱ ὄροι ἐπαλλάττουσιν. ὥστε τὰ ἐξῆς
in (the)-middle is or the bounds overlap so-that the successive
 τετράχορδα ὅμοια ὄντα ἢ συνημμένα ἀναγκαῖον εἶναι
tetrachords similar being either conjoined necessary(-it-is) to-be
 ἢ διευγμένα. Φαμέν δὲ δεῖν τῶν ἐξῆς τετραχόρδων
or disjoined we-say and (that)-must of-the successive tetrachords
 ἥτοι ἀπλῶς μηδὲν εἶναι ἀνὰ μέσον τετράχορδον ἢ μὴ
either simply no to-be in (the)-middle tetrachord or not
 ἀνόμοιον. τῶν μὲν οὖν ὁμοίων κατ' εἶδος τετραχόρδων
(an)-unlike of-the indeed then similar in form tetrachords

οὐ τίθεται ἀνόμοιον ἀνὰ μέσον τετράχορδον, τῶν δ'
 not is-placed (an)-unlike in (the)-middle tetrachord of-the but
 ἀνομοίων μὲν ἑξῆς δ' οὐδὲν τίθεσθαι δυνατόν ἀνὰ
 unlike indeed successive but no(-tetrachord) to-be-placed (is)-possible in
 μέσον τετράχορδον. Ἐκ δὲ τῶν εἰρημένων φανερόν ὅτι
 (the)-middle tetrachord from and the said(-things) (is)-evident that
 τὰ ὅμοια κατ' εἶδος τετράχορδα κατὰ δύο τρόπους τοὺς
 the similar in form tetrachords in two ways the
 εἰρημένους ἑξῆς ἀλλήλων τεθήσεται.
 said in-succession of-one-another will-be-placed

III.3 · THE INCOMPOSITE INTERVAL

An interval is incomposite when successive notes enclose it — not because of its size. The ditone is incomposite when mese and lichanos bound it, composite when mese and parhypate do. In the differences of the genera only the parts of the fourth move; the tone of disjunction stands fast; and each genus has at most as many incomposites as the fifth contains.

Ἀσύνθετον δ' ἐστὶ διάστημα τὸ ὑπὸ τῶν ἑξῆς φθόγγων
 incomposite and is (the)-interval that by the successive notes
 περιεχόμενον. εἰ γὰρ ἑξῆς οἱ περιέχοντες, οὐδεὶς
 enclosed if for successive the enclosing(-notes) none
 ἐκλιμπάνει, μὴ ἐκλιμπάνων δ' οὐκ ἐμπεσεῖται, μὴ
 is-left-out not being-left-out and(-one) not will-fall-in not
 ἐμπίπτων δ' οὐ διαιρήσει, ὃ δὲ μὴ διαίρεσιν ἔχει
 falling-in and(-one) not will-divide what and not division has
 οὐδὲ σύνθεσιν ἔξει. πᾶν γὰρ τὸ σύνθετον ἔκ τινων
 nor composition will-have every for the composite from some
 μερῶν ἐστὶ σύνθετον εἰς ἅπερ καὶ διαιρετόν. Γίγνεται
 parts is composite into which-very also divisible arises

δὲ καὶ περὶ τοῦτο τὸ πρόβλημα πλάνη διὰ τὴν τῶν
and also about this the problem (a)-wandering through the of-the
 μεγεθῶν κοινότητα τοιάδε τις· θαυμάζουσι γὰρ πῶς
magnitudes commonness such-as-this a-certain they-wonder for how
 ποτε τὸ δίτονον ἀσύνθετον ὃ γ' ἐστὶ δυνατὸν διελεῖν
ever the ditone (is)-incomposite which at-least is possible to-divide
 εἰς τόνους ἢ πῶς πάλιν ποτ' ἐστὶν ὁ τόνος ἀσύνθετος
into tones or how again ever is the tone incomposite
 ὃν γ' ἐστὶ δυνατὸν εἰς δύο ἡμιτόνια διελεῖν· τὸν
which at-least is possible into two semitones to-divide the
 αὐτὸν δὲ λόγον λέγουσι καὶ περὶ τοῦ ἡμιτονίου. Γίγνεται
same and account they-say also about the semitone arises
 δ' αὐτοῖς ἡ ἄγνοια παρὰ τὸ μὴ συνορᾶν ὅτι τῶν
and for-them the ignorance because-of the not seeing-together that of-the
 διαστηματικῶν μεγεθῶν ἕνα κοινὰ τυγχάνει ὄντα συνθέτου
intervallic magnitudes some common happen being of-composite
 τε καὶ ἀσυνθέτου διαστήματος· διὰ γὰρ ταύτην τὴν
both and incomposite interval through for this the
 αἰτίαν οὐ μεγέθει διαστήματος τὸ ἀσύνθετον ἀλλὰ τοῖς
cause not by-magnitude of-interval the incomposite but by-the
 περιέχουσι φθόγγοις ἀφώρισται. τὸ γὰρ δίτονον ὅταν
enclosing notes has-been-marked-off the for ditone when
 μὲν ὀρίζωσι μέση καὶ λιχανός, ἀσύνθετόν ἐστιν, ὅταν δὲ
indeed bound(-it) mese and lichanos incomposite it-is when but
 μέση καὶ παρυπάτη, σύνθετον· δι' ὅπερ φαμὲν οὐκ ἐν
mese and parhypate composite through which-very we-say not in
 τοῖς μεγέθεσι τῶν διαστημάτων εἶναι τὸ ἀσύνθετον ἀλλ'
the magnitudes of-the intervals to-be the incomposite but
 ἐν τοῖς περιέχουσι φθόγγοις.
in the enclosing notes

Ἐν δὲ ταῖς τῶν γενῶν διαφοραῖς τὰ τοῦ διὰ τεσσάρων
in and the of-the genera differences the of-the through four
 μέρη μόνα κινεῖται, τὸ δ' ἴδιον τῆς διαζεύξεως
parts alone move the and proper(-interval) of-the disjunction
 ἀκίνητόν ἐστιν. πᾶν μὲν γὰρ διήρητο τὸ ἡρμοσμένον
unmoved is all indeed for had-been-divided the attuned
 εἰς συναφήν τε καὶ διάζευξιν, ὃ γε συνέστηκεν ἐκ
into conjunction both and disjunction what at-least is-composed from
 πλείονων ἢ ἐνὸς τετραχόρδου. Ἄλλ' ἢ μὲν συναφή
more than one tetrachord but the indeed conjunction
 ἐκ τῶν τοῦ διὰ τεσσάρων μερῶν μόνων ἀσυνθέτων
from the of-the through four parts alone incomposite
 σύγκειται, ὥστ' ἐξ ἀνάγκης ἔν γε ταύτῃ τὰ τοῦ
is-composed so-that from necessity in at-least this the of-the
 διὰ τεσσάρων μόνα μέρη κινηθήσεται· ἡ δὲ διάζευξις
through four alone parts will-move the but disjunction
 ἴδιον ἔχει παρὰ ταῦτα τὸν τόνον. ἐὰν οὖν δειχθῇ
(a)-proper(-interval) has besides these the tone if then be-shown
 τὸ ἴδιον τῆς διαζεύξεως μὴ κινούμενον ἐν ταῖς τῶν
the proper(-interval) of-the disjunction not moving in the of-the
 γενῶν διαφοραῖς, δῆλον ὅτι λείπεται ἐν αὐτοῖς τοῖς τοῦ
genera differences clear that it-remains in themselves the of-the
 διὰ τεσσάρων μέρεσι τὴν κίνησιν εἶναι. Ἔστι δ' ὁ
through four parts the motion to-be is and the
 μὲν βαρύτερος τῶν τὸν τόνον περιεχόντων ὀξύτερος
one heavier of-the(-notes) the tone enclosing (the)-sharper
 τῶν τὸ τετράχορδον περιεχόντων τὸ βαρύτερον τῶν
of-the(-notes) the tetrachord enclosing the heavier of-those
 ἐν τῇ διαζεύξει κειμένων· ὁμοίως δ' ἦν καὶ οὗτος ἀκίνητος
in the disjunction lying likewise and was also this(-note) unmoved
 ἐν ταῖς τῶν γενῶν διαφοραῖς· ὁ δ' ὀξύτερος τῶν τὸν
in the of-the genera differences the and sharper of-the(-notes) the

τόνον περιχόντων βαρύτερος τῶν τὸ τετράχορδον
tone enclosing (the)-heavier of-the(-notes) the tetrachord
 περιχόντων τὸ ὀξύτερον τῶν ἐν τῇ διαζεύξει κειμένων·
enclosing the sharper of-those in the disjunction lying
 ὁμοίως δ' ἦν καὶ οὗτος ἀκίνητος ἐν ταῖς τῶν γενῶν
likewise and was also this(-note) unmoved in the of-the genera
 διαφοραῖς. "Ὡστ' ἐπειδὴ φανερόν ὅτι οἱ τὸν τόνον
differences so-that since evident that the(-notes) the tone
 περιέχοντες ἀκίνητοί εἰσιν ἐν ταῖς τῶν γενῶν διαφοραῖς,
enclosing unmoved are in the of-the genera differences
 δῆλον ὅτι λείποιτ' ἂν αὐτὰ τὰ τοῦ διὰ τεσσάρων
clear that would-remain — themselves the of-the through four
 μέρη μόνα κινεῖσθαι ἐν ταῖς εἰρημέναις διαφοραῖς.
parts alone to-move in the said differences
 Ἐν ἐκάστῳ δὲ γένει τοσαῦτά ἐστὶν ἀσύνθετα τὰ 62
in each and genus so-many are incomposite(-intervals) the
 πλεῖστα ὅσα ἐν τῷ διὰ πέντε. Πᾶν μὲν γὰρ γένος
most as-many-as in the through five every indeed for genus
 ἢτοι ἐν συναφῇ μελωδεῖται ἢ ἐν διαζεύξει, καθάπερ
either in conjunction is-sung or in disjunction just-as
 ἔμπροσθεν εἴρηται. δέδεικται δ' ἡ μὲν συναφὴ ἐκ
before has-been-said has-been-shown and the indeed conjunction from
 τῶν τοῦ διὰ τεσσάρων μερῶν μόνων συγκεκμημένη, ἡ
the of-the through four parts alone composed the
 δὲ διάζευξις ἐν προστιθείσα τὸ ἴδιον διάστημα, τοῦτο
but disjunction one adding the proper interval this
 δ' ἐστὶν ὁ τόνος· προστεθέντος δὲ τοῦ τόνου πρὸς τὰ
and is the tone having-been-added and the tone to the
 τοῦ διὰ τεσσάρων μέρη τὸ διὰ πέντε συμπληροῦται.
of-the through four parts the through five is-filled-up
 "Ὡστ' εἶναι φανερόν ὅτι, ἐπειδήπερ οὐδὲν τῶν γενῶν
so-as to-be evident that since-indeed none of-the genera

ἐνδέχεται κατὰ μίαν χροάν λαμβανόμενον ἐκ πλειόνων
is-possible in one shade taken from more
 ἀσυνθέτων συντεθῆναι τῶν ἐν τῷ διὰ πέντε
incomposite(-intervals) to-be-compounded than-those in the through five
 ὄντων, δῆλον ὅτι ἐν ἐκάστῳ γένει τοσαῦτα ἔσται τὰ
being clear that in each genus so-many will-be the
 πλείιστα ἀσύνθετα ὅσα ἐν τῷ διὰ πέντε.
most incomposites as-many-as in the through five

III.4 · PYKNON AGAINST PYKNON

Why prove only the maximum? Because a genus will sometimes be compounded of fewer incomposites, never of more. Then the first theorems: pyknon is not sung against pyknon, whole or part; in conjunction pyknon and ditone alternate; and the notes enclosing the tone of disjunction are both lowest notes of a pyknon.

Ταράττειν δ' εἴωθεν ἐνίους καὶ ἐν τούτῳ τῷ προβλήματι
to-trouble and is-wont some also in this the problem
 πῶς τὰ πλείιστα προστίθεται καὶ διὰ τί οὐχ ἀπλῶς
how the most is-added and through what not simply
 δείκνυται, ὅτι ἐκ τοσούτων ἀσυνθέτων ἕκαστον τῶν
it-is-shown that from so-many incomposites each of-the
 γενῶν συνέστηκεν ὅσα ἐστὶν ἐν τῷ διὰ πέντε. Πρὸς
genera is-composed as-many-as are in the through five against
 οὓς ταῦτα λέγεται, ὅτι ἐξ ἐλαττόνων ἀσυνθέτων ἔσται
whom these(-things) are-said that from fewer incomposites will-be
 ποθ' ἕκαστον τῶν γενῶν συγκεῖμενον ἐκ πλειόνων δ'
sometimes each of-the genera composed from more but
 οὐδέποτε. Διὰ ταύτην δὲ τὴν αἰτίαν τοῦτο αὐτὸ πρῶτον
never through this and the cause this itself first
 ἀποδείκνυται, ὅτι οὐκ ἐνδέχεται ἐκ πλειόνων ἀσυνθέτων
is-demonstrated that not is-possible from more incomposites

συντεθῆναι τῶν γενῶν ἕκαστον ἢ ὅσα ἐν τῷ διὰ
to-be-compounded of-the genera each than as-many in the through
 πέντε τυγχάνει ὄντα. ὅτι δὲ καὶ ἐξ ἐλαττόνων ποτὲ
five happen being that but also from fewer sometimes
 συντεθήσεται ἕκαστον αὐτῶν, ἐν τοῖς ἔπειτα δείκνυται.
will-be-compounded each of-them in the(-things) hereafter is-shown
 Πυκνὸν δὲ πρὸς πυκνῷ οὐ μελωδεῖται οὔθ' ὅλον οὔτε
(a)-pyknon and against (a)-pyknon not is-sung either whole or
 μέρος αὐτοῦ. Συμβήσεται γὰρ μήτε τοὺς τετάρτους
(a)-part of-it it-will-befall for neither the fourths
 τῷ διὰ τεσσάρων συμφωνεῖν μήτε τοὺς πέμπτους
with-the through four to-concord nor the fifths
 τῷ διὰ πέντε· οἱ δὲ οὕτω κείμενοι τῶν φθόγγων
with-the through five the but thus lying of-the notes
 ἐκμελεῖς ἦσαν. τῶν δὲ τὸ δίτονον περιεχόντων ὁ
unmelodic were of-the(-notes) but the ditone enclosing the
 μὲν βαρύτερος ὀξύτατός ἐστι πυκνοῦ ὁ δ' ὀξύτερος
one heavier sharpest is of-a-pyknon the other sharper
 βαρύτατος· ἀναγκαῖον γὰρ ἐν τῇ συναφῇ τῶν πυκνῶν
heaviest necessary for in the conjunction the pykna
 διὰ τεσσάρων συμφωνούντων ἀνὰ μέσον αὐτῶν κεῖσθαι
through four concording in (the)-middle of-them to-lie
 τὸ δίτονον, ὡσαύτως δὲ καὶ τῶν διτόνων διὰ τεσσάρων
the ditone likewise and also the ditones through four
 συμφωνούντων ἀναγκαῖον ἐν μέσῳ κεῖσθαι τὸ πυκνόν·
concording necessary in (the)-middle to-lie the pyknon
 τούτων δ' οὕτως ἐχόντων ἀναγκαῖον ἐναλλάξ τό τε
these and thus holding necessary alternately the both
 πυκνὸν καὶ τὸ δίτονον κεῖσθαι, ὥστε δηλὸν ὅτι ὁ μὲν
pyknon and the ditone to-lie so-that clear that the one
 βαρύτερος τῶν περιεχόντων τὸ δίτονον ὀξύτατος ἔσται
heavier of-the(-notes) enclosing the ditone sharpest will-be

τοῦ ἐπὶ τὸ βαρὺ κειμένου πυκνοῦ, ὁ δ' ὀξύτερος τοῦ ἐπὶ
of-the at the heavy lying pyknon the other sharper of-the at
 τὸ ὀξύ κειμένου πυκνοῦ βαρύτατος· οἱ δὲ τὸν τόνον
the sharp lying pyknon heaviest the(-notes) and the tone
 περιέχοντες ἀμφοτέροί εἰσι πυκνοῦ βαρύτατοι, τίθεται γὰρ
enclosing both are of-a-pyknon heaviest is-placed for
 ὁ τόνος ἐν τῇ διαζεύξει μεταξύ τοιούτων τετραχόρδων ἃ
the tone in the disjunction between such tetrachords which
 οἱ περιέχοντες βαρύτατοί εἰσι πυκνοῦ ὑπὸ τούτων δὲ καὶ
the enclosing(-notes) heaviest are of-a-pyknon by these and also
 ὁ τόνος περιέχεται. ὁ μὲν γὰρ βαρύτερος τῶν τὸν
the tone is-enclosed the one for heavier of-the(-notes) the
 τόνον περιεχόντων ὀξύτερός ἐστι τῶν τὸ βαρύτερον
tone enclosing (the)-sharper is of-the(-notes) the heavier
 τῶν τετραχόρδων περιεχόντων, ὁ δὲ ὀξύτερος τῶν
of-the tetrachords enclosing the other sharper of-the(-notes)
 τὸν τόνον περιεχόντων βαρύτερός ἐστι τῶν τὸ ὀξύτερον
the tone enclosing (the)-heavier is of-the(-notes) the sharper
 τῶν τετραχόρδων περιεχόντων, ὥστ' εἶναι δηλὸν ὅτι
of-the tetrachords enclosing so-as to-be clear that
 οἱ τὸν τόνον περιέχοντες βαρύτατοι ἔσονται πυκνοῦ.
the(-notes) the tone enclosing heaviest will-be of-a-pyknon

III.5 • THE PLACEMENT THEOREMS

Two ditones are not placed in succession, and neither are two tone-intervals in the enharmonic or the chromatic. The diatonic takes three tone-intervals in a row but no more, and it never takes two semitones in succession. The first proof works by reducing the case to two successive pykna; the rest show that the added note concords neither at the fourth with the fourth note nor at the fifth with the fifth, or that the interval placed the other way changes the genus.

Δύο δὲ δίτονα ἐξῆς οὐ τεθήσεται. Τιθέσθω γάρ·
two and ditones in-succession not will-be-placed let-be-placed for
 ἀκολουθήσει δὴ τῷ μὲν ὀξυτέρῳ διτόνῳ πυκνὸν ἐπὶ
there-will-follow indeed the indeed sharper ditone (a)-pyknon at
 τὸ βαρὺ, ὀξύτατος γὰρ ἦν πυκνοῦ ὁ ἐπὶ τὸ βαρὺ
the heavy sharpest for was of-a-pyknon the(-note) at the heavy
 ὀρίζων τὸ δίτονον· τῷ δὲ βαρυτέρῳ διτόνῳ ἐπὶ τὸ ὀξὺ
bounding the ditone the and heavier ditone at the sharp
 ἀκολουθήσει πυκνόν, βαρύτατος γὰρ ἦν πυκνοῦ ὁ
will-follow (a)-pyknon heaviest for was of-a-pyknon the(-note)
 ἐπὶ τὸ ὀξὺ ὀρίζων τὸ δίτονον. Τούτου δὲ συμβαίνοντος
at the sharp bounding the ditone this and befalling
 δύο πυκνὰ ἐξῆς τεθήσεται· τούτου δὲ ἐκμελοῦς ὄντος
two pykna in-succession will-be-placed this and unmelodic being
 ἐκμελὲς ἔσται καὶ τὰ δύο δίτονα ἐξῆς τίθεσθαι.
unmelodic will-be also the two ditones in-succession to-be-placed
 Ἐν ἀρμονίᾳ δὲ καὶ χρώματι δύο τονιαῖα ἐξῆς
in harmonia but and chroma two tone-sized(-intervals) in-succession
 οὐ τεθήσεται. Τιθέσθω γὰρ ἐπὶ τὸ ὀξὺ πρῶτον· ἀναγκαῖον
not will-be-placed let-be-placed for at the sharp first necessary
 δὴ εἴπερ ἐστὶν ἐμμελὲς ὁ τὸν προστεθέντα τόνον
indeed if-indeed is melodic the the added tone
 ὀρίζων φθόγγος ἐπὶ τὸ ὀξὺ συμφωνεῖν ἥτοι τῷ τετάρτῳ
bounding note at the sharp to-concord either with-the fourth
 τῶν ἐξῆς διὰ τεσσάρων ἢ τῷ πέμπτῳ διὰ πέντε·
of-the successive through four or with-the fifth through five
 μηδετέρου δὲ τούτων αὐτῷ συμβαίνοντος ἀναγκαῖον ἐκμελὴ
neither but of-these to-it befalling necessary unmelodic
 εἶναι. ὅτι δ' οὐ συμβήσεται φανερόν· ἐναρμόνιος μὲν γὰρ
to-be that and not it-will-befall (is)-evident enharmonic indeed for
 οὔσα ἢ λιχανὸς τέσσαρας τόνους ἀπὸ τοῦ προσληφθέντος
being the lichanos four tones from the added(-note)

ἀφέξει φθόγγος τέταρτος ὢν, χρωματικὴ δ' εἴτε μαλακοῦ
will-stand-off (a)-note fourth being chromatic and whether of-soft
 χρώματος εἴθ' ἡμιολίου μείζον ἀφέξει διάστημα τοῦ
chroma or of-hemiolic (a)-greater will-stand-off interval than-the
 διὰ πέντε, τονιαίου δὲ γενομένη διὰ πέντε συμφωνήσει
through five of-tone-sized and having-become through five will-concord
 τῷ προσληφθέντι φθόγγῳ. οὐκ ἔδει δέ γε, ἀλλὰ ἥτοι
with-the added note not ought but at-least but either
 τὸν τέταρτον διὰ τεσσάρων συμφωνεῖν ἢ τὸν πέμπτον
the fourth through four to-concord or the fifth
 διὰ πέντε. Τούτων δ' οὐδέτερον γίνεται, ὥστε φανερόν,
through five of-these and neither happens so-that (is)-evident
 ὅτι ἐκμελὴς ἔσται ὁ τὸν προσληφθέντα τόνον ὀρίζων
that unmelodic will-be the the added tone bounding
 φθόγγος ἐπὶ τὸ ὀξύ. Ἐπὶ δὲ τὸ βαρὺ τιθέμενον τὸ δεύτερον
note at the sharp at but the heavy placed the second
 τονιαῖον διάτονον ποιήσει τὸ γένος, ὥστε δῆλον ὅτι ἐν
tone-sized(-interval) diatonic will-make the genus so-that clear that in
 65 ἀρμονία καὶ χρώματι οὐ τεθήσεται δύο τονιαῖα
harmonia and chroma not will-be-placed two tone-sized(-intervals)
 ἐξῆς. Ἐν διατόνῳ δὲ τρία τονιαῖα ἐξῆς
in-succession in diatonic and three tone-sized(-intervals) in-succession
 τεθήσεται, πλείω δ' οὐ· ὁ γὰρ τὸ τέταρτον τονιαῖον
will-be-placed more but not the for the fourth tone-sized
 ὀρίζων φθόγγος οὔτε τῷ τετάρτῳ διὰ τεσσάρων οὔτε
bounding note neither with-the fourth through four nor
 τῷ πέμπτῳ διὰ πέντε συμφωνήσει.
with-the fifth through five will-concord
 Ἐν τῷ αὐτῷ δὲ γένει τούτῳ δύο ἡμιτονιαῖα ἐξῆς
in the same and genus this two half-tone-sized(-intervals) in-succession
 οὐ τεθήσεται. Τιθέσθω γὰρ πρῶτον ἐπὶ τὸ βαρὺ τοῦ
not will-be-placed let-be-placed for first at the heavy of-the

ὑπάρχοντος ἡμιτονίου τὸ προστεθὲν ἡμιτόνιον· συμβαίνει δὴ
 existing semitone the added semitone it-befalls indeed
 τὸν ὀρίζοντα φθόγγον τὸ προστεθὲν ἡμιτόνιον μήτε τῷ
 the bounding note the added semitone neither with-the
 τετάρτῳ διὰ τεσσάρων συμφωνεῖν μήτε τῷ πέμπτῳ
 fourth through four to-concord nor with-the fifth
 διὰ πέντε. οὕτω μὲν οὖν ἐκμελῆς ἔσται τοῦ ἡμιτονιαίου
 through five thus indeed then unmelodic will-be of-the half-tone-sized
 ἢ θέσις. ἐὰν δ' ἐπὶ τὸ ὀξὺ τεθῇ τοῦ ὑπάρχοντος, χρῶμα
 the position if but at the sharp it-be-placed of-the existing chroma
 ἔσται, ὥστε δῆλον ὅτι ἐν διατόνῳ δύο ἡμιτονιαῖα οὐ
 it-will-be so-that clear that in diatonic two half-tone-sized(-intervals) not
 τεθήσεται ἐξῆς.— Ποῖα μὲν οὖν τῶν ἀσυνθέτων δύναται
 will-be-placed in-succession what-sorts indeed then of-the incompesites can
 ἴσα ἐξῆς τίθεσθαι καὶ πόσα τὸν ἀριθμὸν καὶ ποῖα
 (as)-equal in-succession be-placed and how-many in number and what-sorts
 τοῦναντίον πέπονθεν ἀπλῶς οὐ δυνάμενα τίθεσθαι ἴσα
 the-contrary have-suffered simply not being-able to-be-placed equal
 ὄντα ἐξῆς, δέδεικται· περὶ δὲ τῶν ἀνίσων νῦν λεκτέον.
 being in-succession has-been-shown about but the unequal now one-must-speak

III.6 • THE ROADS FROM EACH INTERVAL

A pyknon stands next to a ditone on either side, but a tone stands next to a ditone only above it, and next to a pyknon only below. From the ditone, then, two roads lead up and one down; from the pyknon two lead down and one up; from the tone one leads each way. Each result is reached by ruling out the placements that would be unmelodic.

Πυκνὸν μὲν οὖν πρὸς διτόνω καὶ ἐπὶ τὸ βαρὺ καὶ ἐπὶ
 (a)-pyknon indeed then against (a)-ditone both at the heavy and at
 τὸ ὀξύ τίθεται. Δέδεικται γὰρ ἐν τῇ συναφῇ ἐναλλάξ
 the sharp is-placed has-been-shown for in the conjunction alternately
 τιθέμενα ταῦτα τὰ διαστήματα, ὥστε δῆλον ὅτι ἐκάτερον
 placed these the intervals so-that clear that each
 ἐκατέρου καὶ ἐπὶ τὸ βαρὺ καὶ ἐπὶ τὸ ὀξύ τεθήσεται.

of-each both at the heavy and at the sharp will-be-placed
 Τόνος δὲ πρὸς διτόνω ἐπὶ τὸ ὀξύ μόνον τίθεται. Τιθέσθω
 (a)-tone and against (a)-ditone at the sharp only is-placed let-be-placed
 γὰρ ἐπὶ τὸ βαρὺ· συμβήσεται δὴ πίπτειν ἐπὶ τὴν
 for at the heavy it-will-befall indeed to-fall upon the

66 αὐτὴν τάσῳ ὀξύτατόν τε πυκνοῦ καὶ βαρύτατον, ὁ
 same tension sharpest both of-a-pyknon and heaviest the(-note)
 μὲν γὰρ τὸ δίτονον ἐπὶ τὸ βαρὺ ὀρίζων ὀξύτατος ἦν
 indeed for the ditone at the heavy bounding sharpest was
 πυκνοῦ, ὁ δὲ τὸν τόνον ἐπὶ τὸ ὀξύ βαρύτατος.

of-a-pyknon the(-note) and the tone at the sharp heaviest
 τούτων δὲ πιπτόντων ἐπὶ τὴν αὐτὴν τάσῳ ἀναγκαῖον
 these and falling upon the same tension necessary
 δύο πυκνὰ τίθεσθαι. τούτου δ' ἐκμελοῦς ὄντος ἀναγκαῖον
 two pykna to-be-placed this and unmelodic being necessary
 καὶ τόνον ἐπὶ τὸ βαρὺ διτονιαίου ἐκμελῆ εἶναι.

also (a)-tone at the heavy of-a-ditone-sized(-interval) unmelodic to-be
 Τόνος δὲ πρὸς πυκνῷ ἐπὶ τὸ βαρὺ μόνον τίθεται.
 (a)-tone and against (a)-pyknon at the heavy only is-placed
 Τιθέσθω γὰρ ἐπὶ τοῦναντίον· συμβήσεται δὴ τὸ αὐτὸ
 let-be-placed for at the-contrary it-will-befall indeed the same
 πάλιν ἀδύνατον, ἐπὶ γὰρ τὴν αὐτὴν τάσῳ ὀξύτατός τε
 again impossibility upon for the same tension sharpest both
 πυκνοῦ πεσεῖται καὶ βαρύτατος, ὥστε δύο πυκνὰ τίθεσθαι
 of-a-pyknon will-fall and heaviest so-as two pykna to-be-placed

ἐξῆς. τούτου δ' ὄντος ἐκμελοῦς ἀναγκαῖον καὶ τὴν
in-succession this and being unmelodic necessary also the
 τόνου θέσιν τὴν ἐπὶ τὸ ὀξύ τοῦ πυκνοῦ ἐκμελῇ εἶναι.
of-a-tone position that at the sharp of-the pyknon unmelodic to-be
 Ἐν διατόνῳ δὲ τόνου ἐφ' ἐκάτερα ἡμιτόνιον οὐ μελωδεῖται.
in diatonic and of-a-tone on either-side (a)-semitone not is-sung
 Συμβήσεται γὰρ μήτε τοὺς τετάρτους τῶν ἐξῆς διὰ
it-will-befall for neither the fourths of-the successive through
 τεσσάρων συμφωνεῖν μήτε τοὺς πέμπτους διὰ πέντε.
four to-concord nor the fifths through five
 Δύο δὲ τόνων ἢ τριῶν ἡμιτόνιον ἐφ' ἐκάτερα μελωδεῖται·
of-two but tones or three (a)-semitone on either-side is-sung
 συμφωνήσουσι γὰρ ἢ οἱ τέταρτοι διὰ τεσσάρων ἢ
will-concord for either the fourths through four or
 οἱ πέμπτου διὰ πέντε.
the fifths through five
 Ἀπὸ ἡμιτονίου μὲν ἐπὶ τὸ ὀξύ δύο ὁδοὶ καὶ ἐπὶ τὸ βαρὺ
from (a)-semitone indeed toward the sharp two roads and toward the heavy
 δύο, ἀπὸ δὲ τοῦ διτόνου δύο μὲν ἐπὶ τὸ ὀξύ, μία δ' ἐπὶ τὸ
two from and the ditone two indeed toward the sharp one and toward the
 βαρὺ. Δέδεικται γὰρ ἐπὶ μὲν τὸ ὀξύ πυκνὸν τεθειμένον καὶ
heavy has-been-shown for at indeed the sharp (a)-pyknon placed and
 τόνος, πλείους δὲ τούτων οὐκ ἔσονται ὁδοὶ ἀπὸ τοῦ εἰρημένου
(a)-tone more and than-these not will-be roads from the said
 διαστήματος ἐπὶ τὸ ὀξύ· ἐπὶ δὲ τὸ βαρὺ πυκνὸν μόνον,
interval toward the sharp toward and the heavy (a)-pyknon only
 λείπεται μὲν γὰρ τῶν ἀσυνθέτων τὸ δίτονον μόνον· δύο δὲ
remains indeed for of-the incompesites the ditone only two but
 δίτονα ἐξῆς οὐκέτι τίθεται. ὥστε δῆλον ὅτι δύο μόναι
ditones in-succession no-longer is-placed so-that clear that two only

- 67 ὁδοὶ ἔσονται ἀπὸ τοῦ διτόνου ἐπὶ τὸ ὀξύ. ἐπὶ δὲ τὸ
roads will-be from the ditone toward the sharp toward and the
βαρὺ μία· δέδεικται γάρ, ὅτι οὔτε δίτονον πρὸς διτόνω
heavy one has-been-shown for that neither (a)-ditone against (a)-ditone
τεθήσεται οὔτε τόνος ἐπὶ τὸ βαρὺ διτόνου, ὥστε λείπεται
will-be-placed nor (a)-tone at the heavy of-a-ditone so-that remains
τὸ πυκνόν. φανερόν δὴ ὅτι ἀπὸ διτόνου ἐπὶ μὲν τὸ
the pyknon evident indeed that from (a)-ditone toward indeed the
ὀξύ δύο ὁδοί, ἡ μὲν ἐπὶ τὸν τόνον ἡ δ' ἐπὶ τὸ
sharp two roads the one toward the tone the other toward the
πυκνόν, ἐπὶ δὲ τὸ βαρὺ μία, ἡ ἐπὶ τὸ πυκνόν.
pyknon toward and the heavy one that toward the pyknon
Ἀπὸ πυκνοῦ δ' ἐναντίως ἐπὶ μὲν τὸ βαρὺ δύο ὁδοί, ἐπὶ δὲ
from (a)-pyknon and contrariwise toward indeed the heavy two roads toward and
τὸ ὀξύ μία. Δέδεικται γάρ ἀπὸ πυκνοῦ ἐπὶ τὸ βαρὺ δίτονον
the sharp one has-been-shown for from (a)-pyknon toward the heavy (a)-ditone
τεθειμένον καὶ τόνος· τρίτη δ' οὐκ ἔσται ὁδός, λείπεται μὲν
placed and (a)-tone (a)-third but not will-be road remains indeed
γὰρ τῶν ἀσυνθέτων τὸ πυκνόν, δύο δὲ πυκνὰ ἐξῆς οὐ
for of-the in-composites the pyknon two but pykna in-succession not
τίθεται, ὥστε δηλὸν ὅτι μόναι δύο ὁδοὶ ἔσονται ἀπὸ πυκνοῦ
is-placed so-that clear that only two roads will-be from (a)-pyknon
ἐπὶ τὸ βαρὺ. ἐπὶ δὲ τὸ ὀξύ μία ἡ ἐπὶ τὸ δίτονον· οὔτε
toward the heavy toward and the sharp one that toward the ditone neither
γὰρ πυκνὸν πρὸς πυκνῷ τίθεται οὔτε τόνος ἐπὶ τὸ ὀξύ
for (a)-pyknon against (a)-pyknon is-placed nor (a)-tone at the sharp
πυκνοῦ, ὥστε λείπεται τὸ δίτονον. Φανερόν δὴ ὅτι ἀπὸ
of-a-pyknon so-that remains the ditone evident indeed that from
πυκνοῦ ἐπὶ μὲν τὸ βαρὺ δύο ὁδοί, ἡ τε ἐπὶ τὸν τόνον καὶ
(a)-pyknon toward indeed the heavy two roads that both toward the tone and
ἡ ἐπὶ τὸ δίτονον, ἐπὶ δὲ τὸ ὀξύ μία, ἡ ἐπὶ τὸ δίτονον.
that toward the ditone toward and the sharp one that toward the ditone

Ἀπὸ δὲ τόνου μία ἐφ' ἑκάτερα ὁδός, ἐπὶ μὲν τὸ βαρὺ ἐπὶ
 from and (a)-tone one on either-side road toward indeed the heavy toward
 τὸ δίτονον ἐπὶ δὲ τὸ ὀξύ ἐπὶ τὸ πυκνόν. Ἐπὶ μὲν τὸ
 the ditone toward and the sharp toward the pyknon at indeed the
 βαρὺ δέδεικται ὅτι οὔτε τόνος τίθεται οὔτε πυκνόν, ὥστε
 heavy has-been-shown that neither (a)-tone is-placed nor (a)-pyknon so-that
 λείπεται τὸ δίτονον· ἐπὶ δὲ τὸ ὀξύ δέδεικται ὅτι οὔτε τόνος
 remains the ditone at and the sharp has-been-shown that neither (a)-tone
 τίθεται οὔτε δίτονον, ὥστε λείπεται τὸ πυκνόν. Φανερόν
 is-placed nor (a)-ditone so-that remains the pyknon evident
 δὴ ὅτι ἀπὸ τόνου μία ἐφ' ἑκάτερα ὁδός, ἐπὶ μὲν τὸ βαρὺ
 indeed that from (a)-tone one on either-side road toward indeed the heavy
 ἐπὶ τὸ δίτονον, ἐπὶ δὲ τὸ ὀξύ ἐπὶ τὸ πυκνόν.
 toward the ditone toward and the sharp toward the pyknon

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III.7 • THE ROADS COUNTED BY FUNCTION

The same holds in the chromatic and diatonic shades, with the interval between mese and lichanos taken in place of the ditone. Some object that the roads must be unlimited, since these magnitudes are unlimited; the answer is that music is bounded by function, form, and position rather than by magnitude, and counted that way the roads are still two from the pyknon downward and one from the tone each way. In the chromatic and the enharmonic every note partakes of a pyknon.

Ὅμοιως δ' ἔξει καὶ ἐπὶ τῶν χρωμάτων πλὴν τό γε
 likewise and it-will-hold also in the chromata except the at-least
 μέσης καὶ λιχανοῦ διάστημα μεταλαμβάνεται ἀντὶ διτόνου
 of-mese and lichanos interval is-substituted instead of-a-ditone
 τὸ γιγνόμενον καθ' ἑκάστην χροάν κατὰ τὸ τοῦ
 the(-interval) arising in each shade according-to the of-the
 πυκνοῦ μέγεθος. Ὅμοιως δ' ἔξει καὶ ἐπὶ τῶν διατόνων·
 pyknon magnitude likewise and it-will-hold also in the diatonics

ἀπὸ γὰρ τοῦ κοινοῦ τόνου τῶν γενῶν μία ἔσται ἐφ' ἑκάτερα
from for the common tone of-the genera one will-be on either-side
 ὁδός, ἐπὶ μὲν τὸ βαρὺ ἐπὶ τὸ μέσης καὶ λιχανοῦ διάστημα
road toward indeed the heavy toward the of-mese and lichanos interval
 ὃ τι ἄν ποτε τυγχάνῃ ὄν καθ' ἑκάστην χροάν τῶν
what ever — sometime it-happen being in each shade of-the
 διατόνων, ἐπὶ δὲ τὸ ὀξὺ ἐπὶ τὸ παραμέσης καὶ τρίτης.
diatonics toward and the sharp toward that of-paramese and trite
 Ἦδη δέ τισι καὶ τοῦτο τὸ πρόβλημα παρέσχε πλάνην
already and to-some also this the problem has-afforded wandering
 θαυμάζουσι γὰρ πῶς οὐχὶ τοῦναντίον συμβαίνει· ἄπειροι γὰρ
they-wonder for how not the-contrary befalls boundless for
 τινες αὐτοῖς φαίνονται εἶναι ὁδοὶ ἐφ' ἑκάτερα τοῦ τόνου,
some to-them appear to-be roads on either-side of-the tone
 ἐπειδήπερ τοῦ τε μέσης καὶ λιχανοῦ διαστήματος ἄπειρα
since-indeed of-the both mese and lichanos interval boundless
 μεγέθη φαίνονται εἶναι τοῦ τε πυκνοῦ ὡσαύτως. Πρὸς δὴ
magnitudes appear to-be of-the and pyknon likewise against indeed
 ταῦτα πρῶτον μὲν τοῦτ' ἐλέχθη, ὅτι οὐδὲν μᾶλλον ἐπὶ
these first indeed this was-said that in-nothing more upon
 τούτου τοῦ προβλήματος ἐπιβλέψειεν ἄν τις τοῦτο ἢ ἐπὶ
this the problem would-fix-upon — one this than upon
 τῶν προτέρων. δῆλον γὰρ ὅτι καὶ τῶν ἀπὸ τοῦ πυκνοῦ
the former(-ones) clear for that also of-those from the pyknon
 τὴν ἑτέραν τῶν ὁδῶν ἄπειρα μεγέθη συμβήσεται λαμβάνειν
the other of-the roads boundless magnitudes it-will-befall to-take
 καὶ τῶν ἀπὸ τοῦ διτόνου δ' ὡσαύτως· τό τε γὰρ τοιοῦτον
and of-those from the ditone too likewise the both for such
 διάστημα οἷον τὸ μέσης καὶ λιχανοῦ ἄπειρα λαμβάνει μεγέθη
interval as that of-mese and lichanos boundless takes magnitudes
 τό τε τοιοῦτον οἷον τὸ πυκνὸν ταὐτὸ πάσχει πάθος τῷ
the and such as the pyknon the-same suffers affection with-the

ἔμπροσθεν εἰρημένῳ διαστήματι, ἀλλ' ὅμως οὐδὲν ἦττον
before said interval but nevertheless in-nothing less
 ἀπὸ τε τοῦ πυκνοῦ δύο γίνονται ὁδοὶ ἐπὶ τὸ βαρὺ καὶ ἀπὸ
from both the pyknon two arise roads toward the heavy and from
 τοῦ διτόνου ἐπὶ τὸ ὀξύ, ὡσαύτως δὲ καὶ ἀπὸ τοῦ τόνου
the ditone toward the sharp likewise and also from the tone
 μία γίγνεται ἐφ' ἑκάτερα ὁδός. Καθ' ἑκάστην γὰρ χρόαν ἐφ'
one arises on either-side road in each for shade of
 ἑκάστου γένους ληπτέον ἐστὶ τὰς ὁδοὺς— δεῖ γὰρ ἕκαστον 69
each genus must-be-taken it-is the roads must for each
 τῶν ἐν τῇ μουσικῇ καθ' ὃ πεπερασται κατὰ
of-the(-things) in the music by that-which it-is-bounded in
 τοῦτο τιθέναι τε καὶ τάττειν εἰς τὰς ἐπιστήμας, ἥ
this to-place both and to-rank into the sciences in-which
 δ' ἄπειρόν ἐστιν ἔαν. κατὰ μὲν οὖν τὰ μεγέθη τῶν
and boundless it-is to-let-be in indeed then the magnitudes of-the
 διαστημάτων καὶ τὰς τῶν φθόγγων τάσεις ἄπειρά πως
intervals and the of-the notes tensions boundless somehow
 φαίνεται εἶναι τὰ περὶ μέλος, κατὰ δὲ τὰς δυνάμεις
appear to-be the(-things) about melody in but the functions
 καὶ κατὰ τὰ εἶδη καὶ κατὰ τὰς θέσεις πεπερασμένα
and in the forms and in the positions bounded
 τε καὶ τεταγμένα. Εὐθέως οὖν ἀπὸ τοῦ πυκνοῦ αἱ ὁδοὶ
both and ordered straightway then from the pyknon the roads
 ἐπὶ τὸ βαρὺ τῇ τε δυνάμει καὶ τοῖς εἶδεσιν ὠρισμένοι
toward the heavy by-the both function and the forms determined
 τ' εἰσὶ καὶ δύο μόνον τὸν ἀριθμόν, ἡ μὲν γὰρ κατὰ
both are and two only in number the one for by
 τόνον εἰς διάζευξιν ἄγει τὸ τοῦ συστήματος εἶδος, ἡ δὲ
(a)-tone into disjunction leads the of-the system form the other
 κατὰ θάτερον διάστημα, ὃ τι δήποτ' ἔχει μέγεθος, εἰς
by the-other interval what ever soever it-has magnitude into

συναφήν. δηλον δ' ἐκ τούτων ὅτι καὶ ἀπὸ τοῦ τόνου μία
conjunction clear and from these that also from the tone one
 τ' ἔσται ἐφ' ἑκάτερα ὁδὸς καὶ ἐνὸς εἵδους συστήματος
both will-be on either-side road and of-one form of-system
 αἰτίαι αἱ συναμφότεραι ὁδοί, τῆς διαζεύξεως. Ὅτι δ'
causes the both-together roads (namely)-of-the disjunction that and
 ἂν τις μὴ κατὰ μίαν χροάν ἐνὸς γένους ἐπιχειρῇ τὰς ἀπὸ
if one not in one shade of-one genus attempt the from
 τῶν διαστημάτων ὁδοὺς ἐπισκοπεῖν ἀλλ' ἅμα κατὰ πάσας
the intervals roads to-examine but at-once in all
 ἀπάντων τῶν γενῶν εἰς ἀπειρίαν ἐμπεσεῖται, φανερόν ἐκ
of-all the genera into boundlessness be-will-fall evident both
 τε τῶν εἰρημένων καὶ ἐξ αὐτοῦ τοῦ πράγματος.
from the(-things) said and from itself the matter
 Ἐν χρώματι δὲ καὶ ἀρμονίᾳ πᾶς φθόγγος πυκνοῦ
in chroma moreover and harmonia every note of-a-pyknon
 μετέχει. Πᾶς μὲν γὰρ φθόγγος ἐν τοῖς εἰρημένοις γένεσιν
partakes every indeed for note in the said genera
 ἥτοι πυκνοῦ μέρος ὀρίζει ἢ τόνον ἢ τι τοιοῦτον οἶον τὸ
either of-a-pyknon (a)-part bounds or (a)-tone or some such as the
 70 μέσης καὶ λιχανοῦ διάστημα. οἱ μὲν οὖν τὰ τοῦ
of-mese and lichanos interval the(-notes) indeed then the of-the
 πυκνοῦ μέρη ὀρίζοντες οὐδὲν δέονται λόγου, φανεροὶ
pyknon parts bounding no need of-argument evident
 γὰρ εἰσι πυκνοῦ μετέχοντες· οἱ δὲ τὸν τόνον
for they-are of-a-pyknon partaking the(-notes) and the tone
 περιέχοντες ἐδείχθησαν ἔμπροσθεν πυκνοῦ βαρύτατοι ὄντες
enclosing were-shown before of-a-pyknon heaviest being
 ἀμφότεροι· τῶν δὲ τὸ λοιπὸν διάστημα περιεχόντων
both of-the(-notes) and the remaining interval enclosing
 ὁ μὲν βαρύτερος ὀξύτατος ἐδείχθη πυκνοῦ ὁ δ'
the one heavier sharpest was-shown of-a-pyknon the other

οξύτερος βαρύτατος. Ὡστ' ἐπειδὴ τοσαῦτα μὲν ἐστὶ μόνα
 sharper heaviest so-that since so-many indeed are only
 τὰ ἀσύνθετα, ἕκαστον δ' αὐτῶν ὑπὸ τοιούτων φθόγγων
 the in-composites each and of-them by such notes
 περιέχεται ὧν ἑκάτερος πυκνοῦ μετέχει, δῆλον ὅτι πᾶς
 is-enclosed of-which each of-a-pyknon partakes clear that every
 φθόγγος ἐν ἀρμονίᾳ καὶ χρώματι πυκνοῦ μετέχει.
 note in harmonia and chroma of-a-pyknon partakes

III.8 · THE ROADS FROM EACH NOTE

From the lowest note of a pyknon two roads lead each way; from the other two notes only one. Aristoxenus restates the earlier interval-theorems as theorems about notes: the note that ends a pyknon is the note that bounds the ditone. The middle note has a diesis on either side, so neither a tone nor a ditone can stand beside it without putting three dieses in a row.

Ὅτι δὲ τῶν ἐν πυκνῷ κειμένων φθόγγων τρεῖς εἰσὶ χώραι,
 that and of-the in (a)-pyknon lying notes three are places
 ῥάδιον συνιδεῖν, ἐπειδήπερ πρὸς πυκνῷ οὔτε πυκνὸν τίθεται
 (is)-easy to-see-together since-indeed at (a)-pyknon neither (a)-pyknon is-placed
 οὔτε πυκνοῦ μέρος. δῆλον γὰρ ὅτι διὰ ταύτην τὴν αἰτίαν
 nor of-a-pyknon (a)-part clear for that through this the cause
 οὐκ ἔσονται πλείους τῶν εἰρημένων χώραι φθόγγων.
 not will-be more than-the said places of-notes
 Ὅτι δὲ ἀπὸ μόνου τοῦ βαρυτάτου δύο ὁδοὶ εἰσὶν ἐφ'
 that and from only the heaviest two roads are on
 ἑκάτερα, ἀπὸ δὲ τῶν λοιπῶν μία ὁδὸς ἐφ' ἑκάτερα,
 either-side from and the remaining(-two) one road on either-side
 δεικτέον. ἦν δὲ δεδειγμένον ἐν τοῖς ἔμπροσθεν, ὅτι
 must-be-shown was and shown in the(-things) before that

ἀπὸ πυκνοῦ ἐπὶ τὸ βαρὺ δύο ὁδοὶ εἰσιν, ἡ μὲν ἐπὶ τὸν
from (a)-pyknon toward the heavy two roads are the one toward the
 τόνον ἢ δ' ἐπὶ τὸ δίτονον. ἔστι δὲ τὸ ἀπὸ πυκνοῦ δύο
tone the other toward the ditone is and the from (a)-pyknon two
 ὁδοὺς εἶναι τὸ αὐτὸ τῷ ἀπὸ τοῦ βαρυτάτου τῶν ἐν
roads to-be the same as-the from the heaviest of-the(-notes) in
 τῷ πυκνῷ κεμένων δύο ὁδοὺς ἐπὶ τὸ βαρὺ εἶναι, οὗτος
the pyknon lying two roads toward the heavy to-be this(-note)
 γάρ ἐστιν ὁ περαίνων τὸ πυκνόν· ἐδέδεικτο οὖν ὅτι
for is the(-one) ending the pyknon had-been-shown then that
 ἀπὸ διτόνου ἐπὶ τὸ ὀξύ δύο ὁδοὶ εἰσιν, ἡ μὲν ἐπὶ τὸν
from (a)-ditone toward the sharp two roads are the one toward the
 τόνον ἢ δ' ἐπὶ τὸ πυκνόν· ἔστι δὲ τὸ ἀπὸ διτόνου δύο
tone the other toward the pyknon is and the from (a)-ditone two
 ὁδοὺς εἶναι τὸ αὐτὸ τῷ ἀπὸ τοῦ ὀξυτέρου τῶν τὸ
roads to-be the same as-the from the sharper of-the(-notes) the
 δίτονον ὀρίζοντων δύο ὁδοὺς ἐπὶ τὸ ὀξύ εἶναι, οὗτος γάρ
ditone bounding two roads toward the sharp to-be this(-note) for
 ἐστιν ὁ ὀρίζων τὸ δίτονον ἐπὶ τὸ ὀξύ. δηλον δ' ὅτι
is the(-one) bounding the ditone at the sharp clear and that
 71 ὁ αὐτὸς τὸ δίτονον ἐπὶ τὸ ὀξύ ὀρίζων καὶ ὁ τὸ
the same(-note) the ditone at the sharp bounding and the(-one) the
 πυκνόν ἐπὶ τὸ βαρὺ βαρύτατος ὢν πυκνοῦ, ἐδέδεικτο
pyknon at the heavy heaviest being of-a-pyknon had-been-shown
 γὰρ καὶ τοῦτο. ὥστ' εἶναι δηλον, ὅτι ἀπὸ τοῦ εἰρημένου
for also this so-as to-be clear that from the said
 φθόγγου δύο ὁδοὶ ἐφ' ἐκάτερα ἔσσονται.
note two roads on either-side will-be

Ὅτι δ' ἀπὸ τοῦ ὀξυτάτου μία ὁδὸς ἐφ' ἐκάτερα, δεικτέον.
that and from the sharpest one road on either-side must-be-shown
 Ἐδέδεικτο δ' ὅτι ἀπὸ πυκνοῦ ἐπὶ τὸ ὀξύ μία ὁδὸς ἐστιν,
had-been-shown and that from (a)-pyknon toward the sharp one road is

οὐδὲν δὲ διαφέρει λέγειν ἀπὸ πυκνοῦ μίαν ὁδὸν εἶναι ἐπὶ
in-nothing and it-differs to-say from (a)-pyknon one road to-be toward
 τὸ ὀξύ ἢ ἀπὸ τοῦ περαίνοντος αὐτὸ φθόγγου διὰ τὴν
the sharp or from the ending it note through the
 εἰρημένην αἰτίαν ἐπὶ τῶν ἔμπροσθεν. δέδεικται δ' ὅτι
said cause in the(-things) before has-been-shown and that
 καὶ ἀπὸ διτόνου μία ὁδὸς ἐστὶν ἐπὶ τὸ βαρὺ, οὐδὲν δὲ
also from (a)-ditone one road is toward the heavy in-nothing and
 διαφέρει λέγειν ἀπὸ διτόνου μίαν ὁδὸν εἶναι ἐπὶ τὸ βαρὺ
it-differs to-say from (a)-ditone one road to-be toward the heavy
 ἢ ἀπὸ τοῦ ὀρίζοντος αὐτὸ φθόγγου διὰ τὴν προειρημένην
or from the bounding it note through the aforesaid
 αἰτίαν· δηλὸν δὲ ὅτι καὶ ὁ αὐτός ἐστι φθόγγος ὃ τε τὸ
cause clear and that also the same is (the)-note the both the
 δίτονον ἐπὶ τὸ βαρὺ ὀρίζων καὶ ὁ τὸ πυκνὸν ἐπὶ τὸ
ditone at the heavy bounding and the(-one) the pyknon at the
 ὀξύ ὀξύτατος ὢν πυκνοῦ. Ὡστ' εἶναι φανερόν ἐκ τούτων,
sharp sharpest being of-a-pyknon so-as to-be evident from these
 ὅτι μία ὁδὸς ἐφ' ἑκάτερα ἔσται ἐπὶ τοῦ εἰρημένου φθόγγου.
that one road on either-side will-be at the said note
 Ὅτι δὲ καὶ ἀπὸ τοῦ μέσου μία ὁδὸς ἐφ' ἑκάτερα ἔσται,
that and also from the middle(-note) one road on either-side will-be
 δεικτέον. Ἐπεὶ τοίνυν ἀναγκαῖον μὲν τῶν τριῶν ἀσυνθέτων
must-be-shown since accordingly necessary indeed of-the three in-composites
 ἓν τι πρὸς τῷ εἰρημένῳ φθόγγῳ τίθεσθαι, ὑπάρχει δὲ
one certain at the said note to-be-placed there-is and
 αὐτοῦ κειμένη διέσις ἐφ' ἑκάτερα, δηλὸν ὅτι οὔτε δίτονον
of-it lying (a)-diesis on either-side clear that neither (a)-ditone
 τεθήσεται πρὸς αὐτῷ κατ' οὐδέτερον τῶν τόπων οὔτε τόνος.
will-be-placed at it in either of-the places nor (a)-tone
 διτόνου γὰρ οὕτω τιθεμένου ἥτοι βαρυτάτος πυκνοῦ ἢ
(a)-ditone for thus being-placed either heaviest of-a-pyknon or

- ὀξύτατος πεσεῖται ἐπὶ τὴν αὐτὴν τάσιν τῷ εἰρημένῳ φθόγγῳ
sharpest will-fall upon the same tension as-the said note
 μέσῳ ὄντι πυκνοῦ, ὥστε γίγνεσθαι τρεῖς διέσεις ἐξῆς
middle being of-a-pyknon so-as to-arise three dieses in-succession
 72 ὁποτέρως ἂν τεθῇ τὸ δίτονον τῶν τόπων· τόνου δὲ
in-whichever-way ever be-placed the ditone of-the places (a)-tone and
 τεθειμένου τὸ αὐτὸ συμβήσεται, βαρύτατος γὰρ πυκνοῦ
having-been-placed the same will-befall heaviest for of-a-pyknon
 πεσεῖται ἐπὶ τὴν αὐτὴν τάσιν μέσῳ πυκνοῦ, ὥστε τρεῖς
will-fall upon the same tension as-the-middle of-a-pyknon so-as three
 διέσεις ἐξῆς τίθεσθαι. τούτων δ' ἐκμελῶν ὄντων δῆλον
dieses in-succession to-be-placed these and unmelodic being clear
 ὅτι μία ὁδὸς ἐφ' ἐκάτερα ἔσται ἀπὸ τοῦ εἰρημένου φθόγγου.
that one road on either-side will-be from the said note
 Ὅτι μὲν οὖν ἀπὸ τοῦ βαρυτάτου τῶν φθόγγων τῶν ἐν
that indeed then from the heaviest of-the notes of-those in
 πυκνῷ κειμένων δύο ἐφ' ἐκάτερα ἔσονται ὁδοὶ ἀπὸ δὲ τῶν
(a)-pyknon lying two on either-side will-be roads from and the
 λοιπῶν ἐκατέρου μία ἐφ' ἐκάτερα ἔσται ὁδός, φανερόν.
remaining(-two) of-each one on either-side will-be road (is)-evident

III.9 • THE COMPOSITION OF THE GENERA

Notes unlike in their share of the pyknon cannot melodically fall on one tension. The diatonic is composed of two, three, or four in-composites; chroma and harmonia of three or four, never two, since only the diatonic allows three equal in-composites in succession. The book breaks off proving that the fourth has exactly three forms.

Ὅτι δ' οὐ τεθήσονται δύο φθόγγοι ἀνόμοιοι κατὰ τὴν τοῦ
that and not will-be-placed two notes unlike in the of-the
 πυκνοῦ μετοχὴν ἐπὶ τὴν αὐτὴν τάσιν ἐμμελῶς, δεικτέον.
pyknon participation upon the same tension melodically must-be-shown

Τιθέσθω γὰρ πρῶτον ὅ τ' ὀξύτατος καὶ ὁ βαρύτατος
let-be-placed for first the both sharpest and the heaviest
 ἐπὶ τὴν αὐτὴν τάσιν· συμβήσεται δὴ τούτου γιγνομένου
upon the same tension it-will-befall indeed this happening
 δύο πυκνὰ ἐξῆς τίθεσθαι. τούτου δ' ἐκμελοῦς ὄντος
two pykna in-succession to-be-placed this and unmelodic being
 ἐκμελὲς τὸ πίπτειν ἐπὶ τὴν αὐτὴν τάσιν τοὺς κατὰ
unmelodic(-is) the to-fall upon the same tension the in
 ταύτην τὴν διαφορὰν ἀνομοίους ἐν πυκνῷ φθόγγους. Δηλον
this the difference unlike in (a)-pyknon notes clear
 δ' ὅτι οὐδ' οἱ κατὰ τὴν λειπομένην διαφορὰν ἀνόμοιοι
and that not-even the in the remaining difference unlike
 φθόγγοι τῆς αὐτῆς τάσεως ἐμμελῶς κοινωνήσουσι· τρεῖς
notes of-the same tension melodically will-share three
 γὰρ ἀναγκαῖον τίθεσθαι διέσεις ἐξῆς, ἐάν τε βαρύτατος
for (it-is)-necessary to-be-placed dieses in-succession whether both the-heaviest
 ἐάν τ' ὀξύτατος τῷ μέσῳ τῆς αὐτῆς μετάσχη τάσεως.
whether and the-sharpest with-the middle of-the same partake tension
 Ὅτι δὲ τὸ διάτονον σύγκειται ἥτοι ἐκ δυοῖν ἢ τριῶν ἢ
that and the diatonic is-composed either from two or three or
 τεσσάρων ἀσυνθέτων, δεικτέον. Ὅτι μὲν οὖν ἐκ τοσούτων
four in-composites must-be-shown that indeed then from so-many
 πλείστων ἀσυνθέτων ἕκαστον τῶν γενῶν συνεστηκός ἐστιν
at-most in-composites each of-the genera composed is
 ὅσα ἐν τῷ διὰ πέντε, δέδεικται πρότερον· ἔστι δὲ ταῦτα
as-many-as in the through five has-been-shown before are and these
 τέσσαρα τὸν ἀριθμόν. ἐὰν οὖν τῶν τεσσάρων τὰ μὲν τρία 73
four in number if then of-the four the indeed three
 ἴσα γίνηται τὸ δὲ τέταρτον ἄνισον— τοῦτο δὲ γίγνεται ἐν
equal become the and fourth unequal this and happens in
 τῷ συντονωτάτῳ διατόνῳ—, δύο ἔσται μεγέθη μόνα ἐξ
the tensest diatonic two will-be magnitudes only from

ὦν τὸ διάτονον συνεστηκὸς ἔσται· ἐὰν δὲ τὰ μὲν δύο ἴσα
which the diatonic composed will-be if and the indeed two equal
 τὰ δὲ δύο ἄνισα τῆς παρυπάτης ἐπὶ τὸ βαρὺ κινηθείσης,
the and two unequal the parhypate toward the heavy having-moved
 τρία ἔσται μεγέθη ἐξ ὧν τὸ διάτονον γένος συνεστηκὸς
three will-be magnitudes from which the diatonic genus composed
 ἔσται, τό τ' ἔλαττον ἡμιτονίου καὶ τόνος καὶ τὸ μείζον
will-be the both smaller than-a-semitone and (a)-tone and the greater
 τόνου· ἐὰν δὲ πάντα τὰ τοῦ διὰ πέντε μεγέθη ἄνισα
than-a-tone if and all the of-the through five magnitudes unequal
 γένηται, τέσσαρα ἔσται μεγέθη ἐξ ὧν τὸ εἰρημένον γένος
become four will-be magnitudes from which the said genus
 ἔσται συνεστηκός. Ὡστ' εἶναι φανερόν ὅτι τὸ διάτονον
will-be composed so-as to-be evident that the diatonic
 ἥτοι ἐκ δυοῖν ἢ τριῶν ἢ τεσσάρων ἀσυνθέτων σύγκειται.
either from two or three or four in-composites is-composed
 Ὅτι δὲ τὸ χρῶμα καὶ ἡ ἀρμονία ἥτοι ἐκ τριῶν ἢ ἐκ
that and the chroma and the harmonia either from three or from
 τεσσάρων σύγκειται, δεικτέον. Ὅντων δὲ τῶν μὲν τοῦ διὰ
four are-composed must-be-shown being and of-the indeed of-the through
 πέντε ἀσυνθέτων τεσσάρων τὸν ἀριθμὸν ἐὰν μὲν τὰ τοῦ
five in-composites four in number if indeed the of-the
 πυκνοῦ μέρη ἴσα ἦ, τρία ἔσται μεγέθη ἐξ ὧν τὰ εἰρημένα
pyknon parts equal be three will-be magnitudes from which the said
 γένη συνεστηκότα ἔσται, τό τε τοῦ πυκνοῦ μέρος ὃ τι
genera composed will-be the both of-the pyknon part what ever
 ἂν ἦ καὶ τόνος καὶ τὸ τοιοῦτον οἶον μέσης καὶ λιχανοῦ
— may-be and (a)-tone and the such as of-mese and lichanos
 διάστημα. ἐὰν δὲ τὰ τοῦ πυκνοῦ μέρη ἄνισα ἦ, τέσσαρα
interval if and the of-the pyknon parts unequal be four
 ἔσται μεγέθη ἐξ ὧν τὰ εἰρημένα γένη συνεστηκότα ἔσται,
will-be magnitudes from which the said genera composed will-be

ἐλάχιστον μὲν τὸ τοιοῦτον οἶον τὸ ὑπάτης καὶ παρυπάτης,
least indeed the such as that of-hypate and parhypate

δεύτερον δ' οἶον τὸ παρυπάτης καὶ λιχανοῦ, τρίτον δὲ
second and such-as that of-parhypate and lichanos third and

τόνος, τέταρτον δὲ τὸ τοιοῦτον οἶον τὸ μέσης καὶ λιχανοῦ.
(a)-tone fourth and the such as that of-mese and lichanos

Ἦδη δέ τις ἠπόρησε διὰ τί οὐκ ἂν καὶ ταῦτα
already and someone has-raised-difficulty through what not would also these
 τὰ γένη
the genera

ἐκ δύο ἀσυνθέτων εἷη συνεστηκότα ὥσπερ καὶ τὸ
from two in-composites be composed just-as also the

διάτονον. Φανερόν δὴ τίς ἐστι παντελῶς καὶ ἐπιπολῆς
diatonic evident indeed what is utterly and on-the-surface

ἡ αἰτία τοῦ μὴ γίνεσθαι τοῦτο· τρία γὰρ ἀσύνθετα
the cause of-the not arising this three for in-composites

ἴσα ἐξῆς ἐν ἀρμονίᾳ μὲν καὶ χρώματι οὐ τίθεται,
equal in-succession in harmonia indeed and chroma not are-placed

ἐν διατόνῳ δὲ τίθεται. διὰ ταύτην δὴ τὴν αἰτίαν τὸ
in diatonic but are-placed through this indeed the cause the

διάτονον μόνον ἐκ δύο ἀσυνθέτων συντίθεταιί ποτε.
diatonic alone from two in-composites is-compounded sometimes

Μετὰ δὲ ταῦτα λεκτέον τί ἐστι καὶ ποία τις ἡ
after and these must-be-told what is and of-what-sort a-certain the

κατ' εἶδος διαφορά— διαφέρει δ' ἡμῖν οὐδὲν εἶδος λέγειν
by form difference differs and for-us in-nothing form to-say

ἢ σχῆμα, φέρομεν γὰρ ἀμφοτέρα τὰ ὀνόματα ταῦτα
or figure we-apply for both the names these

ἐπὶ τὸ αὐτό. Γίνεται δ' ὅταν τοῦ αὐτοῦ μεγέθους
to the same(-thing) it-arises and when of-the same magnitude

ἐκ τῶν αὐτῶν ἀσυνθέτων συγκειμένου μεγέθει καὶ
from the same in-composites composed in-magnitude and

ἀριθμῶ ἢ τάξις αὐτῶν ἀλλοίωσιν λάβη. Τούτου δ' οὕτως
number the order of-them alteration takes this and thus
 ἀφωρισμένου τοῦ διὰ τεσσάρων ὅτι τρία εἶδη, δεικτέον.
having-been-marked-off of-the through four that three forms must-be-shown
 πρῶτον μὲν οὖν οὗ τὸ πυκνὸν ἐπὶ τὸ βαρύ,
first indeed then (that)-of-which the pyknon at the heavy(-lies)
 δεύτερον δ' οὗ δίεσις ἐφ' ἐκάτερα τοῦ διτόνου κείται,
second and of-which (a)-diesis on either-side of-the ditone lies
 τρίτον δ' οὗ τὸ πυκνὸν ἐπὶ τὸ ὀξύ τοῦ διτόνου. ὅτι δ'
third and of-which the pyknon at the sharp of-the ditone(-lies) that and
 οὐκ ἐνδέχεται πλεοναχῶς τεθῆναι τὰ τοῦ διὰ τεσσάρων
not it-is-possible in-more-ways to-be-placed the of-the through four
 μέρη πρὸς ἄλληλα ἢ τοσαυταχῶς, ῥάδιον συνιδεῖν ***.
parts toward one-another than in-so-many-ways (is)-easy to-see-together (lacuna)

CLEONIDES

ΕΙΣΑΓΩΓΗ ΑΡΜΟΝΙΚΗ

Introduction to Harmonics

Harmonics is the science, both contemplative and practical, of the nature of the attuned. Its parts are seven: notes, intervals, genera, system, key, modulation, and melody-making. Cleonides then defines each of the seven in a single sentence.

Ἄρμονική ἐστὶν ἐπιστήμη θεωρητική τε καὶ πρακτική
 harmonic(-science) is science contemplative both and practical
 τῆς τοῦ ἡρμοσμένου φύσεως. ἡρμοσμένον δὲ τὸ ἐκ
 of-the of-the attuned nature attuned and (is)-that from
 φθόγγων τε καὶ διαστημάτων ποιὰν τάξιν ἔχόντων
 notes both and intervals (a)-particular order having
 συγκείμενον. μέρη δὲ αὐτῆς ἐστὶν ἑπτὰ· περὶ φθόγγων,
 composed parts and of-it are seven about notes
 περὶ διαστημάτων, περὶ γενῶν, περὶ συστήματος, περὶ
 about intervals about genera about system about
 τόνου, περὶ μεταβολῆς, περὶ μελοποιίας.
 key about modulation about melody-making
 Φθόγγος μὲν οὖν ἐστὶ φωνῆς πτώσις ἐμμελὴς ἐπὶ μίαν
 (a)-note indeed then is of-voice (a)-falling melodic upon one
 τάσιν.
 tension
 Διάστημα δὲ τὸ περιεχόμενον ὑπὸ δύο φθόγγων
 (an)-interval and (is)-that enclosed by two notes
 ἀνομοίων ὀξύτητι καὶ βαρύτητι.
 unlike in-sharpness and in-heaviness
 Γένος δὲ ἐστὶ ποιὰ τεττάρων φθόγγων διαίσεις.
 (a)-genus and is (a)-particular of-four notes division
 Σύστημα δὲ ἐστὶ τὸ ἐκ πλειόνων ἢ ἐνὸς διαστημάτων
 (a)-system and is that from more than one intervals
 συγκείμενον.
 composed

Τόνος δέ ἐστι τόπος τις τῆς φωνῆς δεκτικὸς συστήματος
 (a)-key and is (a)-region certain of-the voice receptive of-a-system
 ἀπλατῆς.

breadthless

Μεταβολὴ δέ ἐστιν ὁμοίου τινὸς εἰς ἀνόμοιον τόπον
 modulation and is of-something-like certain into (an)-unlike region
 μετάρθεις.

transposition

Μελοποιῶν δέ ἐστι χρῆσις τῶν ὑποκειμένων τῇ
 melody-making and is (a)-use of-the(-materials) underlying the
 ἀρμονικῇ πραγματείᾳ πρὸς τὸ οἰκεῖον ἐκάστης
 harmonic study toward the proper(-character) of-each
 ὑποθέσεως.

undertaking

2 • THE TWO MOTIONS OF THE VOICE

All this is studied in the quality of the voice. Its motions are two: the continuous motion of speech, which comes to rest nowhere short of silence, and the intervallic motion of melody, which alternates stays with the passings between them. The stays are called tensions, and also notes; they are boundless in tension but eighteen in function in each genus.

Ταῦτα δὲ θεωρεῖται ἐν φωνῆς ποιότητι, ἧς κινήσεις
 these(-things) and are-studied in of-voice quality whose motions
 εἰσὶ δύο, ἡ μὲν συνεχὴς τε καὶ λογικὴ καλουμένη, ἡ
 are two the one continuous both and discursive called the
 δὲ διαστηματικὴ τε καὶ μελωδική. ἡ μὲν οὖν συνεχὴς
 other intervallic both and melodic the one then continuous
 κινήσις τῆς φωνῆς τὰς τε ἐπιτάσεις καὶ τὰς ἀνέσεις
 motion of-the voice the both tightenings and the slackenings

ἀφανῶς ποιῆται μηδαμοῦ ἵσταμένη ἢ μέχρι σιωπῆς.
imperceptibly makes nowhere standing except as-far-as silence
 ἡ δὲ διαστηματικὴ κίνησις τῆς φωνῆς ἐναντίως κινεῖται
the other intervallic motion of-the voice contrariwise moves
 τῇ συνεχεῖ μονάς τε γὰρ ποιεῖ καὶ τὰς μεταξὺ τούτων
to-the continuous stays both for it-makes and the between these
 διαστάσεις, ἐναλλάξ αὐτῶν ἑκάτερον τιθείσα. τὰς μὲν
distances alternately of-them each placing the indeed
 οὖν μονὰς τάσεις καλοῦμεν, τὰς δὲ μεταβάσεις τὰς
then stays tensions we-call the and passings those
 ἀπὸ τάσεων ἐπὶ τάσεις διαστήματα. τὰ δὲ ποιῶντα
from tensions to tensions intervals the(-things) and making
 τὴν τῶν τάσεων διαφορὰν ἐπίτασις ἐστὶ καὶ ἄνεσις,
the of-the tensions difference tightening is and slackening
 ἀποτέλεσμα δὲ τούτων ὀξύτης καὶ βαρύτης. τὸ μὲν
(the)-effect and of-these sharpness and heaviness the one
 γὰρ δι' ἐπιτάσεως γινόμενον εἰς ὀξύτητα ἄγει, τὸ δὲ
for through tightening arising into sharpness leads the other
 δι' ἀνέσεως εἰς βαρύτητα. καὶ ὀξύτης μὲν οὖν ἐστὶ τὸ
through slackening into heaviness and sharpness indeed then is the
 δι' ἐπιτάσεως γινόμενον ἀποτέλεσμα, βαρύτης δὲ τὸ
through tightening arising effect heaviness and that
 δι' ἀνέσεως. *** ἀμφοῖν γὰρ συμβέβηκε τὸ τετάσθαι.
through slackening (lacuna) to-both for it-has-befallen the being-stretched
 καλοῦνται δὲ αἱ τάσεις καὶ φθόγγοι· τάσεις μὲν ἀπὸ τῶν
are-called and the tensions also notes tensions indeed from the
 καθαπτῶν ὀργάνων παρὰ τὸ τετάσθαι, φθόγγοι δὲ, ἐπεὶ
stringed instruments because-of the being-stretched notes and since
 ὑπὸ φωνῆς ἐνεργοῦνται. φθόγγοι δὲ εἰσι τῇ μὲν τάσει
by voice they-are-produced notes and are in-the indeed tension
 ἄπειροι, τῇ δὲ δυνάμει καθ' ἕκαστον γένος δεκαοκτώ.
boundless in-the but function in each genus eighteen

3 · THE THREE GENERA

The genera are three. The diatonic descends by tone, tone, and semitone; the chroma by three-semitones, semitone, semitone; the harmonia by ditone, diesis, diesis — and each ascends by the same steps reversed.

Γένη δέ ἐστι τρία, διάτονον χρώμα ἁρμονία. καὶ μελωδεῖται
genera and are three diatonic chroma harmonia and is-sung
τὸ μὲν διάτονον ἐπὶ μὲν τὸ βαρὺ κατὰ τόνον καὶ τόνον καὶ
the indeed diatonic toward indeed the heavy by tone and tone and
ἡμιτόνιον, ἐπὶ δὲ τὸ ὀξύ ἐναντίως κατὰ ἡμιτόνιον καὶ τόνον
semitone toward and the sharp contrariwise by semitone and tone
καὶ τόνον. τὸ δὲ χρώμα ἐπὶ μὲν τὸ βαρὺ κατὰ τριημιτόνιον
and tone the and chroma toward indeed the heavy by three-semitone
καὶ ἡμιτόνιον καὶ ἡμιτόνιον, ἐπὶ δὲ τὸ ὀξύ ἐναντίως κατὰ
and semitone and semitone toward and the sharp contrariwise by
ἡμιτόνιον καὶ ἡμιτόνιον καὶ τριημιτόνιον. ἡ δὲ ἁρμονία
semitone and semitone and three-semitone the and harmonia
ἐπὶ μὲν τὸ βαρὺ κατὰ δίτονον καὶ δέισιν καὶ δέισιν, ἐπὶ
toward indeed the heavy by ditone and diesis and diesis toward
δὲ τὸ ὀξύ ἐναντίως κατὰ δέισιν καὶ δέισιν καὶ δίτονον.
and the sharp contrariwise by diesis and diesis and ditone

4 · THE EIGHTEEN NOTES

The notes are named in full for each genus, and again for a mixture of genera, from proslambanomenos to nete of the topmost. Eight of them stand fast through the differences of the genera, and the rest move. Five of the standing notes are lowest in a pyknon while three lie outside any pyknon and enclose the complete systems; the movers are middle or sharp in the pyknon, or diatonic, since the diatonic has no share in a pyknon.

Εἰσὶ δὲ οἱ μὲν ἐν τῷ διατόνῳ φθόγγοι οὔδε·
there-are and the indeed in the diatonic notes these
 προσλαμβανόμενος, ὑπάτη ὑπάτων, παρυπάτη ὑπάτων,
proslambanomenos hypate of-the-lowest parhypate of-the-lowest
 λιχανὸς ὑπάτων διάτονος, ὑπάτη μέσων, παρυπάτη
lichanos of-the-lowest diatonic hypate of-the-middle parhypate
 μέσων, λιχανὸς μέσων διάτονος, μέση, τρίτη συνημμένων,
of-the-middle lichanos of-the-middle diatonic mese trite of-the-conjoined
 παρανήτη συνημμένων διάτονος, νήτη συνημμένων,
paranete of-the-conjoined diatonic nete of-the-conjoined
 παραμέση, τρίτη διεξυγμένων, παρανήτη διεξυγμένων
paramese trite of-the-disjoined paranete of-the-disjoined
 διάτονος, νήτη διεξυγμένων, τρίτη ὑπερβολαίων, παρανήτη
diatonic nete of-the-disjoined trite of-the-topmost paranete
 ὑπερβολαίων διάτονος, νήτη ὑπερβολαίων.
of-the-topmost diatonic nete of-the-topmost
 Ἐν δὲ χρώματι οὔδε· προσλαμβανόμενος, ὑπάτη ὑπάτων,
in and chroma these proslambanomenos hypate of-the-lowest
 παρυπάτη ὑπάτων, λιχανὸς ὑπάτων χρωματική, ὑπάτη
parhypate of-the-lowest lichanos of-the-lowest chromatic hypate
 μέσων, παρυπάτη μέσων, λιχανὸς μέσων χρωματική,
of-the-middle parhypate of-the-middle lichanos of-the-middle chromatic
 μέση, τρίτη συνημμένων, παρανήτη συνημμένων χρωματική,
mese trite of-the-conjoined paranete of-the-conjoined chromatic
 νήτη συνημμένων, παραμέση, τρίτη διεξυγμένων, παρανήτη
nete of-the-conjoined paramese trite of-the-disjoined paranete
 διεξυγμένων χρωματική, νήτη διεξυγμένων, τρίτη
of-the-disjoined chromatic nete of-the-disjoined trite
 ὑπερβολαίων, παρανήτη ὑπερβολαίων χρωματική, νήτη
of-the-topmost paranete of-the-topmost chromatic nete
 ὑπερβολαίων.
of-the-topmost

Ἐν δὲ ἀρμονίᾳ οἶδε· προσλαμβανόμενος, ὑπάτη ὑπάτων,
in and harmonia these proslambanomenos hygate of-the-lowest
 παρυπάτη ὑπάτων, λιχανὸς ὑπάτων ἐναρμόνιος, ὑπάτη
parhygate of-the-lowest lichanos of-the-lowest enharmonic hygate
 μέσων, παρυπάτη μέσων, λιχανὸς μέσων ἐναρμόνιος,
of-the-middle parhygate of-the-middle lichanos of-the-middle enharmonic
 μέση, τρίτη συνημμένων ἐναρμόνιος, παρανήτη συνημμένων
mese trite of-the-conjoined enharmonic paranete of-the-conjoined
 ἐναρμόνιος, νήτη συνημμένων, παραμέση, τρίτη διεξευγμένων
enharmonic nete of-the-conjoined paramese trite of-the-disjoined
 ἐναρμόνιος, παρανήτη διεξευγμένων ἐναρμόνιος, νήτη
enharmonic paranete of-the-disjoined enharmonic nete
 διεξευγμένων, τρίτη ὑπερβολαίων ἐναρμόνιος, παρανήτη
of-the-disjoined trite of-the-topmost enharmonic paranete
 ὑπερβολαίων ἐναρμόνιος, νήτη ὑπερβολαίων.
of-the-topmost enharmonic nete of-the-topmost

Κατὰ δὲ μίξιν τῶν γενῶν οἶδε· προσλαμβανόμενος, ὑπάτη
by and mixture of-the genera these proslambanomenos hygate
 ὑπάτων, παρυπάτη ὑπάτων, λιχανὸς ὑπάτων ἐναρμόνιος,
of-the-lowest parhygate of-the-lowest lichanos of-the-lowest enharmonic
 λιχανὸς ὑπάτων χρωματική, λιχανὸς ὑπάτων διάτονος,
lichanos of-the-lowest chromatic lichanos of-the-lowest diatonic
 ὑπάτη μέσων, παρυπάτη μέσων, λιχανὸς μέσων
hygate of-the-middle parhygate of-the-middle lichanos of-the-middle
 ἐναρμόνιος, λιχανὸς μέσων χρωματική, λιχανὸς μέσων
enharmonic lichanos of-the-middle chromatic lichanos of-the-middle
 διάτονος, μέση, τρίτη συνημμένων, παρανήτη συνημμένων
diatonic mese trite of-the-conjoined paranete of-the-conjoined
 ἐναρμόνιος, παρανήτη συνημμένων χρωματική, παρανήτη
enharmonic paranete of-the-conjoined chromatic paranete
 συνημμένων διάτονος, νήτη συνημμένων, παραμέση,
of-the-conjoined diatonic nete of-the-conjoined paramese

τρίτη διεξυγμένων, παρανήτη διεξυγμένων ἐναρμόνιος,
trite of-the-disjoined paranete of-the-disjoined enharmonic
 παρανήτη διεξυγμένων χρωματική, παρανήτη διεξυγμένων
paranete of-the-disjoined chromatic paranete of-the-disjoined
 διάτονος, νήτη διεξυγμένων, τρίτη ὑπερβολαίων, παρανήτη
diatonic nete of-the-disjoined trite of-the-topmost paranete
 ὑπερβολαίων ἐναρμόνιος, παρανήτη ὑπερβολαίων χρωματική,
of-the-topmost enharmonic paranete of-the-topmost chromatic
 παρανήτη ὑπερβολαίων διάτονος, νήτη ὑπερβολαίων.
paranete of-the-topmost diatonic nete of-the-topmost
 Τῶν δὲ ἐξηριθμημένων φθόγων οἱ μὲν εἰσιν ἐστῶτες,
of-the and enumerated notes the some are standing
 οἱ δὲ κινούμενοι. ἐστῶτες μὲν οὖν εἰσιν ὅσοι ἐν ταῖς
the others moving standing indeed then are as-many-as in the
 τῶν γενῶν διαφοραῖς οὐ μεταπίπτουσιν, ἀλλὰ μένουσιν ἐπὶ
of-the genera differences not change-about but remain upon
 μιᾷ τάσεως. κινούμενοι δὲ ὅσοι τοῦναντίον πεπόνθασιν·
one tension moving and as-many-as the-contrary have-undergone
 ἐν γὰρ ταῖς τῶν γενῶν διαφοραῖς μεταβάλλουσι καὶ οὐ
in for the of-the genera differences they-change and not
 μένουσιν ἐπὶ μιᾷ τάσεως. εἰσὶν οὖν οἱ μὲν ἐστῶτες ὀκτὼ
remain upon one tension are then the indeed standing eight
 οἷδε· προσλαμβανόμενος, ὑπάτη ὑπάτων, ὑπάτη μέσων,
these proslambanomenos hypate of-the-lowest hypate of-the-middle
 μέση, νήτη συνημμένων, παραμέση, νήτη διεξυγμένων,
mese nete of-the-conjoined paramese nete of-the-disjoined
 νήτη ὑπερβολαίων· κινούμενοι δὲ οἱ ἀνὰ μέσον
nete of-the-topmost moving and the(-notes) in (the)-middle
 τούτων πάντες.
of-these all

Τῶν δὲ ἐστώτων οἱ μὲν εἰσι βαρύπυκνοι, οἱ δὲ ἄπυκνοι
of-the and standing the some are heavy-in-pyknon the others pyknon-free
 καὶ περιέχοντες τὰ τέλεια συστήματα. βαρύπυκνοι μὲν
and enclosing the complete systems heavy-in-pyknon indeed
 οὖν εἰσι πέντε οἷδε· ὑπάτη ὑπάτων, ὑπάτη μέσων,
then are five these hypate of-the-lowest hypate of-the-middle
 μέση, παραμέση, νήτη διεzeugμένων. ἄπυκνοι δὲ καὶ
mese paramese nete of-the-disjoined pyknon-free and also
 περιέχοντες τὰ τέλεια συστήματα οἱ λοιποὶ τρεῖς οἷδε·
enclosing the complete systems the remaining three these
 προσλαμβανόμενος, νήτη συνημμένων, νήτη ὑπερβολαίων.
proslambanomenos nete of-the-conjoined nete of-the-topmost
 Τῶν δὲ κινουμένων οἱ μὲν εἰσι μεσόπυκνοι, οἱ δὲ ὀξύπυκνοι,
of-the and moving the some are middle-in-pyknon the others sharp-in-pyknon
 οἱ δὲ διάτονοι. μεσόπυκνοι μὲν οὖν εἰσι πέντε οἷδε·
the others diatonic middle-in-pyknon indeed then are five these
 παρυπάτη ὑπάτων, παρυπάτη μέσων, τρίτη συνημμένων,
parhypate of-the-lowest parhypate of-the-middle trite of-the-conjoined
 τρίτη διεzeugμένων, τρίτη ὑπερβολαίων. ὀξύπυκνοι δὲ
trite of-the-disjoined trite of-the-topmost sharp-in-pyknon and
 ὁμοίως κατὰ γένος πέντε· ἐν μὲν ἀρμονία οἱ ἐναρμόνιοι,
likewise by genus five in indeed harmonia the enharmonic(-ones)
 ἐν δὲ χρώματι οἱ χρωματικοί· τὸ γὰρ διάτονον οὐ μετέχει
in and chroma the chromatic(-ones) the for diatonic not partakes
 πυκνοῦ. εἰσὶν οὖν οἱ μὲν ἐν τῇ ἀρμονίᾳ οἷδε· λιχανὸς
of-a-pyknon are then the indeed in the harmonia these lichanos
 ὑπάτων ἐναρμόνιος, λιχανὸς μέσων ἐναρμόνιος, παρανήτη
of-the-lowest enharmonic lichanos of-the-middle enharmonic paranete
 συνημμένων ἐναρμόνιος, παρανήτη διεzeugμένων ἐναρμόνιος,
of-the-conjoined enharmonic paranete of-the-disjoined enharmonic
 παρανήτη ὑπερβολαίων ἐναρμόνιος. ἐν δὲ τῷ χρώματι οἷδε·
paranete of-the-topmost enharmonic in and the chroma these

λιχανὸς ὑπάτων χρωματική, λιχανὸς μέσων χρωματική,
 lichanos of-the-lowest chromatic lichanos of-the-middle chromatic
 παρανήτη συνημμένων χρωματική, παρανήτη διεξυγμένων
 paranete of-the-conjoined chromatic paranete of-the-disjoined
 χρωματική, παρανήτη ὑπερβολαίων χρωματική. οἱ δὲ
 chromatic paranete of-the-topmost chromatic the others
 διατόνοι οἶδε· λιχανὸς ὑπάτων διάτονος, λιχανὸς μέσων
 diatonic(-ones) these lichanos of-the-lowest diatonic lichanos of-the-middle
 διάτονος, παρανήτη συνημμένων διάτονος, παρανήτη
 diatonic paranete of-the-conjoined diatonic paranete
 διεξυγμένων διάτονος, παρανήτη ὑπερβολαίων διάτονος.
 of-the-disjoined diatonic paranete of-the-topmost diatonic

5 · THE FIVE DIFFERENCES OF INTERVALS

Intervals differ in magnitude, in genus, as concordant against discordant, as composite against incomposite, and as rational against irrational. Concord is a blending of two notes, discord their refusal to blend, which roughens the bearing. Some magnitudes, from the semitone to the ditone, are composite in one genus and incomposite in another.

Τῶν δὲ διαστημάτων διαφοραί εἰσι πέντε, ἧ τε
 of-the and intervals differences are five in-which both
 μεγέθει ἀλλήλων διαφέρει καὶ ἧ κατὰ γένος καὶ
 in-magnitude from-one-another they-differ and in-which by genus and
 ἧ τὰ σύμφωνα τῶν διαφώνων καὶ ἧ τὰ σύνθετα
 in-which the concordant from-the discordant and in-which the composite
 τῶν ἀσυνθέτων καὶ τὰ ῥητὰ τῶν ἀλόγων.— Ἡ μὲν
 from-the incomposite and the rational from-the irrational the one
 οὖν κατὰ μέγεθός ἐστι, καθ' ἣν ἃ μὲν ἐστι μείζονα
 then by magnitude is that-by which some indeed are greater

τῶν διαστημάτων, ἃ δὲ ἐλάττονα, οἷον δίτονον, τόνος,
of-the intervals others and smaller such-as ditone tone
 ἡμιτόνιον, διὰ τεσσάρων, διὰ πέντε, διὰ πασῶν καὶ
semitone through four through five through all and
 τὰ ὅμοια.— Ἡ δὲ κατὰ γένος, καθ' ἣν ἃ μὲν ἐστὶ
the like the other by genus (is)-that-by which some indeed are
 τῶν διαστημάτων διατονικά, ἃ δὲ χρωματικά, ἃ δὲ
of-the intervals diatonic some and chromatic some and
 ἐναρμόνια. Ἡ δὲ τοῦ συμφώνου, καθ' ἣν ἃ μὲν ἐστὶ
enharmonic the other of-the concordant (is)-that-by which some indeed are
 τῶν διαστημάτων σύμφωνα, ἃ δὲ διάφωνα. σύμφωνα
of-the intervals concordant some and discordant concordant
 μὲν οὖν ἐστὶ διὰ τεσσάρων, διὰ πέντε, διὰ πασῶν καὶ
indeed then are through four through five through all and
 τὰ ὅμοια. διάφωνα δὲ τὰ ἐλάττονα τοῦ διὰ τεσσάρων
the like discordant and the smaller than-the through four
 πάντα καὶ τὰ μεταξὺ τῶν συμφώνων πάντα. ἐλάττω
all and the(-intervals) between the concords all smaller
 μὲν οὖν ἐστὶ τοῦ διὰ τεσσάρων δίεσις, ἡμιτόνιον, τόνος,
indeed then are than-the through four diesis semitone tone
 δίτονον, μεταξὺ δὲ τῶν συμφώνων τρίτονον, τετράτονον,
ditone between and the concords tritone four-tone
 πεντάτονον καὶ τὰ ὅμοια. ἔστι δὲ συμφωνία μὲν κράσις
five-tone and the like is and concord indeed (a)-blending
 δύο φθόγων ὀξύτερου καὶ βαρυτέρου· διαφωνία δὲ
of-two notes sharper and heavier discord and
 τούναντίον δύο φθόγων ἀμικξία, ὥστε μὴ κραθῆναι,
the-contrary of-two notes (a)-non-mixture so-that not to-be-blended
 ἀλλὰ τραχυνθῆναι τὴν ἀκοήν.— Ἡ δὲ τοῦ συνθέτου
but to-be-roughened the hearing the other of-the composite
 ἐστὶ διαφορά, καθ' ἣν ἃ μὲν ἐστὶ τῶν διαστημάτων
is difference that-by which some indeed are of-the intervals

ἀσύνθετα, ἃ δὲ σύνθετα. ἀσύνθετα μὲν οὖν διαστήματα
incomposite some and composite incomposite indeed then intervals
 ἐστὶ τὰ ὑπὸ τῶν ἐξῆς φθόγγων περιεχόμενα, οἷον ὑπάτης
are those by the successive notes enclosed such-as of-hypate
 καὶ παρυπάτης, καὶ λιχανοῦ καὶ μέσης· ὁ αὐτὸς λόγος καὶ
and parhypate and of-lichanos and mese the same account also
 ἐπὶ τῶν λοιπῶν διαστημάτων. σύνθετα δὲ τὰ ὑπὸ τῶν
for the remaining intervals composite and those by the(-notes)
 μὴ ἐξῆς, οἷον μέσης καὶ παρυπάτης, μέσης καὶ νήτης,
not successive such-as of-mese and parhypate of-mese and nete
 παραμέσης καὶ ὑπάτης. ἔστι δέ τινα κοινὰ συνθέτου καὶ
of-paramese and hypate there-are and some common of-composite and
 ἀσυνθέτου διαστήματα, τὰ ἀπὸ ἡμιτονίου μέχρι διτόνου.
incomposite intervals those from (the)-semitone up-to (the)-ditone
 τὸ μὲν γὰρ ἡμιτονίον ἐστὶν ἐν ἁρμονίᾳ σύνθετον, ἐν δὲ
the one for semitone is in harmonia composite in and
 χρώματι καὶ διατόνῳ ἀσύνθετον· ὁ τόνος ἐν μὲν χρώματι
chroma and diatonic incomposite the tone in indeed chroma
 σύνθετος, ἐν δὲ διατόνῳ ἀσύνθετος· τὸ τριημιτονίον ἐν μὲν
composite in and diatonic incomposite the three-semitone in indeed
 χρώματι ἀσύνθετον, ἐν δὲ διατόνῳ σύνθετον· τὸ δίτονον
chroma incomposite in and diatonic composite the ditone
 ἐν μὲν ἁρμονίᾳ ἀσύνθετον, ἐν δὲ χρώματι καὶ διατόνῳ
in indeed harmonia incomposite in and chroma and diatonic
 σύνθετον. τὰ δὲ ἐλάττω τοῦ ἡμιτονίου πάντα ἐστὶν
composite the and smaller than-the semitone all are
 ἀσύνθετα· ὁμοίως δὲ καὶ τὰ μείζω τοῦ διτόνου πάντα
incomposite likewise and also the greater than-the ditone all
 σύνθετα.— Ἡ δὲ τοῦ ῥήτου καὶ ἀλόγου διαφορά ἐστὶ, καθ'
composite the other of-the rational and irrational difference is that-by
 ἣν τῶν διαστημάτων ἃ μὲν ἐστὶ ῥητὰ, ἃ δ' ἄλογα.
which of-the intervals some indeed are rational some and irrational

ῥητὰ μὲν οὖν ἐστίν, ὧν οἷόν τέ ἐστι τὰ μεγέθη
 rational indeed then are those-whose possible indeed it-is the magnitudes
 ἀποδιδόναι, οἷον τόνον ἡμιτόνιον δίτονον τρίτονον καὶ τὰ
 to-render such-as tone semitone ditone tritone and the
 ὅμοια· ἄλογα δὲ τὰ παραλλάττοντα ταῦτα τὰ μεγέθη
 like irrational and the altering these the magnitudes
 ἐπὶ τὸ μείζον ἢ ἐπὶ τὸ ἔλαττον ἀλόγῳ τινὶ μεγέθει.
 toward the greater or toward the smaller by-an-irrational certain magnitude

6 • MELODIES BY GENUS

Every melody is diatonic, chromatic, enharmonic, common, or mixed — common when built only of the standing notes, mixed when two or three generic characters appear together. The differences come from the moving notes: the lichanos ranges through a tone, the parhypate through a diesis.

Γένη δέ ἐστι τρία τὰ προειρημένα. πᾶν οὖν ἔσται μέλος
 genera and are three the aforesaid every then will-be melody
 ἢτοι διατονικὸν ἢ χρωματικὸν ἢ ἐναρμόνιον ἢ κοινὸν
 either diatonic or chromatic or enharmonic or common
 ἢ μικτὸν ἐκ τούτων. διατονικὸν μὲν οὖν ἐστὶ τὸ τῇ
 or mixed from these diatonic indeed then is that the
 διατονικῇ διαιρέσει χρώμενον, χρωματικὸν δὲ τὸ τῇ
 diatonic division using chromatic and that the
 χρωματικῇ, ἐναρμόνιον δὲ τὸ τῇ ἐναρμονίᾳ. κοινὸν δὲ τὸ
 chromatic enharmonic and that the enharmonic common and that
 ἐκ τῶν ἐστώτων συγκέμενον. μικτὸν δὲ τὸ ἐν ᾧ δύο
 from the standing(-notes) composed mixed and that in which two
 ἢ τρεῖς χαρακτῆρες γενικοὶ ἐμφαίνονται, οἷον διατόνου
 or three characters generic show-forth such-as of-diatonic
 καὶ χρώματος ἢ διατόνου καὶ ἀρμονίας ἢ χρώματος καὶ
 and chroma or of-diatonic and harmonia or of-chroma and

ἁρμονίας ἥ καὶ διατόνου καὶ χρώματος καὶ ἁρμονίας.
harmonia or even of-diatonic and chroma and harmonia
 γίνονται δὲ αἱ τῶν γενῶν διαφοραὶ παρὰ τοὺς κινουμένους
arise and the of-the genera differences because-of the moving
 τῶν φθόγγων. Κινεῖται δὲ ἡ μὲν λιχανὸς ἐν τονιαίῳ
of-the notes moves and the indeed lichanos in (a)-tone-sized
 τόπῳ, ἡ δὲ παρυπάτη ἐν διεσιαίῳ. λιχανὸς μὲν οὖν ἐστίν
region the and parhypate in (a)-diesis-sized lichanos indeed then is
 ὀξυτάτη ἡ τόνον ἀπὸ τοῦ ἑτέρου ἀπέχουσα τῶν
sharpest the(-one) (a)-tone from the other standing-off of-the(-notes)
 τὸ τετράχορδον περιεχόντων, βαρυτάτη δὲ ἡ δίτονον.
the tetrachord enclosing heaviest and the(-one) (a)-ditone
 ὁμοίως δὲ καὶ παρυπάτη ἐστὶ βαρυτάτη μὲν ἡ δίεσιν
likewise and also parhypate is heaviest indeed the(-one) (a)-diesis
 ἀπὸ τοῦ βαρυτέρου τῶν τὸ τετράχορδον περιεχόντων
from the heavier of-the(-notes) the tetrachord enclosing
 ἀπέχουσα, ὀξυτάτη δὲ ἡ ἡμιτόνιον ἀπέχουσα.
standing-off sharpest and the(-one) (a)-semitone standing-off

7 · THE SIX SHADES

A shade is a specific division of a genus, and the recognized shades are six: one enharmonic, three chromatic — soft, hemiolic, tone-sized, named from their pykna — and two diatonic, soft and tense. With the tone divided into twelve parts, the six divisions are counted in twelfths: 3-3-24, 4-4-22, 4½-4½-21, 6-6-18, 6-9-15, 6-12-12.

Χρόα δέ ἐστι γένους εἰδικὴ διαίρεσις. χροαὶ δέ εἰσιν αἱ
 (a)-shade and is of-a-genus specific division shades and are the
 ῥηταὶ καὶ γνώριμοι ἕξ, ἀρμονίας μία, χρώματος τρεῖς,
 rational and familiar six of-harmonia one of-chroma three
 διατόνου δύο.

of-diatonic two

Ἡ μὲν οὖν τῆς ἀρμονίας τῇ αὐτοῦ τοῦ γένους διαίρεσει
 the one then of-the harmonia the of-itself of-the genus division
 κέχρηται· μελωδεῖται γὰρ κατὰ δέσιν καὶ δέσιν τὴν ἴσην
 uses it-is-sung for by diesis and diesis the equal
 καὶ δίτονον.

and (a)-ditone

Τῶν δὲ χρωματικῶν διαίρέσεων βαρυτάτη μὲν ἐστίν
 of-the and chromatic divisions heaviest indeed is
 ἡ τοῦ μαλακοῦ χρώματος χροα, μελωδεῖται δὲ κατὰ
 the of-the soft chroma shade it-is-sung and by
 δέσιν τριτημόριον τόνου καὶ δέσιν τὴν ἴσην καὶ τὸ
 (a)-diesis one-third of-a-tone and (a)-diesis the equal and the(-interval)
 ἶσον τόνῳ καὶ τῷ ἡμίσει καὶ τρίτῳ. τὸ δὲ ἡμόλιον
 equal to-a-tone and the half and third the and hemiolic
 κατὰ δέσιν ἡμόλιον τῆς ἐναρμονίου διέσεως καὶ δέσιν
 by (a)-diesis hemiolic of-the enharmonic diesis and (a)-diesis
 τὴν ἴσην καὶ ἐπτὰ τεταρτημορίων διέσεων ἀσύνθετον
 the equal and of-seven quarter dieses (an)-incomposite
 διάστημα. τὸ δὲ τονιαῖον χρῶμα τῇ αὐτῇ τοῦ γένους χροα
 interval the and tone-sized chroma the same of-the genus shade
 κέχρηται· μελωδεῖται γὰρ κατὰ ἡμιτόνιον καὶ ἡμιτόνιον καὶ
 uses it-is-sung for by semitone and semitone and
 τριημιτόνιον. κέκληται δὲ τὰ εἰρημένα χρώματα ἀπὸ τῶν
 three-semitones have-been-named and the said chromata from the
 ἐνυπαρχόντων αὐτοῖς πυκνῶν· τό τε γὰρ τονιαῖον ἀπὸ τοῦ
 inhering in-them pykna the both for tone-sized from the

ἐνυπάρχοντος αὐτῷ (κατὰ σύνθεσιν) τόνου, καὶ ἡμιόλιον ἀπὸ
inhering in-it by composition tone and hemiolic from
 τῶν ἐνυπαρχουσῶν αὐτῷ διέσεων, ἡμιολίων τῶν ἐναρμονίων
the inhering in-it dieses hemiolic of-the enharmonic
 διέσεων, μαλακὸν δὲ τὸ τοῦ ἐλαχίστου πυκνοῦ ὡσαύτως
dieses soft and that of-the least pyknon likewise
 χρῶμα, ἐπειδὴ τὸ ἐν αὐτῷ πυκνὸν ἀνίεταί τε καὶ ἐκλύεται.
chroma since the in it pyknon is-slackened both and is-loosened
 Τῶν δὲ διατονικῶν διαιρέσεων τὸ μὲν διάτονον μαλακὸν
of-the and diatonic divisions the one diatonic soft
 καλεῖται, τὸ δὲ σύντονον. ἡ μὲν οὖν τοῦ μαλακοῦ
is-called the other tense the one then of-the soft
 διατόνου χροῖα μελωδεῖται κατὰ ἡμιτόνιον καὶ τριῶν
diatonic shade is-sung by semitone and of-three
 διέσεων ἀσύνθετον διάστημα καὶ πέντε διέσεων ὁμοίως
dieses (an)-incomposite interval and of-five dieses likewise
 ἀσύνθετον διάστημα. ἡ δὲ τοῦ συντόνου διατόνου τῇ
(an)-incomposite interval the other of-the tense diatonic in-the
 αὐτῇ τοῦ γένους ἐπικοινωνεῖ διαιρέσει· μελωδεῖται γὰρ
same of-the genus shares division it-is-sung for
 καθ' ἡμιτόνιον καὶ τόνον καὶ τόνον.
by semitone and tone and tone
 Δείκνυνται δὲ καὶ δι' ἀριθμῶν αἱ χροαὶ τὸν τρόπον
are-shown and also through numbers the shades in-the manner
 τοῦτον. ὑποτίθεται γὰρ ὁ τόνος εἰς δώδεκά τινα ἐλάχιστα
this is-supposed for the tone into twelve certain least
 μόρια διαιρούμενος, ὧν ἕκαστον δωδεκατημόριον τόνου
portions divided of-which each (a)-twelfth of-a-tone
 καλεῖται· ἀναλόγως δὲ τῷ τόνῳ καὶ τὰ λοιπὰ διαστήματα,
is-called analogously and to-the tone also the remaining intervals
 τὸ μὲν γὰρ ἡμιτόνιον εἰς ἕξ δωδεκατημόρια, ἡ δὲ διέσις
the indeed for semitone into six twelfths the and diesis

ἡ μὲν τεταρτημόριος εἰς τρία, ἡ δὲ τριτημόριος εἰς
the one quarter(-sized) into three the other third(-sized) into
 τέσσαρα, ὅλον δὲ τὸ διὰ τεσσάρων εἰς τριάκοντα. ἡ
four whole and the through four into thirty the
 μὲν οὖν ἀρμονία μελωδηθήσεται τριῶν δωδεκατημορίων
indeed then harmonia will-be-sung (by-)three twelfths
 μέγεθος καὶ γ καὶ κδ, τὸ δὲ μαλακὸν χρῶμα κατὰ
(in)-magnitude and 3 and 24 the and soft chroma by
 δ καὶ δ καὶ κβ, τὸ δὲ ἡμιόλιον χρῶμα κατὰ τέτταρα
4 and 4 and 22 the and hemiolic chroma by four
 ἥμισυ καὶ δ ἥμισυ καὶ κα, τὸ δὲ τονιαῖον χρῶμα
(and-a)-half and 4 (and-a)-half and 21 the and tone-sized chroma
 κατὰ ς καὶ ς καὶ ιη, τὸ δὲ μαλακὸν διάτονον κατὰ
by 6 and 6 and 18 the and soft diatonic by
 ς καὶ θ καὶ ιε, τὸ δὲ σύντονον κατὰ ς καὶ ιβ καὶ ιβ.
6 and 9 and 15 the and tense by 6 and 12 and 12

8 • THE DIFFERENCES OF SYSTEMS

Systems share four differences with intervals and add three of their own: successive against transilient, conjoined against disjoined, unmodulating against modulating. The six concords of the unmodulating system are counted from the fourth to the double octave, and the range of the voice grows to the eighth concord.

Τῶν δὲ συστημάτων διαφοραί εἰσιν ἑπτά. τέσσαρες μὲν
of-the and systems differences are seven four indeed
 αἱ αὐταὶ τοῖς διαστήμασιν, ἧ τε κατὰ μέγεθος καὶ ἡ
the same as-for-the intervals the both by magnitude and that
 κατὰ γένος καὶ ἡ τοῦ συμφώνου καὶ ἡ τοῦ ῥητοῦ καὶ
by genus and that of-the concordant and that of-the rational and
 ἀλόγου· τρεῖς δὲ ἴδιαι τῶν συστημάτων διαφοραί εἰσιν,
irrational three and proper of-the systems differences are

ἡ τοῦ ἐξῆς καὶ ὑπερβατοῦ καὶ ἡ τοῦ συνημμένου καὶ
that of-the successive and transilient and that of-the conjoined and
 διεξευγμένου καὶ ἡ τοῦ ἀμεταβόλου καὶ ἐμμεταβόλου.—
disjoined and that of-the unmodulating and modulating
 Μεγέθει μὲν οὖν διαφέρει τὰ μείζω συστήματα τῶν
in-magnitude indeed then differ the greater systems from-the
 ἐλαττόνων καθάπερ τὸ διὰ πασῶν τοῦ τριτόνου ἢ
smaller as the through all from-the tritone or
 διαπέντε ἢ διὰ τεσσάρων ἢ τῶν ὁμοίων.— Γένει δὲ τὰ
through-five or through four or the like in-genus and the
 διατονικὰ τῶν ἐναρμονίων ἢ χρωματικῶν, ἢ τὰ χρωματικὰ
diatonic from-the enharmonic or chromatic or the chromatic
 ἢ ἐναρμονία τῶν λοιπῶν.— Τῇ δὲ τοῦ συμφώνου
or enharmonic from-the rest by-the and of-the concordant
 καὶ διαφώνου διοίσει τὰ ὑπὸ τῶν συμφώνων φθόγγων
and discordant will-differ those by the concordant notes
 περιεχόμενα τῶν ὑπὸ διαφώνων. σύμφωνα δὲ ἐστὶν ἐν
enclosed from-those by discordant concordant and are in
 τῷ ἀμεταβόλῳ συστήματι ἕξ· ἐλάχιστον μὲν τὸ διὰ
the unmodulating system six least indeed the through
 τεσσάρων, τόνων δύο ἡμίσεος, οἷόν ἐστι τὸ ἀπὸ ὑπάτης
four of-tones two (and)-a-half such-as is that from hypate
 ὑπάτων ἐπὶ ὑπάτην μέσων· δεύτερον δὲ τὸ διὰ πέντε,
of-the-lowest to hypate of-the-middle second and the through five
 τόνων τριῶν ἡμίσεος, οἷόν ἐστι τὸ ἀπὸ προσλαμβανομένου
of-tones three (and)-a-half such-as is that from proslambanomenos
 ἐπὶ ὑπάτην μέσων· τρίτον δὲ τὸ διὰ πασῶν, τόνων ἕξ,
to hypate of-the-middle third and the through all of-tones six
 οἷόν ἐστι τὸ ἀπὸ προσλαμβανομένου ἐπὶ μέσην· τέταρτον
such-as is that from proslambanomenos to mese fourth
 δὲ τὸ διὰ πασῶν καὶ διὰ τεσσάρων, τόνων ὀκτὼ καὶ
and the through all and through four of-tones eight and

ἡμίσεος, οἷόν ἐστι τὸ ἀπὸ προσλαμβανομένου ἐπὶ νήτην
a-half such-as is that from proslambanomenos to nete
 συνημμένων ἢ παρανήτην διεzeugμένων διάτονον· πέμπτον
of-the-conjoined or paranete of-the-disjoined diatonic fifth
 τὸ διὰ πασῶν καὶ διὰ πέντε, τόνων ἑννέα ἡμίσεος, οἷόν
the through all and through five of-tones nine (and)-a-half such-as
 ἐστι τὸ ἀπὸ προσλαμβανομένου ἐπὶ νήτην διεzeugμένων·
is that from proslambanomenos to nete of-the-disjoined
 ἕκτον τὸ δις διὰ πασῶν, τόνων δώδεκα, οἷόν ἐστι τὸ
sixth the twice through all of-tones twelve such-as is that
 ἀπὸ προσλαμβανομένου ἐπὶ νήτην ὑπερβολαίων.— τὸ δὲ
from proslambanomenos to nete of-the-topmost the and
 συνημμένον σύστημα πρόεισι μέχρι τετάρτου συμφώνου
conjoined system advances as-far-as (the)-fourth concord
 πρῶτον γὰρ ἐν αὐτῷ τὸ διὰ τεσσάρων, δεύτερον τὸ
first for in it (is)-the through four second the
 διὰ πέντε, τρίτον τὸ διὰ πασῶν, τέταρτον τὸ διὰ
through five third the through all fourth the through
 πασῶν καὶ διὰ τεσσάρων.— ὁ δὲ τῆς φωνῆς τόπος
all and through four the and of-the voice range
 αὖξεται μέχρι τοῦ ὀγδόου συμφώνου ὅπερ ἐστὶ δις διὰ
increases as-far-as the eighth concord which-very is twice through
 πασῶν καὶ διὰ τεσσάρων καὶ δις διὰ πασῶν καὶ διὰ
all and through four and twice through all and through
 πέντε.— διάφωνα δέ ἐστι τὰ τε ἐλάττω τῶν διὰ
five discordant and are the both smaller than-the through
 τεσσάρων καὶ μεταξύ τῶν εἰρημένων συμφώνων πάντα.
four and between the said concords all

Figures arise when the same magnitude, of the same incomposite parts, changes their order. The fourth has three forms, the fifth four, the octave seven — each located by its bounding notes and, for the octave, by the old names: Mixolydian, Lydian, Phrygian, Dorian, Hypolydian, Hypophrygian, and the common, Locrian, or Hypodorian.

Γίνεται δὲ καὶ σχήματα τοῦ αὐτοῦ μεγέθους ἐκ τῶν
 arise and also figures of-the same magnitude from the
 αὐτῶν ἀσυνθέτων συγκεείμενα καὶ ἀριθμοῦ, εἰ ἢ τάξις
 same in-composites composed and number if the order
 αὐτῶν ἀλλοίωσιν λάβοι ἐνυπάρχοντός τινος ἀνομοίου·
 of-them alteration should-take inhering something unlike
 τὰ γὰρ ἐξ ἴσων πάντων ἢ ὁμοίων σχημάτων ἀλλοίωσιν
 those for from equal all or like(-parts) of-figures alteration
 οὐ ποιεῖ. τοῦ μὲν οὖν διὰ τεσσάρων τρία ἐστὶν εἶδη.
 not make of-the indeed then through four three are forms
 πρῶτον μὲν τὸ ὑπὸ βαρυπύκνων περιεχόμενον, οἷόν ἐστι
 first indeed that by heavy-pyknon(-notes) enclosed such-as is
 τὸ ἀπὸ ὑπάτης ὑπάτων ἐπὶ ὑπάτην μέσων· δεύτερον
 that from hypate of-the-lowest to hypate of-the-middle second
 τὸ ὑπὸ μεσοπύκνων περιεχόμενον, οἷόν ἐστι τὸ ἀπὸ
 that by middle-pyknon(-notes) enclosed such-as is that from
 παρυπάτης ὑπάτων ἐπὶ παρυπάτην μέσων· τρίτον δὲ τὸ
 parhypate of-the-lowest to parhypate of-the-middle third and that
 ὑπὸ ὀξυπύκνων περιεχόμενον, οἷόν ἐστι τὸ ἀπὸ λιχανοῦ
 by sharp-pyknon(-notes) enclosed such-as is that from lichanos
 ὑπάτων ἐπὶ λιχανὸν μέσων. ἐν μὲν οὖν ἀρμονία καὶ
 of-the-lowest to lichanos of-the-middle in indeed then harmonia and
 χρώματι πρὸς τὴν τοῦ πυκνοῦ σχέσιν τὰ σχήματα τῶν
 chroma by the of-the pyknon relation the figures of-the

συμφώνων λαμβάνεται, ἐν δὲ διατόνῳ ἐπὶ πυκνοῦ οὐ
concor ds are-taken in and diatonic upon (a)-pyknon not
 γίνεται, διαιρεῖται δὲ τὸ γένος τοῦτο εἰς ἡμιτόνια καὶ τόνους.
it-arises is-divided and the genus this into semitones and tones
 ὑπάρχει δὲ ἐν τῇ διὰ τεσσάρων συμφωνία ἡμιτόνιον μὲν
belongs and in the through four concord semitone indeed
 ἓν, τόνοι δὲ δύο· ὁμοίως δὲ καὶ τῷ διὰ πέντε ἡμιτόνιον
one tones and two likewise and also-in the through five semitone
 μὲν ἓν, τόνοι δὲ τρεῖς· ἐν δὲ τῷ διὰ πασῶν ἡμιτόνια μὲν
indeed one tones and three in and the through all semitones indeed
 δύο, τόνοι δὲ πέντε· πρὸς δὲ τὴν τῶν ἡμιτονίων σχέσιν τὰ
two tones and five by and the of-the semitones relation the
 σχήματα θεωρεῖται. τοῦ οὖν διὰ τεσσάρων πρῶτον μὲν
figures are-viewed of-the then through four first indeed
 ἔστιν εἶδος οὗ τὸ ἡμιτόνιον ἐπὶ τὸ βαρὺ τῶν τόνων
is (a)-form of-which the semitone at the heavy(-end) of-the tones
 κεῖται, δεύτερον δὲ οὗ πρῶτον ἐπὶ τὸ ὀξύ, τρίτον οὗ
lies second and of-which first at the sharp third of-which
 μέσον τῶν τόνων. ἔστι δὲ καὶ ταῦτα ὁμοίως τοῖς
(in-the)-middle of-the tones are and also these likewise to-the
 λοιποῖς γένεσιν ἀπὸ τῶν αὐτῶν φθόγγων ἐπὶ τοὺς αὐτοὺς.
remaining genera from the same notes to the same
 Τοῦ δὲ διὰ πέντε τέσσαρά ἐστι σχήματα. πρῶτον μὲν
of-the and through five four are figures first indeed
 τὸ ὑπὸ βαρυπύκνων περιεχόμενον, οὗ πρῶτος ὁ τόνος
that by heavy-pyknon(-notes) enclosed of-which first the tone
 ἐπὶ τὸ ὀξύ· ἔστι δὲ ἀπὸ ὑπάτης μέσων ἐπὶ παραμέσῃ.
at the sharp is and from hypate of-the-middle to paramese
 δεύτερον δὲ τὸ ὑπὸ μεσοπύκνων περιεχόμενον, οὗ
second and that by middle-pyknon(-notes) enclosed of-which
 δεύτερος ὁ τόνος ἐπὶ τὸ ὀξύ· ἔστιν ἀπὸ παρυπάτης
second the tone at the sharp it-is from parhypate

μέσων ἐπὶ τρίτην διεzeugμένων. τρίτον δὲ τὸ ὑπὸ
of-the-middle to trite of-the-disjoined third and that by
 ὀξυπύκνων περιεχόμενον, οὗ τρίτος ὁ τόνος ἐπὶ
sharp-pyknon(-notes) enclosed of-which third the tone at
 τὸ ὀξύ· ἔστι δὲ ἀπὸ λιχανοῦ μέσων ἐπὶ παρανήτην
the sharp is and from lichanos of-the-middle to paranete
 διεzeugμένων. τέταρτον τὸ ὑπὸ βαρυπύκνων περιεχόμενον,
of-the-disjoined fourth that by heavy-pyknon(-notes) enclosed
 οὗ πρῶτος ὁ τόνος (ἐπὶ τὸ βαρύ)· ἔστι δὲ ἀπὸ μέσης
of-which first the tone at the heavy is and from mese
 ἐπὶ νήτην διεzeugμένων ἢ ἀπὸ προσλαμβανομένου ἐπὶ
to nete of-the-disjoined or from proslambanomenos to
 ὑπάτην μέσων· ἐν δὲ διατόνῳ πρῶτον μὲν ἔστι σχῆμα
hypate of-the-middle in and diatonic first indeed is (a)-figure
 οὗ πρῶτον τὸ ἡμιτόνιον ἐπὶ τὸ βαρὺ κείται, δεύτερον
of-which first the semitone at the heavy lies second
 δὲ οὗ πρῶτον ἐπὶ τὸ ὀξύ, τρίτον οὗ δεύτερον ἐπὶ
and of-which first at the sharp third of-which second at
 τὸ ὀξύ, τέταρτον οὗ πρῶτον ἐπὶ τὸ βαρύ.
the sharp fourth of-which first at the heavy
 Τοῦ δὲ διὰ πασῶν εἶδη ἐστὶν ἑπτὰ. πρῶτον μὲν τὸ
of-the and through all forms are seven first indeed that
 ὑπὸ βαρυπύκνων περιεχόμενον, οὗ πρῶτος ὁ τόνος
by heavy-pyknon(-notes) enclosed of-which first the tone
 ἐπὶ τὸ ὀξύ· ἔστι δὲ ἀπὸ ὑπάτης ὑπάτων ἐπὶ παραμέσῃν,
at the sharp is and from hypate of-the-lowest to paramese
 ἑκαλείτο δὲ ὑπὸ τῶν ἀρχαίων μιξολύδιον.
it-was-called and by the ancients mixolydian

Δεύτερον τὸ ὑπὸ μεσοπύκνων περιεχόμενον οὗ
second that by middle-pyknon(-notes) enclosed of-which

δεύτερος ὁ τόνος ἐπὶ τὸ ὀξύ· ἔστι δὲ ἀπὸ παρυπάτης
second the tone at the sharp is and from parhypate
 ὑπάτων ἐπὶ τρίτην διεzeugμένων, ἐκαλεῖτο δὲ λύδιον.
of-the-lowest to trite of-the-disjoined it-was-called and lydian

Τρίτον τὸ ὑπὸ ὀξυπύκνων περιεχόμενον, οὗ τρίτος
third that by sharp-pyknon(-notes) enclosed of-which third
 ὁ τόνος ἐπὶ τὸ ὀξύ· ἔστι δὲ ἀπὸ λιχανοῦ ὑπάτων ἐπὶ
the tone at the sharp is and from lichanos of-the-lowest to
 παρανήτην διεzeugμένων, ἐκαλεῖτο δὲ φρύγιον.
paranete of-the-disjoined it-was-called and phrygian

Τέταρτον τὸ ὑπὸ βαρυπύκνων περιεχόμενον, οὗ
fourth that by heavy-pyknon(-notes) enclosed of-which
 τέταρτος ὁ τόνος ἐπὶ τὸ ὀξύ· ἔστι δὲ ἀπὸ ὑπάτης
fourth the tone at the sharp is and from hypate
 μέσων ἐπὶ νήτην διεzeugμένων, ἐκαλεῖτο δὲ δώριον.
of-the-middle to nete of-the-disjoined it-was-called and dorian

Πέμπτον τὸ ὑπὸ μεσοπύκνων περιεχόμενον οὗ
fifth that by middle-pyknon(-notes) enclosed of-which
 πέμπτος ὁ τόνος ἐπὶ τὸ ὀξύ· ἔστι δὲ ἀπὸ παρυπάτης
fifth the tone at the sharp is and from parhypate
 μέσων ἐπὶ τρίτην ὑπερβολαίων, ἐκαλεῖτο δὲ ὑπολύδιον.
of-the-middle to trite of-the-topmost it-was-called and hypolydian

Ἑκτον τὸ ὑπὸ ὀξυπύκνων περιεχόμενον, οὗ ἕκτος
sixth that by sharp-pyknon(-notes) enclosed of-which sixth
 ὁ τόνος ἐπὶ τὸ ὀξύ· ἔστι δὲ ἀπὸ λιχανοῦ μέσων ἐπὶ
the tone at the sharp is and from lichanos of-the-middle to
 παρανήτην ὑπερβολαίων, ἐκαλεῖτο δὲ ὑποφρύγιον.
paranete of-the-topmost it-was-called and hypophrygian

Ἑβδομον τὸ ὑπὸ βαρυπύκνων περιεχόμενον, οὗ
seventh that by heavy-pyknon(-notes) enclosed of-which
 πρῶτος ὁ τόνος ἐπὶ τὸ βαρύ· ἔστι δὲ ἀπὸ μέσης ἐπὶ
first the tone at the heavy is and from mese to
 νήτην ὑπερβολαίων ἢ ἀπὸ προσλαμβανομένου ἐπὶ μέσην·
nete of-the-topmost or from proslambanomenos to mese
 ἐκαλεῖτο δὲ κοινὸν καὶ λοκριστὶ καὶ ὑποδώριον.
it-was-called and common and locrian and hypodorian
 Ἐν δὲ διατόνῳ πρῶτον μὲν ἔστιν εἶδος τὸ διὰ πασῶν,
in and diatonic first indeed is (a)-form (of-)the through all
 οὗ πρῶτον μὲν ἐπὶ τὸ βαρὺ, τέταρτον δὲ ἐπὶ τὸ ὀξύ· ἔστι
of-which first indeed at the heavy fourth and at the sharp is
 τὸ ἡμιτόνιον· δεύτερον δὲ οὗ τρίτον μὲν ἐπὶ τὸ βαρὺ,
the semitone second and of-which third indeed at the heavy
 πρῶτον δὲ ἐπὶ τὸ ὀξύ· τρίτον δὲ οὗ δεύτερον ἐφ' ἐκάτερα·
first and at the sharp third and of-which second on either-side
 τέταρτον δὲ οὗ πρῶτον μὲν ἐπὶ τὸ βαρὺ, τρίτον δὲ ἐπὶ
fourth and of-which first indeed at the heavy third and at
 τὸ ὀξύ· πέμπτον δὲ οὗ τέταρτον μὲν ἐπὶ τὸ βαρὺ, πρῶτον
the sharp fifth and of-which fourth indeed at the heavy first
 δὲ ἐπὶ τὸ ὀξύ· ἕκτον δὲ οὗ τρίτον μὲν ἐπὶ τὸ βαρὺ,
and at the sharp sixth and of-which third indeed at the heavy
 δεύτερον δὲ ἐπὶ τὸ ὀξύ· ἑβδομον δὲ οὗ δεύτερον μὲν ἐπὶ
second and at the sharp seventh and of-which second indeed at
 τὸ βαρὺ, τρίτον δὲ ἐπὶ τὸ ὀξύ· ἔστι δὲ καὶ ταῦτα ἀπὸ τῶν
the heavy third and at the sharp are and also these from the
 αὐτῶν φθόγων ἐπὶ τοὺς αὐτοὺς καθάπερ ἐπὶ τῆς ἀρμονίας
same notes to the same just-as in the harmonia
 καὶ τοῦ χρώματος καὶ ἐκαλεῖτο τοῖς αὐτοῖς ὀνόμασι.
and the chroma and it-was-called by-the same names

Systems differ as rational or irrational, successive or transilient, conjoined or disjoined. The conjunctions are three — lowest, middle, sharpest — and the disjunction one, at the tone between mese and paramese. The complete systems are two: the smaller by conjunction to nete of the conjoined, the greater by disjunction through the double octave; together they make the unmodulating system.

Τῇ δὲ τοῦ ῥήτου καὶ ἀλόγου διαφορᾷ διοίσει συστήματα,
by-the and of-the rational and irrational difference will-differ systems

ὅσα ἐκ ῥητῶν διαστημάτων σύγκειται, τῶν ἐξ
as-many-as from rational intervals are-composed from-those from
ἀλόγων. ὅσα μὲν γὰρ ἐκ ῥητῶν ῥητά ἐστιν, ὅσα
irrational as-many indeed for from rational rational are as-many
δὲ ἐξ ἀλόγων ἄλογα.

and from irrational irrational

Τῇ δὲ τοῦ ἐξῆς καὶ ὑπερβατοῦ διαφορᾷ διοίσει
by-the and of-the successive and transilient difference will-differ
συστήματα τὰ διὰ τῶν ἐξῆς φθόγων μελωδούμενα
systems those through the successive notes sung

τῶν καθ' ὑπερβατόν.

from-those by transilience

Τῇ δὲ τοῦ συνημμένου καὶ διεzeugμένου διαφορᾷ διοίσει
by-the and of-the conjoined and disjoined difference will-differ
συστήματα, ὅσα διὰ τῶν συνημμένων τετραχόρδων
systems as-many-as through the conjoined tetrachords

τὴν σύνθεσιν ἔχει τῶν διὰ τῶν διεzeugμένων. ἔστι δὲ
the composition have from-those through the disjoined is and
συναφή μὲν δύο τετραχόρδων ἐξῆς μελωδουμένων,

conjunction indeed (of)-two tetrachords in-succession sung

ὁμοίων κατὰ σχῆμα, φθόγος κοινός. διάζευξις δὲ ἐστι
similar in figure (a)-note common disjunction and is

δύο τετραχόρδων ἐξῆς μελωδουμένων, ὁμοίων κατὰ
(of-)-two tetrachords in-succession sung similar in
 σχῆμα, τόνος ἀνὰ μέσον. εἰσὶ δὲ αἱ πᾶσαι συναφαὶ τρεῖς·
figure (a)-tone in (the)-middle are and the all conjunctions three
 μέση, ὀξύτατη, βαρυτάτη. καὶ ἔστι βαρυτάτη μὲν ἡ ἐκ
middle sharpest heaviest and is heaviest indeed the(-one) from
 τοῦ ὑπάτων καὶ μέσων τετραχόρδου· κοινὸς δὲ αὐτῇ
the of-the-lowest and of-the-middle tetrachord (a)-common and to-it
 συνάπτει φθόγγος ὑπάτη μέσων. μέση δὲ ἔστι συναφή
joins note bypate of-the-middle middle and is conjunction
 ἡ τοῦ μέσων καὶ νητῶν συνημμένων· κοινὸς δὲ
that of-the of-the-middle and netai of-the-conjoined (a)-common and
 αὐτῇ συνάπτει φθόγγος μέση. ὀξύτατη δὲ ἔστι συναφή ἡ
to-it joins note mese sharpest and is conjunction that
 τοῦ διεzeugμένων καὶ τοῦ ὑπερβολαίων· κοινὸς δὲ αὐτῇ
of-the of-the-disjoined and of-the of-the-topmost (a)-common and to-it
 συνάπτει φθόγγος νήτη διεzeugμένων. διάzeugξις δὲ ἔστι μία
joins note nete of-the-disjoined disjunction and is one
 ἡ τοῦ μέσων καὶ νητῶν διεzeugμένων· κοινὸς δὲ αὐτὰ
that of-the of-the-middle and netai of-the-disjoined (a)-common and them
 διαζεύγνυσι τόνος ὁ μεταξύ μέσης καὶ παραμέσης.
disjoins tone the(-one) between mese and paramese
 Τέλεια δὲ ἔστι συστήματα δύο, ὧν τὸ μὲν ἔλαττον,
complete and are systems two of-which the one smaller
 τὸ δὲ μείζον. καὶ ἔστι τὸ μὲν ἔλαττον κατὰ συναφήν
the other greater and is the one smaller by conjunction
 ἀπὸ προσλαμβανομένου ἐπὶ νήτην συνημμένων. ὑπάρχει
from proslambanomenos to nete of-the-conjoined belong
 δὲ ἐν αὐτῷ τετράχορδα τρία συνημμένα τάδε· ὑπάτων
and in it tetrachords three conjoined these of-the-lowest
 μέσων συνημμένων, καὶ τόνος ἀπὸ προσλαμβανομένου
of-the-middle of-the-conjoined and (a)-tone from proslambanomenos

ἐπὶ ὑπάτην ὑπάτων· συμφώνῳ δὲ ὀρίζεται τῷ διὰ
to hygate of-the-lowest by-a-concord and is-bounded by-the through
 πασῶν καὶ διὰ τεσσάρων.

all and through four

Τὸ δὲ μείζον ἐστι κατὰ διάζευξιν ἀπὸ προσλαμβανομένου ἐπὶ
the and greater is by disjunction from proslambanomenos to
 νήτην ὑπερβολαίων. ὑπάρχει δὲ ἐν αὐτῷ τετράχορδα μὲν
nete of-the-topmost belong and in it tetrachords indeed
 τέσσαρα διὰ δυοῖν διεzeugμένα, ἀλλήλοις δὲ συνημμένα, τό
four by twos disjoined to-one-another but conjoined the
 τε ὑπάτων καὶ μέσων, καὶ διεzeugμένων καὶ ὑπερβολαίων,
both of-the-lowest and of-the-middle and of-the-disjoined and of-the-topmost
 καὶ ἔτι τόνοι δύο, ὃ τε ἀπὸ προσλαμβανομένου ἐπὶ
and further tones two the both from proslambanomenos to
 ὑπάτην ὑπάτων καὶ ὁ ἀπὸ παραμέσης ἐπὶ μέσην.
hygate of-the-lowest and the(-one) from paramese to mese
 συμφώνῳ δὲ διορίζεται τῷ δις διὰ πασῶν.

by-a-concord and is-bounded by-the twice through all

Πέντε δὲ ὄντων τετραχόρδων ἐν τῷ ἀμεταβόλῳ συστήματι
five and being tetrachords in the unmodulating system
 ὅπερ ἐστὶν ἐξ ἀμφοῖν τελείων σύνθετον, τὰ μὲν
which-very is from both complete(-systems) composite the indeed
 δύο κοινά ἐστιν ἐκατέρῳ τῶν τελείων, τό τε ὑπάτων
two common are to-each of-the complete the both of-the-lowest
 καὶ μέσων· ἴδια δὲ τοῦ μὲν κατὰ συναφὴν τὸ νητῶν
and of-the-middle proper and of-the one by conjunction the of-netai
 συνημμένων, τοῦ δὲ κατὰ διάζευξιν τὸ νητῶν διεzeugμένων
conjoined of-the other by disjunction the of-netai disjoined
 καὶ νητῶν ὑπερβολαίων.
and of-netai topmost

Systems are simple, double, triple, or manifold as they are attuned to one mese or more. Mese is the function of a note: in disjunction it has an incomposite tone above it, and in conjunction it is the sharpest of the middle tetrachord or the heaviest of the sharpest. From it the functions of all the remaining notes are known.

Τῇ δὲ τοῦ ἀμεταβόλου καὶ ἐμμεταβόλου διοίσει, καθ'
by-the and of-the unmodulating and modulating it-will-differ by
 ἣν διαφέρει τὰ ἀπλᾶ συστήματα τῶν μὴ ἀπλῶν. ἀπλᾶ
which differ the simple systems from-the not simple simple
 μὲν οὖν ἐστὶ τὰ πρὸς μίαν μέσῃ ἡρμοσμένα, διπλᾶ δὲ
indeed then are those to one mese attuned double and
 τὰ πρὸς δύο, τριπλᾶ δὲ τὰ πρὸς τρεῖς, πολλαπλάσια
those to two triple and those to three manifold
 δὲ τὰ πρὸς πλείονα. ἔστι δὲ μέση φθόγγου δύναμις,
and those to more is and mese of-a-note (a)-function
 ᾧ συμβέβηκε κατὰ μὲν διάζευξιν ἐπὶ μὲν τὸ ὀξύ
to-which it-has-befallen in indeed disjunction at indeed the sharp
 τόνον ἔχειν ἀσύνθετον (ἀπαθῇ ὄντα τοῦ συστήματος), ἐπὶ
(a)-tone to-have incomposite unaffected being by-the system at
 δὲ τὸ βαρὺν δίτονον ἢ τριημιτόνιον ἢ τόνον ἀσύνθετον.
and the heavy (a)-ditone or three-semitone or tone incomposite
 κατὰ δὲ συναφὴν, ᾧ συμβαίνει τριῶν τετραχόρδων
in and conjunction to-which it-befalls (of-)three tetrachords
 συνημμένων ἥτοι τοῦ μέσου ὀξυτάτῳ εἶναι, ἥτοι τοῦ
conjoined either of-the middle (the)-sharpest to-be or of-the
 ὀξυτάτου βαρυτάτῳ. ἀπὸ δὲ τῆς μέσης καὶ τῶν λοιπῶν
sharpest (the)-heaviest from and the mese also of-the remaining

φθόγγων αἱ δυνάμεις γνωρίζονται, τὸ γὰρ πῶς ἔχειν
 notes the functions are-known the for how stands
 ἕκαστον αὐτῶν πρὸς τὴν μέσιν φανερώς γίνεται.
 each of-them toward the mese evident becomes

12 · THE FOUR SENSES OF TONE

Tone is said in four ways: as note, as in Terpander's and Ion's seven-toned phorminx; as the interval from mese to paramese; as region of the voice — the thirteen keys of Aristoxenus, from Hypermixolydian down to Hypodorian, a semitone apart and spanning an octave; and as tension of speech, high, low, or middle.

Τόνος δὲ λέγεται τετραχῶς· καὶ γὰρ ὡς φθόγγος καὶ ὡς
 tone and is-said in-four-ways both for as note and as
 διάστημα καὶ ὡς τόπος φωνῆς καὶ ὡς τάσις. ἐπὶ μὲν οὖν τοῦ
 interval and as region of-voice and as tension in indeed then the
 φθόγγου χρῶνται τῷ ὀνόματι οἱ λέγοντες ἑπτάτονον τὴν
 note use the name those calling seven-toned the
 φόρμιγγα καθάπερ Τέρπανδρος καὶ Ἴων. ὁ μὲν γὰρ φησιν·
 phorminx just-as Terpander and Ion the one for says
 ἡμεῖς τοι τετράγηνυν ἀποστέρξαντες αἰοιδὰν ἑπτατόνῳ
 we verily the-four-voiced having-renounced song with-seven-toned
 φόρμιγγι νέους κελαδήσομεν ὕμνους. ὁ δέ· ἐνδεκάχορδε
 phorminx new we-shall-sound hymns the other eleven-stringed
 λύρα, δεκαβάμονα τάξιν ἔχουσα τὰς συμφωνούσας ἀρμονίας
 lyre ten-stepped order holding the concording of-harmony
 τριόδους· πρὶν μὲν σ' ἑπτάτονον ψάλλον δις τέσσαρα πάντες
 triple-ways before indeed you seven-toned plucked twice four all
 Ἕλληνες σπανίαν μοῦσαν αἰεράμενοι. καὶ ἕτεροι δὲ οὐκ
 Greeks scanty muse lifting-up also others and not

ὀλίγοι κέχρηται τῷ ὀνόματι. ἐπὶ δὲ τοῦ διαστήματος,
few have-used the name in and the(-sense-of) interval
 ὅταν λέγωμεν ἀπὸ μέσης ἐπὶ παραμέσῃν τόνον εἶναι.
when we-say from mese to paramese (a)-tone to-be
 δὲ ὡς τόπος φωνῆς, ὅταν λέγωμεν δώριον ἢ φρύγιον ἢ
and as region of-voice when we-say dorian or phrygian or
 λύδιον ἢ τῶν ἄλλων τινά. εἰσὶ δὲ κατὰ Ἀριστοξένου
lydian or of-the others some are and according-to Aristoxenus
 ἱγ τόνοι.

13 keys

Ὑπερμιξολύδιος καὶ ὑπερφρύγιος καλούμενος· μιξολύδιος
hypermixolydian also hyperphrygian called mixolydians
 δύο, ὀξύτερος καὶ βαρύτερος, ὧν ὁ ὀξύτερος καὶ
two sharper and heavier of-which the sharper also
 ὑπεριάστιος καλεῖται, ὁ δὲ βαρύτερος καὶ ὑπερδώριος·
hyperiastian is-called the and heavier also hyperdorian
 λύδιοι δύο, ὀξύτερος καὶ βαρύτερος, ὧν ὁ βαρύτερος
lydians two sharper and heavier of-which the heavier
 καὶ αἰόλιος καλεῖται· φρύγιοι δύο, ὀξύτερος καὶ βαρύτερος,
also aeolian is-called phrygians two sharper and heavier
 ὧν ὁ βαρύτερος καὶ ἰάστιος καλεῖται· δώριος εἷς·
of-which the heavier also iastian is-called dorian one
 ὑπολύδιοι δύο, ὀξύτερος καὶ βαρύτερος, ὃς καὶ ὑποαιόλιος
hypolydians two sharper and heavier which also hypoaolian
 καλεῖται· ὑποφρύγιοι δύο, ὧν ὁ βαρύτερος καὶ
is-called hypophrygians two of-which the heavier also
 ὑποιάστιος καλεῖται· ὑποδώριος.
hypoiastian is-called hypodorian

Τούτων ὀξύτατος μὲν ὁ ὑπερμιξολύδιος, βαρύτατος δὲ ὁ
of-these sharpest indeed the hypermixolydian heaviest and the
 ὑποδώριος· οἱ δὲ ἐξῆς οἱ ἀπὸ τῶν ὀξυτάτων μέχρι τοῦ
hypodorian the and successive those from the sharpest until the

βαρυτάτου ἡμιτόνιον ἀλλήλων ὑπερέχοντες, παράλληλοι
heaviest by-a-semitone one-another exceeding alternate(-ones)
 δὲ δύο τόνον, οἱ δὲ τρίτοι τριημιτόνιον· ἀναλόγως
and two by-a-tone the and third(-neighbors) by-three-semitones analogously
 δὲ ἔξει καὶ ἐπὶ τῆς τῶν λοιπῶν τόνων διαστάσεως.
and it-will-hold also for the of-the remaining keys spacing
 ὁ δὲ ὑπερμιξολύδιος τοῦ ὑποδωρίου τῷ διὰ πασῶν
the and hypermixolydian than-the hypodorian by-the through all
 ἔστιν ὀξύτερος.

is sharper

Ὁ δὲ ὡς τάσις τόνος λέγεται, καθ' ὃ φάμεν
the and as tension tone is-said according-to which we-say
 ὀξυτονεῖν τινα ἢ βαρυτονεῖν μέσῳ τῷ τῆς φωνῆς τόνῳ
to-speak-high someone or to-speak-low (in-)middle the of-the voice tone
 κεχρησθαι.

to-use

13 • THE FOUR MODULATIONS

*Modulation happens by genus, by system, by key, or by melody-making. Modulatio-
 tions by key run from the semitone to the octave, the more melodic the more the
 keys share; community is judged by likeness of notes in their share of the pyknon.
 The characters of melody-making are three: the expansive of tragedy, the contractile
 of laments and love-songs, the quietist of hymns and paeans.*

Μεταβολὴ δὲ λέγεται τετραχῶς· καὶ γὰρ κατὰ γένος καὶ
modulation and is-said in-four-ways both for by genus and
 κατὰ σύστημα καὶ κατὰ τόνον καὶ κατὰ μελοποιῖαν. κατὰ
by system and by key and by melody-making by
 μὲν οὖν γένος γίνεται μεταβολή, ὅταν ἐκ διατόνου εἰς
indeed then genus arises modulation when from diatonic into

χρώμα ἢ ἀρμονίαν, ἢ ἐκ χρώματος ἢ ἀρμονίας εἰς τι
chroma or harmonia or from chroma or harmonia into some
 τῶν λοιπῶν μεταβολὴ γένηται. κατὰ σύστημα δὲ, ὅταν ἐκ
of-the rest modulation arises by system and when from
 συναφῆς εἰς διάζευξιν ἢ ἀνάπαλιν μεταβολὴ γένηται. κατὰ
conjunction into disjunction or back-again modulation arises by
 τόνον δὲ, ὅταν ἐκ δωρίων εἰς φρύγια, ἢ ἐκ φρυγίων εἰς
key and when from dorian(-keys) into phrygian or from phrygian into
 λύδια ἢ ὑπερμιξολύδια ἢ ὑποδώρια, ἢ καθόλου ὅταν ἐκ
lydian or hypermixolydian or hypodorian or in-general when from
 τινος τῶν δεκατριῶν τόνων εἰς τινα τῶν λοιπῶν μεταβολὴ
some of-the thirteen keys into some of-the rest modulation
 γένηται. γίνονται δὲ μεταβολαὶ ἀπὸ τῆς ἡμιτονιαίας
arises arise and modulations from the semitone-sized
 ἀρξάμεναι μέχρι τοῦ διὰ πασῶν, ὧν αἱ μὲν κατὰ
having-begun as-far-as the through all of-which the some at
 σύμφωνα γίνονται διαστήματα, αἱ δὲ κατὰ διάφωνα. τούτων
concordant arise intervals the others at discordant of-these
 δ' ἐμμελεῖς μὲν αἶ τε κατὰ σύμφωνα γινόμενα διαστήματα
and melodic indeed the both at concordant arising intervals
 καὶ ἡ τονιαία. τῶν δὲ λοιπῶν αἱ μὲν ἄσπον ἐμμελεῖς ἦττον
and the tone-sized of-the and rest the some nearer melodic less
 ἢ ἐκμελεῖς, αἱ δὲ μᾶλλον ἀπέχουσαι μᾶλλον. ἐν ὅσαις
or unmelodic the others more standing-off more in as-many
 μὲν οὖν αὐτῶν πλείων ἢ κοινωνία, ἐμμελέστεραί εἰσιν, ἐν
indeed then of-them (the)-greater the community more-melodic they-are in
 ὅσοις δὲ ἐλάττων, ἐκμελέστεραι· ἐπεὶ δὲ ἀναγκαῖον πάση
as-many and (the)-less more-unmelodic since (it-is)-necessary for-every
 μεταβολῇ κοινόν τι ὑπάρχειν ἢ φθόγγον ἢ διάστημα
modulation common something to-belong either (a)-note or interval
 ἢ σύστημα. λαμβάνεται δὲ ἡ κοινωνία καθ' ὁμοιότητα
or system is-taken and the community by likeness

φθόγγων· ὅταν γὰρ ἐπ' ἀλλήλους ἐν ταῖς μεταβολαῖς
of-notes when for upon one-another in the modulations
 πέσωσιν ὅμοιοι φθόγγοι κατὰ τὴν τοῦ πυκνοῦ μετοχήν,
fall like notes in the of-the pyknon participation
 ἐμμελὴς γίνεται ἢ μεταβολή, ὅταν δὲ ἀνόμοιοι, ἐκμελὴς.
melodic becomes the modulation when but unlike unmelodic
 Κατὰ δὲ μελοποιῖαν γίνεται μεταβολή, ὅταν ἐκ
by and melody-making arises modulation when from
 διασταλτικοῦ ἥθους εἰς συσταλτικὸν ἢ ἡσυχαστικὸν, ἢ ἐξ
expansive character into contractile or quietist or from
 ἡσυχαστικοῦ εἰς τι τῶν λοιπῶν ἢ μεταβολὴ γένηται. ἔστι
quietist into some of-the rest the modulation arises is
 δὲ διασταλτικὸν μὲν ἥθος μελοποιῖας, δι' οὗ σημαίνεται
and expansive indeed character of-melody-making through which is-signified
 μεγαλοπρέπεια καὶ διάρμα ψυχῆς ἀνδρῶδες καὶ πράξεις
magnificence and lifting of-soul manly and deeds
 ἡρωϊκαὶ καὶ πάθη τούτοις οἰκεῖα. χρῆται δὲ τούτοις μάλιστα
heroic and passions to-these proper uses and these most
 μὲν ἡ τραγῳδία καὶ τῶν λοιπῶν δὲ ὅσα τούτου ἔχεται
indeed the tragedy and of-the rest and as-many-as this bold-to
 τοῦ χαρακτήρος. συσταλτικὸν δὲ, δι' οὗ συνάγεται
the character contractile and(-that) through which is-drawn-together
 ἡ ψυχὴ εἰς ταπεινότητα καὶ ἄνδρον διάθεσιν. ἀρμόσει δὲ
the soul into lowliness and unmanly disposition will-suit and
 τὸ τοιοῦτον κατάστημα τοῖς ἐρωτικοῖς πάθεσι καὶ θρήνοις
the such condition to-the erotic passions and dirges
 καὶ οἴκτοις καὶ τοῖς παραπλησίοις. ἡσυχαστικὸν δὲ ἥθος
and lamentations and the like quietist and character
 ἐστὶ μελοποιῖας, ᾧ παρέπεται ἡρεμότης ψυχῆς καὶ
is of-melody-making on-which attends stillness of-soul and

κατάστημα ἐλευθέριον τε καὶ εἰρηνικόν. ἀρμόσουσι δὲ αὐτῷ
 (a)-condition liberal both and peaceful will-suit and it
 ὕμνοι παιᾶνες ἐγκώμια συμβουλαὶ καὶ τὰ τούτοις ὅμοια.
 hymns paeans encomia counsels and the to-these like

14 • MELODY-MAKING AND THE DIAGRAM

Melody-making uses the materials of harmonics, and is accomplished through four things: course, plaiting, checker-play, and holding. A diagram is a plane figure enclosing the functions of the notes, and function is the rank by which each note is known. So ends the study of the attuned.

Μελοποιΐα ἐστὶ χρήσις τῶν προειρημένων μερῶν τῆς
 melody-making is (a)-use of-the aforesaid parts of-the
 ἀρμονικῆς καὶ ὑποκειμένων δύναμιν ἔχόντων. δι'
 harmonic(-science) also underlying function having through
 ὧν δὲ μελοποιΐα ἐπιτελεῖται δ' ἐστίν· ἀγωγὴ πλοκῇ
 which and melody-making is-accomplished 4 are course plaiting
 πεττεία τονή. ἀγωγὴ μὲν οὖν ἐστίν ἢ διὰ τῶν ἐξῆς
 checker-play holding course indeed then is the through the successive
 φθόγων ὁδὸς τοῦ μέλους, πλοκῇ δὲ ἢ ἐναλλάξ τῶν
 notes road of-the melody plaiting and the alternate of-the
 διαστημάτων θέσις παράλληλος, πεττεία δὲ ἢ ἐφ' ἐνὸς
 intervals placement side-by-side checker-play and the upon one
 τόνου πολλάκις γινομένη πληξίς, τονή δὲ ἢ ἐπὶ πλείονα
 tone often arising striking holding and the for longer
 χρόνον μονὴ κατὰ μίαν γινομένη προφορὰν τῆς φωνῆς.
 time staying on one arising utterance of-the voice
 Διάγραμμα δὲ σχῆμα ἐπίπεδον τὰς τῶν μελωδουμένων
 (a)-diagram and (is)-a-figure plane the of-the sung(-notes)
 περιέχον δυνάμεις.
 enclosing functions

Δύναμις δέ ἐστι τάξις φθόγγου ἐν συστήματι, ἢ δυνάμεις
function and is (the)-rank of-a-note in (a)-system or function
 ἐστι τάξις φθόγγου, δι' ἧς γνωρίζομεν τῶν φθόγγων
is (the)-rank of-a-note through which we-recognize of-the notes
 ἕκαστον.

each

Μελοποιία δέ ἐστι χρήσις τῶν ὑποκειμένων τῇ
melody-making and is (a)-use of-the(-materials) underlying the
 ἀρμονικῇ πραγματείᾳ πρὸς τὸ οἰκεῖον ἐκάστης
harmonic study toward the proper(-character) of-each
 ὑποθέσεως.

undertaking

Οὗτος ὁ ὅρος τῆς κατὰ τὸ ἡρμωσμένον ἐστὶ
this the boundary of-the concerning the attuned is
 πραγματείας.
study

NICOMACHUS

APMONIKON ΕΓΧΕΙΡΙΔΙΟΝ

Handbook of Harmonics

“Οτι τὸ βιβλίον ἐγχειρίδιόν ἐστιν
ὑπόμνημα τῆς ἁρμονικῆς στοιχειώσεως

1 · WHY THIS HANDBOOK IS BRIEF

Nicomachus writes to a noble lady from the road, apologizing that travel and haste allow him only the bare headings without proof. He promises a fuller and more exact introduction, in several books, as soon as he has leisure — and begins where he began when he taught her these things in person.

Εἰ καὶ πολύχους καθ' ἑαυτὸν καὶ δυσπερίληπτος ἐνὶ
if even abundant in itself and hard-to-embrace in-one
συμπερανθῆναι ὑπομνήματι ὁ περὶ τῶν ἐν τοῖς ἁρμονικοῖς
to-be-concluded memorandum the about the in the harmonic
στοιχείοις διαστημάτων τε καὶ σχέσεων ὑπάρχει λόγος,
elements intervals both and relations subsists account
ἐγὼ τε ἄλλως ὑπὸ τῆς ὁδοιπορικῆς ἀκαταστασίας καὶ
I both otherwise by the of-travel unsettledness and
συνεπιείξεως οὐκ ἀκυμάντῳ τοῦ λόγου φροντίδι καὶ διανοίᾳ
urgency not with-unruffled for-the account care and mind
δυνατός εἰμι τῇ περὶ τούτων ἐπιβαλέσθαι διδασκαλίᾳ
able am to-the about these to-set-my-hand teaching
μετὰ τῆς προσηκούσης σαφηνείας σχολαίου μάλιστα καὶ
with the befitting clarity of-leisurely especially and
ἀπερυσπαστοῦ δεομένης καιροῦ τε καὶ συλλογισμοῦ,—
undistracted standing-in-need occasion both and reasoning
πᾶσαν ὅμως ἐπιρρωστέον ἐστὶ μοι σπουδὴν σοῦ
all nevertheless must-be-strengthened is by-me zeal you
γε κελεύουσης, ἀρίστη καὶ σεμνοτάτῃ γυναικῶν, κἂν
at-least bidding best and most-revered of-women even-if
αὐτὰ ψιλὰ τὰ κεφάλαια χωρὶς κατασκευῆς καὶ ποικίλης
themselves bare the headings without construction and varied

ἀποδείξεως ἐκθέσθαι σοι κατ' ἐπιδρομήν· ἵνα ὑπὸ μίαν
demonstration to-set-out for-you at a-run so-that under one
 ἔχουσα αὐτὰ σύνοψιν ἐγχειριδίῳ τε ὥσανεὶ χρωμένη τῇ
having them synopsis (as-)handbook both as-it-were using the
 βραχεία ταύτῃ ὑποσημειώσει ὑπομνησκήν ἐξ αὐτῆς
brief this annotation you-may-be-reminded from it
 τῶν ἐν ἐκάστῳ κεφαλαίῳ κατὰ πλάτος λεγομένων τε
of-the(-things) in each heading at large said both
 καὶ διδασκομένων. θεῶν δὲ ἐπιτρεπόντων αὐτίκα μάλα
and taught (the)-gods and permitting immediately very
 σχολῆς λαβόμενος καὶ τῆς ὁδοιπορίας ἀνάπαυσιν σχῶν
leisure having-taken and of-the journeying rest having-got
 συντάξω τέ σοι μείζονα καὶ ἀκριβεστέραν εἰσαγωγὴν
I-will-compose both for-you (a)-greater and more-exact introduction
 περὶ αὐτῶν τούτων καὶ πλήρει τὸ λεγόμενον συλλογισμῶ
about these-same things and with-full what is-called reasoning
 διηρθρωμένην καὶ ἐν πλείοσι βιβλίοις, καὶ διὰ τῆς πρωτίστης
articulated and in several books and by the very-first
 ἀφορμῆς ἀποπέμψω, ἔνθα ἂν διάγειν ὑμᾶς πυνθανώμεθα.
occasion I-will-send(-it) wherever ever to-dwell you we-learn
 τὴν δὲ ἀρχὴν ἐκεῖθεν ποθεν ποιήσομαι ῥάονος ἔνεκα
the and beginning from-there somewhere I-will-make of-easier for-the-sake-of
 παρακολουθήσεως, ὅθεν καὶ ἡνίκα ἐξηγούμην σοι περὶ
following whence also when I-was-expounding to-you about
 αὐτῶν τούτων τὴν τῆς διδασκαλίας ἐποιησάμην ἀρχήν.
these-same things the of-the teaching I-made beginning

Περὶ τῶν δύο τῆς φωνῆς εἰδῶν, τοῦ τε διαστηματικοῦ
καὶ τοῦ συνεχοῦς, καὶ τῶν τόπων αὐτῶν

2 · THE TWO KINDS OF VOICE

The Pythagoreans distinguished two forms of the human voice: the intervallic, which stands on each note and shows the difference of every part, and the continuous, which we use in conversation and reading. Speak with audible steps between notes and you are said to chant, not to speak. Most of the continuous voice's range is in our power; the intervallic is bounded by nature — beginning at the first audible sound, ending at the last the voice can sing.

Τῆς ἀνθρωπίνης φωνῆς οἱ ἀπὸ τοῦ Πυθαγορικοῦ
of-the human voice those from the Pythagorean
διδασκαλείου δύο ἔφασκον ὡς ἐνὸς γένους εἶδη ὑπάρχειν·
school two asserted as of-one genus forms to-subsist
καὶ τὸ μὲν συνεχὲς ἰδίως ὠνόμαζον, τὸ δὲ διαστηματικὸν
and the one continuous properly they-named the other intervallic
ἀπὸ τῶν ἑκατέρω συμβεβηκότων τὰς κλήσεις
from the(-properties) to-each befalling the namings
ποιούμενοι. τὸ μὲν γὰρ διαστηματικὸν τὸ ἔνφθον καὶ
making the one for intervallic the in-song and
ἐπὶ παντὶ φθόγγῳ ἰστάμενον καὶ δῆλην ποιοῦν τὴν ἐν
upon every note standing and plain making the in
ἅπασιν τοῖς μέρεσιν παραλλαγὴν ὑπελάμβανον ἀσύγχυτον
all the parts variation they-supposed unconfused
τε ὑπάρχον καὶ τοῖς μεγέθεσιν τοῖς καθ' ἕκαστον φθόγγον
both subsisting and by-the magnitudes those at each note
διηρθρωμένον καὶ διεστώς, ὥσπερ κατὰ σωρείαν καὶ
articulated and standing-apart as-it-were by heaping and
οὐ κατ' ἔγκρασιν τῶν τῆς φωνῆς μορίων ἀλλήλοις
not by blending of-the of-the voice portions to-one-another

παρακειμένων, εὐχωρίστων τε καὶ εὐδιαγνώστων καὶ
 lying-beside well-separable both and well-distinguishable and
 παντοίως μὴ συνεφθαρμένων. τὸ γὰρ ἔνωδον τοιοῦτόν
 in-every-way not corrupted-together the for in-song(-voice) such
 ἐστὶ τὸ πάντας ἐμφαῖνον τοῖς ἐπιστήμοσι τοὺς φθόγγους,
 is that all showing-forth to-the skilled the notes
 ἡλικίου ἕκαστος μεγέθους μετέχει. εἰ γὰρ μὴ οὕτως τις
 of-how-great each magnitude partakes if for not thus one
 χρῶτο αὐτῷ, οὐκέτι ᾄδων λέγεται ἀλλὰ λέγειν. τὸ δὲ
 should-use it no-longer to-sing he-is-said but to-speak the and
 ἕτερον τὸ συνεχές, καθ' ὃ ὁμιλοῦμεν τε ἀλλήλοις
 other the continuous according-to which we-converse both with-one-another
 καὶ ἀναγινώσκομεν, οὐδεμίαν ἔχοντες ἀνάγκην ἐμφανεῖς
 and read no having necessity plain
 τὰς τῶν φθόγγων τάσεις καὶ διακεκριμένας ἀπ' ἀλλήλων
 the of-the notes tensions and distinguished from one-another
 ποιέσθαι, ἀλλὰ εἴροντες τὸν λόγον ἕως τῆς τοῦ φραζομένου
 to-make but stringing the speech until the of-the expressed
 τελειώσεως. εἰ γὰρ τις ἢ διαλεγόμενος ἢ ἀπομνημονεύων
 completion if for someone either conversing or recounting
 τινος ἢ ἀναγινώσκων γε ἔκδηλα μεταξὺ καθ' ἕκαστον
 something or reading at-least evident between at each
 φθόγγον ποιῇ τὰ μεγέθη, διστάνων καὶ μεταβάλλων τὴν
 note makes the magnitudes separating and changing the
 φωνὴν ἀπ' ἄλλου εἰς ἄλλον, οὐκέτι λέγειν ὁ τοιοῦτος
 voice from one to another no-longer to-speak the such(-man)
 οὐδὲ ἀναγινώσκειν ἀλλὰ μελεάζειν λέγεται. διμεροῦς δὲ
 nor to-read but to-chant is-said two-fold indeed
 ὑπαρχούσης τῆς ἀνθρώπου φωνῆς, δύο εἰκότως καὶ τόπους,
 being the of-man voice two with-reason also regions
 οὓς ἑκάτερα κατέχει διερχομένη, ὥοντο εἶναι. καὶ τὸν μὲν
 which each occupies traversing they-thought to-be and the one

τῆς συνεχοῦς τόπον ἀόριστον φύσει τῷ μεγέθει ὑπάρχειν,
of-the continuous region undefined by-nature in magnitude to-be
 ἀφ' οὗ ἂν ἄρξῃται ὁ λαλῶν μέχρις ἂν παύσῃται,
from which ever begins the(-man) talking until ever he-cease
 τὸ οἰκείον πέρας λαμβάνοντα, τουτέστι τὸν ἀπὸ τῆς
the proper limit taking that-is the(-region) from the
 πρώτης λαλιᾶς μέχρις ἐσχάτης σιωπῆς, ὥστε τὸ πλεόν
first talk until (the)-last silence so-that the greater(-part)
 αὐτοῦ ἐφ' ἡμῶν ὑπάρχειν· τὸν δὲ τῆς διαστηματικῆς
of-it in our-power to-be the other of-the intervallic
 οὐκέτι ἐφ' ἡμῶν, ἀλλὰ φυσικὸν, ὀριζόμενον καὶ αὐτὸν ὑπὸ
no-longer in our-power but natural being-bounded also itself by
 διαφερόντων ἐνεργημάτων· ἀρχὴν μὲν γὰρ αὐτοῦ τὸ
differing operations (the)-beginning indeed for of-it the
 πρῶτον ἀκουστὸν εἶναι, τέλος δὲ τὸ ἔσχατον φωνητόν.
first audible to-be (the)-end and the last utterable
 ἐκεῖθεν γὰρ ἀρχόμεθα συνιέναι καὶ συνορᾶν τῶν φθόγγων
from-there for we-begin to-comprehend and to-see-together of-the notes
 τὰ μεγέθη καὶ τὰς πρὸς ἀλλήλους παραλλαγὰς, ὅθεν ἂν
the magnitudes and the toward one-another variations wherever ever
 πρώτιστα ἡμῶν ἡ ἀκοὴ ἐνεργεῖν φαίνεται, δυνατοῦ ὄντος
first-of-all for-us the hearing to-operate appears possible being(-it)
 ἀμυδροτέρας φωνὰς καὶ μήπω ἡμῶν αἰσθητὰς ἐν τῇ φύσει
fainter sounds and not-yet to-us perceptible in the nature
 συντελεῖσθαι λανθανούσας ἔτι τὴν ἀκοήν. καθ' ἃ
to-be-accomplished escaping still the hearing according-to which
 λόγου χάριν κἂν τοῖς ζυγικοῖς ἔστι τινὰ σώματα
of-argument for-the-sake even-in the weighing(-arts) there-are some bodies
 ἥκιστα βάρους ἐμφαντικά, ἄχνη ἢ πίτυρα ἢ τοιαῦθ' ἕτερα·
least of-weight indicative chaff or bran or such-things other
 ἀλλ' ὅταν κατ' ἐπισύνθεσιν τῶν τοιούτων ἤδη ῥοπῆς
but when by piling-together of-the such already of-inclination

ἀρχή τις ἐμφαίνεται, τότε τῆς ζυγικῆς ἐπιστήμης
(a)-beginning certain shows-forth then of-the weighing science
 φαμέν τὴν πρώτην ὑποδρομὴν ὑπάρχειν. οὕτω καὶ κατὰ
we-say the first onset to-subsist so also by
 βραχὺ τῆς κατὰ τὴν φωνὴν ἀμυδρότητος ἐπὶ τὸ μείζον
little of-the in the voice faintness toward the greater
 αὐξανομένης τὸ πρότιστον ἀκοῇ αἰσθητὸν ἀρχὴν τοῦ
increasing the first-of-all to-hearing perceptible (as)-beginning of-the
 τῆς ἐνωδοῦ φωνῆς τόπου ποιούμεθα. τέλος δὲ αὐτοῦ
of-the in-song voice region we-make (the)-end and of-it
 οὐκέτι ἢ ἀκοῇ ὀρίζει, ἀλλ' ἢ ἀνθρωπίνῃ φωνῇ. ἐφ' ὅσον
no-longer the hearing bounds but the human voice as-far as
 γὰρ ἐφικνέεται δι' ἐμμελείας καὶ ἐνωδῶς προχωρεῖ, μέχρι
for it-reaches through melodiousness and in-song advances up-to
 τούτου τὸ τελευταῖον πέρας τοῦ τῆς τοιαύτης φωνῆς
this the final limit of-the of-the of-such voice
 τόπου ὀρίζομεν. μηδὲν δ' ἡμῖν διαφερέτω τανῦν, εἴτε ἐπὶ
region we-bound in-nothing and for-us let-it-differ for-now whether about
 τῆς ἀρτηριακῆς ἡμῶν φωνῆς εἴτε ἐπὶ τῆς τῶν ὀργάνων
the windpipe our voice or about that of-the instruments
 ἐντατῶν τε καὶ ἐμπνευστῶν καὶ κρουστῶν ποιούμεθα
strung both and blown and struck we-make
 τὸν λόγον κατὰ μίμῃσιν τῆς ἡμετέρας συντελεσθέντων·
the account in imitation of ours accomplished
 ὑπερθώμεθα δ' ἐπὶ τοῦ παρόντος τὴν ἐν τούτοις διαφορὰν,
let-us-put-off and for the present the in these difference
 ἵνα μὴ σκορπίζωμεν εὐθὺς ἐν ἀρχῇ τὴν ἐξήγησιν.
so-that not we-scatter straightway at (the)-beginning the exposition

Ὅτι ἡ πρώτη ἐν αἰσθητοῖς μουσικῇ περὶ τοὺς πλάνητας
θεωρεῖται κατὰ μίμησιν δ' ἐκείνης ἡ παρ' ἡμῖν

3 • THE NOTES NAMED FROM THE PLANETS

The names of the notes plausibly come from the seven wandering stars. Bodies rushing through a yielding medium must make sounds differing in pitch by their bulk, their speed, and their stations — and these three differences are plain in the planets. Saturn, highest from us, gave hybate; the Moon, lowest, nete; Jupiter parhybate, Venus paranete, the Sun mese, Mars hypermese or lichanos, Mercury paramese.

Τὰ μὲν οὖν ὀνόματα τῶν φθόγγων ἀπὸ τῶν κατ'
the indeed then names of-the notes from the through
οὐρανὸν ἰόντων ἑπτὰ ἀστέρων καὶ τὴν γῆν περιπολούντων
heaven going seven stars and the earth circling
πιθανὸν ὠνομάσθαι. πάντα γὰρ τὰ ροιζούμενά φασι
(it-is)-plausible to-have-been-named all for the rushing they-say
σώματα καθυπεύκοντός τινος καὶ ῥᾶστα κυμαινομένου
bodies yielding-beneath something and most-easily undulating
ψόφους ἀναγκαιῶς ποιεῖν μεγέθει καὶ φωνῆς τόπῳ
sounds necessarily to-make in-magnitude and of-voice in-region
παρηλλαγμένους ἀλλήλων ἥτοι παρὰ τοὺς ἑαυτῶν
differing from-one-another either because-of the their-own
ὄγκους ἢ παρὰ τὰς ἰδίας ταχυτήτας ἢ παρὰ τὰς ἐποχὰς,
bulks or because-of the proper speeds or because-of the stations
ἐν αἷς ἡ ἐκάστου ῥύμη συντελεῖται, εὐκυμαντοτέρας ἢ
in which the of-each rush is-accomplished more-easily-waving or
τοῦναντίον δυσπαλεῖς ὑπαρχούσας. αἱ δὲ τρεῖς αὗται
the-contrary hard-to-shake being the and three these
διαφοραὶ τρανῶς ὁρῶνται περὶ τοὺς πλάνητας μεγέθει τε
differences clearly are-seen about the planets in-magnitude both

καὶ τάχει καὶ τόπῳ διεστῶτας ἀλλήλων καὶ διὰ τοῦ
and in-speed and in-region standing-apart from-one-another and through the
 αἰθερίου ἀναχύματος διηλεκῶς καὶ ἀστάτως ροιζομένους.
ethereal expanse continuously and unstably rushing
 ἔνθεν γὰρ καὶ τοῦ ἀστήρ ὀνόματος τέτευχεν ἕκαστος οἶον
whence for also the star name has-obtained each as-it-were
 στάσεως ἐστερημένος καὶ ἀεὶ θεῶν, παρ' ὃ καὶ θεὸς
of-standing deprived and ever running because-of which also god
 καὶ αἰθήρ ὠνοματοποποιήται. ἀλλ' ἀπὸ μὲν τοῦ κρονικοῦ
and aether has-been-named but from indeed the Kronian
 κινήματος ἀνωτάτου ὄντος ἀφ' ἡμῶν ὁ βαρύτατος ἐν
motion highest being from us the heaviest in
 τῷ διὰ πασῶν φθόγγος ὑπάτη ἐκλήθη, ὕπατον γὰρ τὸ
the through all note hypate was-called hypaton for the
 ἀνώτατον. ἀπὸ δὲ τοῦ σεληνιακοῦ κατωτάτου πάντων
highest from and the lunar lowest of-all
 καὶ περιγειότερου κειμένου νεάτη· καὶ γὰρ νέατον τὸ
and nearer-earth lying nete and for neaton the
 κατώτατον. ἀπὸ δὲ τῶν παρ' ἐκάτερον τοῦ μὲν ὑπὸ τὸν
lowest from and the(-ones) beside each the indeed under the
 Κρόνον, ὅς ἐστι Διὸς, παρυπάτη· τοῦ δ' ὑπὲρ Σελήνην,
Kronos which is of-Zeus parhypate the and above Moon
 ὅς ἐστιν Ἀφροδίτης, παρανεάτη. ἀπὸ δὲ τοῦ μεσαιτάτου,
which is of-Aphrodite paranete from and the midmost
 ὅς ἐστιν ἡλιακοῦ τετάρτου ἐκατέρωθεν κειμένου, μέση διὰ
which is solar fourth on-either-side lying mese through
 τεσσάρων πρὸς ἀμφοτέρα ἄκρα ἔν γε τῇ ἑπταχόρδῳ
four toward both extremes in at-least the seven-stringed
 κατὰ τὸ παλαιὸν διεστῶσα καθάπερ καὶ ὁ ἥλιος ἐν
according-to the old standing-apart just-as also the Sun in
 τοῖς ἑπτὰ πλάνησι· ἐκατέρωθεν ἐστὶ τέταρτος, μεσαιτάτος
the seven planets on-either-side is fourth midmost

ὦν. ἀπὸ δὲ τῶν παρ' ἐκάτερα τοῦ Ἥλιου Ἄρεος μὲν
being from and the(-ones) beside each-side the Sun of-Ares indeed
 μεταξὺ Διὸς καὶ Ἥλιου τὴν σφαῖραν εἰληχότος ὑπερμέση
between Zeus and Sun the sphere having-obtained hypermese
 ἡ καὶ λιχανός. Ἑρμοῦ δὲ τὸ μεταίχμιον Ἀφροδίτης καὶ
which also lichanos of-Hermes and the interspace of-Aphrodite and
 Ἥλιου κατέχοντος παραμέση. περὶ ὧν ἀκριβέστερον καὶ
of-Sun occupying paramese about which more-exactly and
 μετὰ γραμμικῶν καὶ ἀριθμητικῶν ἀποδείξεων πληρέστατά
with linear and arithmetical demonstrations most-fully
 σοι βεβαιώσομεν, ἐν οἷς προῦπεσχόμεθά σοι ὑπομνήμασι,
for-you we-shall-confirm in which we-promised-before to-you memoranda
 σεμνοτάτῃ γυναικῶν καὶ φιλοκαλωτάτῃ, καὶ δι' αἷς
most-revered of-women and most-beauty-loving and through what
 αἰτίας ταύτης ἡμεῖς οὐκ ἐπακούομεν τῆς κοσμικῆς
causes of-this we not hear the cosmic
 συμφωνίας κατακορές τι καὶ παναρμόνιον ὡς ὁ
concord satiating something and all-harmonious as the
 λόγος ὑπογράφει φθεγγομένης. τὸ νῦν δὲ ἐπιτροχαστέον
account sketches (it-)sounding the now and one-must-run-on
 διὰ τὴν τοῦ καιροῦ ὀξύτητα περὶ τῶν ἐξῆς.
through the of-the occasion shortness about the following

“Ὅτι κατ' ἀριθμὸν οἰκονομεῖται τὰ ἐν τοῖς φθόγγοις

4 • SOUND IS ORDERED BY NUMBER

Noise is a striking of air; a note is a breadthless tension of tuneful voice; an interval a road from low to high. A great blow makes a great sound, a smooth one a smooth sound, a swift one a high sound. Strung and wind instruments behave oppositely — tighter strings sound higher, wider and longer pipes lower — and since all of it is more and less by quantity, all of it is ordered by number.

Καθόλου γάρ φαμεν ψόφον μὲν εἶναι πλήξιν ἀέρος
in-general for we-say noise indeed to-be (a)-striking of-air
 ἄθρυπτον μέχρι ἀκοῆς· φθόγγον δὲ φωνῆς ἐμμελοῦς
unbroken as-far-as bearing (a)-note and of-voice melodic
 ἀπλατῇ τάσιν· τάσιν δὲ μονήν τινα καὶ ταυτότητα κατὰ
breadthless tension tension and (a)-staying certain and sameness in
 μέγεθος φθόγγου ἀδιαστάτου. διάστημα δὲ ὁδὸν ποιᾶν ἀπὸ
magnitude of-a-note without-interval (an)-interval and (a)-road of-a-kind from
 βαρύτητος εἰς ὀξύτητα ἢ ἀνάπαλιν· σύστημα δὲ πλεόνων
heaviness into sharpness or back-again (a)-system and of-more
 ἐνὸς διαστημάτων σύνθεσιν. πολλοῦ μὲν οὖν πλήγματος
than-one intervals (a)-composition of-a-great indeed then blow
 ἢ πνεύματος εἰς τὸν πέριξ ἀέρα ἐμπεσόντος καὶ κατὰ
or breath into the surrounding air falling and in
 πολλὰ μέρη πλήξαντος αὐτὸν μεγάλην ἀποτελεῖσθαι φωνήν,
many parts striking it (a)-great to-be-produced sound
 ὀλίγου δὲ μικράν, καὶ ὁμαλοῦ μὲν λείαν, ἀνωμάλου
of-a-small(-one) and (a)-small and of-an-even(-one) indeed (a)-smooth of-an-uneven
 δὲ τραχεῖαν, καὶ βραδέως μὲν ἐνεχθέντος βαρεῖαν, ταχέως
and (a)-rough and slowly indeed having-been-borne (a)-heavy swiftly
 δὲ ὀξεῖαν. ἐναντιοπαθεῖν δὲ ἀναγκαίως τὰ ἐμπνευστὰ
and (a)-sharp to-suffer-oppositely and necessarily the blown
 ὄργανα οἷον αὐλοὺς σάλπιγγας σύριγγας ὑδραῦλους καὶ τὰ
instruments such-as auloi trumpets pan-pipes water-organs and the
 ὅμοια τοῖς ἐντατοῖς κιθάρα λύρα σπάδικοι τοῖς παραπλησίοις.
like to-the strung(-ones) kithara lyre spadix the similar
 μέσα δ' αὐτῶν καὶ οἷον κοινὰ καὶ ὁμοιοπαθῇ τὰ τε
middle and of-them and as-it-were common and like-affected the both
 μονόχορδα φαίνεσθαι, ἃ δὴ καὶ φανδούρους καλοῦσιν
monochords to-appear which indeed also phandouroi call
 οἱ πολλοί, κανόνας δ' οἱ Πυθαγορικοί, καὶ τὰ τρίγωνα
the many kanones and the Pythagoreans and the trigona

τῶν ἐντατῶν καὶ τοὺς πλαγιαύλους μετὰ τῶν φωτίγγων,
of-the strung and the cross-flutes with the photinges
 ὡς προΐων ὁ λόγος δηλώσει. τῶν μὲν γε ἐντατῶν αἱ
as advancing the account will-show of-the indeed at-least strung the
 τάσεις αἱ μείζονες καὶ εὐτονώτεραι μείζοντας καὶ ὀξυτέρους
tensions the greater and better-toned greater and sharper
 φθόγγους ἀπεργάζονται, αἱ δ' ὀλιγώτεραι νωχελεστέρους
notes produce the and slighter more-sluggish
 τε καὶ βαρυτέρους. μεταστήσαντος γὰρ τὰς χορδὰς τοῦ
both and heavier having-displaced for the strings the
 πλήκτρου, ἀπὸ τῆς οἰκειάς χώρας ἀφεθείσαι αἱ μὲν
plectrum from the proper place having-been-released the indeed
 τάχιστα τε σὺν πολλῷ τῷ κραδασμῷ καὶ πολλαχοῦ
most-swiftly both with much the vibration and in-many-places
 τὸν περικεῖμενον ἀέρα τύπτουσαι ἀποκαθίστανται ὥσπερ
the surrounding air striking are-restored as-if
 ἐπειγόμεναι ὑπ' αὐτῆς τῆς σφοδρᾶς τάσεως, αἱ δὲ ἡρέμα
being-urged by itself the violent tension the and gently
 καὶ ἀκραδάντως κατ' εἰκόνα τῆς τεκτονικῆς στάθμης.
and unshakingly by (the)-likeness of-the carpenter's plumb-line
 ἀνάπαλιν δὲ τῶν ἐμπνευστῶν αἱ μείζονες κοιλιώσεις καὶ
back-again and of-the blown the greater hollowings and
 τὰ μείζονα μήκη νωθρὸν καὶ ἔκλυτον. εἰ γὰρ πολλῇ
the greater lengths (a)-sluggish and slack(-sound) if for by-much
 λειποτονήσαν παραπομπῇ τὸ πνεῦμα ἐξήισιν εἰς τὸν
having-lost-tension by-conveyance the breath it-sends-out into the
 περίξ ἀέρα καὶ δυσεμφάτως αὐτὸν πλήσσει καὶ κινεῖ, καὶ
surrounding air and feebly it strikes and moves and
 βαρὺς οὕτως ὁ φθόγγος γίνεται. ἐπινοητέον δὲ ἐνταῦθα
heavy thus the note becomes must-be-conceived and here
 τὸ μᾶλλον καὶ τὸ ἥττον κατὰ ποσότητα συμβαίνειν, ἣν
the more and the less by quantity to-befall which

ἐπιτείνοντες αὐτοὶ καὶ ἀνιέντες ἢ μῆκος τοῖς κοίλοις ἢ
 tightening ourselves and slackening or length to-the hollows or
 βραχύτητα ἐνεργαζόμενοι ἀποτελοῦμεν. διὰ δὲ τοῦτο
 shortness working-in we-produce through and this
 εὐδῆλον, ὅτι ἀριθμῶ πάντα οἰκονομεῖται ταῦτα· ποσότης
 (it-is)-evident that by-number all are-ordered these quantity
 γὰρ οὐδενὸς ἄλλου ἀλλὰ ἀριθμοῦ ἰδία νοεῖται.
 for of-nothing other but of-number proper is-conceived

Ὅτι τῇ ἐπταχόρδῳ λύρα τὴν ὀγδόην ὁ Πυθαγόρας
 προσθεῖς τὴν διὰ πασῶν συνεστήσατο ἀρμονίαν

5 · PYTHAGORAS ADDS THE EIGHTH STRING

So that the middle note should not merely give a fourth to each extreme, and so that the extremes should sound the octave with one another, Pythagoras inserted an eighth note between mese and paramese, a whole tone from the one and a semitone from the other. Whichever tetrachord that tone is joined to, it yields a fifth — just as the ratio of the fifth is compounded of the epitritie and the epogdoic.

Πυθαγόρας δὲ πᾶμπρωτος— ἵνα μὴ κατὰ συναφὴν
 Pythagoras and first-of-all so-that not by conjunction
 ὁ μέσος φθόγγος πρὸς ἀμφοτέρω τὰ ἄκρα ὁ αὐτὸς
 the middle note toward both the extremes the same
 συγκρινόμενος διαφορουμένην παρέχει μόνην τὴν διὰ
 being-compared (as-)differing should-afford only the through
 τεσσάρων συμφωνίαν, πρὸς τε τὴν ὑπάτην καὶ πρὸς
 four concord toward both the hypate and toward
 τὴν νήτην, ποικιλωτέραν δὲ θεωρίαν ἐνορᾶν ἔχωμεν
 the nete (a)-more-varied and contemplation to-see-in we-might-have
 καὶ τῶν ἄκρων αὐτῶν ἀλλήλοις τὴν κατακορεσάτην
 and the extremes themselves with-one-another the most-satiating

συναποτελούντων συμφωνίαν τουτέστι τὴν διὰ πασῶν τὸν
jointly-producing concord that-is the through all the
 διπλάσιον ἔχουσιν λόγον, ὅπερ ἐκ τῶν δύο τετραχόρδων
double having ratio which-very from the two tetrachords
 συμβῆναι οὐκ ἔδύνατο,— παρενέθηκεν ὄγδοόν τινα φθόγγον
to-result not was-able he-inserted (an)-eighth certain note
 μεταξὺ μέσης καὶ παραμέσης ἐνάψας καὶ ἀποστήσας
between mese and paramese having-fastened and having-set-apart
 ἀπὸ μὲν τῆς μέσης ὅλον τόνον, ἀπὸ δὲ τῆς παραμέσης
from indeed the mese (a)-whole tone from and the paramese
 ἡμιτόνιον· ὥστε τὴν μὲν προτέραν ἐν τῇ ἑπταχόρδῳ
(a)-semitone so-that the indeed former in the seven-stringed
 παραμέσῃ οὖσαν τρίτην ἔτι ἀπὸ νήτης καλεῖσθαι τε καὶ
paramese being trite still from nete to-be-called both and
 οὐδὲν ἡττον κείσθαι, τὴν δὲ παρεντεθείσαν τετάρτην μὲν
none the-less to-lie the and inserted(-one) fourth indeed
 ἀπὸ τῆς νήτης ὑπάρχειν, συμφωνεῖν δὲ πρὸς αὐτὴν τὴν
from the nete to-be to-concord and toward it the
 διὰ τεσσάρων συμφωνίαν, ἥνπερ καὶ ἡ ἐξ ἀρχῆς
through four concord which-very also the from (the)-beginning
 μέσῃ πρὸς τὴν ὑπάτην εἶχεν. ὁ δὲ μεταξὺ ἀμφοτέρων τόνος
mese toward the hypate had the and between both tone
 μέσης τε καὶ παρεντεθείσης, ὀνομασθείσης δὲ ἀντὶ τῆς
of-mese both and of-the-inserted(-one) named and instead-of the
 προτέρας παραμέσης, ὁποτέρῳ ἂν τετραχόρδῳ προστεθῇ,
former paramese to-whichever ever tetrachord it-be-added
 εἴτε τῷ πρὸς τῇ ὑπάτῃ νητοειδέστερος, εἴτε τῷ
whether to-that toward the hypate more-nete-like or to-that
 πρὸς τῇ νήτῃ βομβυκέστερος, τὴν διὰ πέντε συμφωνίαν
toward the nete more-droning the through five concord
 ἀποδείξει, σύστημα ἑκατέρων ὑπάρχουσιν αὐτοῦ τε τοῦ
will-show (a)-system of-both being itself both the

τετραχόρδου καὶ τοῦ προσγενομένου τόνου. ὥσπερ καὶ ὁ
 tetrachord and the added tone just-as also the
 τῆς διὰ πέντε λόγος ὁ ἡμιόλιος σύστημα εὐρίσκεται
 of-the through five ratio the hemiolic (a)-system is-found
 ἐπιτρίτου τε ἅμα καὶ ἐπογδόου· ὁ ἄρα τόνος ἐπόγδοον.
 of-epitritic both at-once and of-epogdoic the therefore tone (is)-epogdoic

Πῶς οἱ ἀριθμητικοὶ τῶν φθόγγων λόγοι ἠυρέθησαν

6 · THE DISCOVERY IN THE SMITHY

Wanting an instrument for the ear as sure as the compass is for the eye, Pythagoras passed a smithy and heard hammers striking concords. Finding the difference lay in their weights, he hung four equal strings from a peg and loaded them with weights of twelve, nine, eight, and six; twelve to six gave the octave, twelve to eight the fifth, twelve to nine the fourth, and nine to eight the tone. He then transferred the ratios to the pegs of instruments and named the notes hypate, mese, paramese, and nete.

Τὴν δὲ κατ' ἀριθμὸν ποσότητα ταύτην ἥ τε διὰ
 the and by number quantity this the both through
 τεσσάρων χορδῶν ἀπόστασις ἥ τε διὰ πέντε καὶ ἡ
 four strings distance the both through five and the
 κατ' ἀμφοτέρων σύνοδον διὰ πασῶν λεγομένη καὶ ὁ
 by of-both union through all called and the
 προσκείμενος μεταξὺ τῶν δύο τετραχόρδων τόνος τρόπῳ
 added between the two tetrachords tone by-a-way
 τινὶ τοιούτῳ ὑπὸ τοῦ Πυθαγόρου καταληφθέντι ἔχειν
 certain such by — Pythagoras apprehended to-hold
 ἐβεβαιώτο. ἐν φροντίδι ποτὲ καὶ διαλογισμῷ συντεταμένῳ
 was-confirmed in thought once and reasoning intense
 ὑπάρχων, εἰ ἄρα δύναιτο τῇ ἀκοῇ βοήθειάν τινα
 being whether then he-might-be-able for-the hearing (a)-help certain

ὀργανικὴν ἐπινοῆσαι παγίαν καὶ ἀπαραλόγιστον, οἷαν ἡ
instrumental to-devise firm and undeceivable such-as the
 μὲν ὄψις διὰ τοῦ διαβήτου καὶ διὰ τοῦ κανόνος ἢ
indeed sight through the compass and through the rule or
 καὶ διὰ τῆς διόπτρας ἔχει, ἢ δ' ἀφή διὰ τοῦ ζυγοῦ
also through the dioptra has the and touch through the balance
 ἢ διὰ τῆς τῶν μέτρων ἐπινοίας, παρά τι χαλκοτυπεῖον
or through the of-the measures device beside some smithy
 περιπατῶν ἔκ τινος δαμονίου συντυχίας ἐπήκουσε
walking from some divine chance he-overheard
 ραιστήρων σίδηρον ἐπ' ἄκμονι ραίωντων καὶ τοὺς ἤχους
hammers iron upon anvil beating and the sounds
 παραμιξὶ πρὸς ἀλλήλους συμφωνοτάτους ἀποδιδόντων
mixed-together toward one-another most-concordant rendering
 πλὴν μιᾶς συζυγίας· ἐπεγίνωσκε δ' ἐν αὐτοῖς τὴν τε
except of-one pairing he-recognized and in them the and
 διὰ πασῶν καὶ τὴν διὰ πέντε καὶ τὴν διὰ τεσσάρων
through all and the through five and the through four
 συνωδίαν. τὴν δὲ μεταξύτητα τῆς τε διὰ τεσσάρων καὶ
consonance the and intermediate of-the both through four and
 τῆς διὰ πέντε ἀσύμφωνον μὲν ἑώρα αὐτὴν καθ' ἑαυτὴν,
of-the through five discordant indeed he-saw it by itself
 συμπληρωτικὴν δὲ ἄλλως τῆς ἐν αὐτοῖς μεῖζονος. ἄσμενος
completing and otherwise of-the in them greater glad
 δὴ ὥς κατὰ θεὸν ἀννομένης αὐτῷ τῆς προθέσεως
indeed as by god being-accomplished for-him the purpose
 εἰσέδραμεν εἰς τὸ χαλκεῖον καὶ ποικίλαις πείραις παρὰ
he-ran-in into the smithy and by-varied trials because-of
 τὸν ἐν τοῖς ραιστήρσιν ὄγκον εὐρῶν τὴν διαφορὰν τοῦ
the in the hammers bulk having-found the difference of-the
 ἤχου, ἀλλ' οὐ παρὰ τὴν τῶν ραίωντων βίαν οὐδὲ παρὰ
sound but not because-of the of-the beating(-men) force nor because-of

τὰ σχήματα τῶν σφυρῶν οὐδὲ παρὰ τὴν τοῦ ἐλαυνομένου
the shapes of-the hammers nor because-of the of-the beaten
 σιδήρου μετάθεσιν, σηκώματα ἀκριβῶς ἐκλαβὼν καὶ ῥοπὰς
iron shifting weights exactly having-taken and inclinations
 ἰσαϊτάτας τῶν ῥαιστήρων πρὸς ἑαυτὸν ἀπηλλάγη. καὶ ἀπὸ
most-equal of-the hammers toward himself be-departed and from
 τινος ἑνὸς πασσάλου διαγωνίως ἐμπεπηγότες τοῖς τοίχοις,
some one peg diagonally fixed in-the walls
 ἵνα μὴ κακὸν τούτου διαφορὰ τις ὑποφαίνεται ἢ ὅλως
so-that not even-from this (a)-difference any should-appear or at-all
 ὑπονοῖται πασσάλων ἰδιαζόντων παραλλαγῇ, ἀπαρτήσας
be-suspected of-pegs differing variation having-hung
 τέσσαρας χορδὰς ὁμοῦλους καὶ ἰσοκάλους, ἰσοπαχεῖς τε
four strings of-like-material and of-equal-length of-equal-thickness both
 καὶ ἰσοστρόφους ἐκάστην ἐφ' ἐκάστης ἐξήρτησεν, ὀλκὴν
and of-equal-twist each upon each be-hung (a)-weight
 προσδήσας ἐκ τοῦ κάτωθεν μέρους. τὰ δὲ μήκη τῶν
having-tied from the lower part the and lengths of-the
 χορδῶν μηχανησάμενος ἐκ παντὸς ἰσαίτατα, εἶτα κρούων
strings having-contrived from every(-way) most-equal then striking
 ἀνὰ δύο ἅμα χορδὰς ἐναλλάξ συμφωνίας εὔρισκε τὰς
by two at-once strings alternately concords he-found the
 προλεχθείσας, ἄλλην ἐν ἄλλῃ συζυγίᾳ. τὴν μὲν γὰρ ὑπὸ
aforesaid another in another pairing the(-one) indeed for by
 τοῦ μεγίστου ἐξαρτήματος τεινομένην πρὸς τὴν ὑπὸ τοῦ
the greatest suspended-weight stretched toward the(-one) by the
 μικροτάτου διὰ πασῶν φθεγγομένην κατελάμβανεν. ἦν
smallest through all sounding be-apprehended was
 δὲ ἡ μὲν δώδεκά τινων ὀλκῶν, ἡ δὲ ἑξ. ἐν διπλασίῳ
and the one twelve certain weights the other six in double
 δὴ λόγῳ ἀπέφαινε τὴν διὰ πασῶν, ὅπερ καὶ αὐτὰ
indeed ratio be-declared the through all which-very also themselves

τὰ βάρη ὑπέφαινε. τὴν δ' αὖ μέγιστην πρὸς τὴν
the weights suggested the and again greatest toward the(-one)
 παρὰ τὴν μικροτάτην (οὕσαν ὀκτὼ ὀλκῶν) διὰ πέντε
beside the smallest being eight weights through five
 συμφωνοῦσαν, ἔνθεν ταύτην ἀπέφαιναν ἐν ἡμιολίῳ λόγῳ,
concording whence this he-declared in hemiolic ratio
 ἐν ᾧπερ καὶ αἱ ὀλκαὶ ὑπῆρχον πρὸς ἀλλήλας· πρὸς
in which-very also the weights stood toward one-another toward
 δὲ τὴν μεθ' ἑαυτὴν μὲν τῷ βάρει, τῶν δὲ λοιπῶν
and the(-one) after itself indeed in-the weight than-the and remaining
 μείζονα, ἐννέα σταθμῶν ὑπάρχουσιν, τὴν διὰ τεσσάρων,
greater nine of-weights being the through four
 ἀναλόγως τοῖς βρίθῃσι. καὶ ταύτην δὲ ἐπιτρίτον ἀντικρυς
analogously to-the weights and this indeed epitritic outright
 κατελαμβάνετο, ἡμιολίαν τὴν αὐτὴν φύσει ὑπάρχουσιν
he-apprehended hemiolic the same by-nature being
 τῆς μικροτάτης, (τὰ γὰρ ἐννέα πρὸς τὰ ἕξ οὕτως ἔχει.)
than-the smallest the for nine toward the six thus holds
 ὅνπερ τρόπον ἢ παρὰ τὴν μικρὰν ἢ ὀκτὼ πρὸς
the-very way the(-one) beside the small the eight toward
 μὲν τὴν τὰ ἕξ ἔχουσιν ἐν ἐπιτρίτῳ ἦν, πρὸς δὲ τὴν
indeed the(-one) the six having in epitritic was toward and the(-one)
 τὰ δώδεκα ἐν ἡμιολίῳ. τὸ ἄρα μεταξὺ τῆς διὰ πέντε
the twelve in hemiolic the therefore between the through five
 καὶ τῆς διὰ τεσσάρων τουτέστιν ᾧ ὑπερέχει ἢ διὰ
and the through four that-is by-which exceeds the through
 πέντε τῆς διὰ τεσσάρων, ἐβεβαιούτο ἐν ἐπογδοῷ λόγῳ
five than-the through four was-confirmed in epogdoic ratio
 ὑπάρχειν, ἐν ᾧπερ τὰ ἐννέα πρὸς τὰ ὀκτώ. ἐκατέρως
to-be in which-very the nine toward the eight in-both-ways
 τε ἢ διὰ πασῶν σύστημα ἠλέγχετο τῆς διὰ πέντε
both the through all (a)-system was-proved of-the through five

καὶ διὰ τεσσάρων ἐν συναφῇ, ὡς ὁ διπλάσιος λόγος
and through four in conjunction as the double ratio
 ἥτοι ἡμιολίου τε καὶ ἐπιτρίτου, οἷον δώδεκα ὀκτὼ ἕξ, ἢ
either of-hemiotic both and of-epitritic such-as twelve eight six or
 ἀναστροφῶς τῆς διὰ τεσσάρων καὶ διὰ πέντε, ὡς τὸ
conversely of-the through four and through five as the
 διπλάσιον ἐπιτρίτου τε καὶ ἡμιολίου, οἷον δώδεκα ἐννέα
double of-epitritic both and of-hemiotic such-as twelve nine
 ἕξ ἐν τάξει τοιαύτη. τυλώσας δὲ καὶ τὴν χεῖρα καὶ τὴν
six in order such having-hardened and both the hand and the
 ἀκοὴν πρὸς τὰ ξαρτήματα καὶ βεβαιώσας πρὸς αὐτὰ τὸν
bearing toward the suspended-weights and having-confirmed toward them the
 τῶν σχέσεων λόγον, μετέθηκεν εὐμηχάνως τὴν μὲν τῶν
of-the relations account he-transferred ingeniously the indeed of-the
 χορδῶν κοινὴν ἀπόδεσιν τὴν ἐκ τοῦ διαγωνίου πασσάλου
strings common fastening that from the diagonal peg
 εἰς τὸν τοῦ ὀργάνου βατήρα, ὃν χορδότονον ὠνόμαζε,
to the of-the instrument bridge which string-stretcher he-named
 τὴν δὲ ποσὴν ἐπίτασιν ἀναλόγως τοῖς βάρεσιν εἰς τὴν
the and quantitative tightening analogously to-the weights to the
 τῶν κολλάβων ἄνωθεν σύμμετρον περιστροφὴν. ἐπιβάθρα
of-the pegs from-above commensurate turning (a)-step
 τε ταύτῃ χρώμενος καὶ οἷον ἀνεξαπατήτῳ γνῶμονι
both this using and as-it-were undeceivable gnomon
 εἰς ποικίλα ὄργανα τὴν πείραν λοιπὸν ἐξέτεινε, λεκίδων
to varied instruments the trial thereafter he-extended of-plates
 τε κρουσιν καὶ αὐλοὺς καὶ σύριγγας καὶ μονόχορδα καὶ
both striking and auloi and pan-pipes and monochords and
 τρίγωνα καὶ τὰ παραπλήσια, καὶ σύμφωνον εὗρισκεν ἐν
trigona and the like and concordant he-found in
 ἅπασιν καὶ ἀπαράλλακτον τὴν δι' ἀριθμοῦ κατάληψιν.
all and unvarying the through number apprehension

ὀνομάσας δὲ ὑπάτην μὲν τὸν τοῦ ἑξ ἀριθμοῦ κοινωνοῦντα
having-named and hypate indeed the of-the six number sharing
 φθόγγον, μέσην δὲ τὸν τοῦ ὀκτώ, ἐπίτριτον αὐτοῦ
note mese and the(-one) of-the eight epitritic of-it
 τυγχάνοντα, παραμέσιν δὲ τὸν τοῦ ἐννέα, τόνῳ τοῦ
being paramese and the(-one) of-the nine by-a-tone than-the
 μέσου ὀξύτερον καὶ δὴ καὶ ἐπόγδοον, νήτην δὲ τὸν
middle sharper and indeed and epogdoic nete and the(-one)
 τοῦ δώδεκα, καὶ τὰς μεταξύτητας κατὰ τὸ διατονικὸν
of-the twelve and the intermediates by the diatonic
 γένος συναναπληρώσας φθόγγοις ἀναλόγοις οὕτως τὴν
genus having-filled-up with-notes analogous thus the
 ὀκτάχορδον ἀριθμοῖς συμφώνοις ὑπέταξε, διπλασίῳ
eight-stringed to-numbers concordant he-subordinated double
 ἡμιολίῳ ἐπίτρίτῳ καὶ τῇ τούτων διαφορᾷ ἐπογδόῳ.
hemiotic epitritic and the of-these difference epogdoic

Περὶ τῆς κατὰ τὸ διάτονον
 γένος διαιρέσεως τοῦ διὰ πασῶν

7 • THE DIATONIC DIVISION OF THE OCTAVE

The diatonic genus proceeds naturally by semitone, tone, tone — which is the fourth; add another tone, the one inserted in the middle, and the fifth results; a further semitone, tone, tone makes a second fourth. In the old seven-stringed lyre every fourth note concorded at the fourth, the semitone shifting through the three places of the tetrachord; in the Pythagorean eight-stringed scale every fifth note concords at the fifth, the semitone passing through four places.

Τὴν δὲ πρόβασιν ἀνάγκη τινὲ φυσικῇ ἀπὸ τοῦ βαρυτάτου
the and progression by-a-necessity certain natural from the heaviest
 ἐπὶ τὸ ὀξύτατον κατὰ τοῦτο τὸ διατονικὸν γένος οὕτως
to the sharpest by this the diatonic genus thus

εὔρισκε. (τὸ γὰρ χρωματικὸν καὶ ἐναρμόνιον γένος αὐθὶς
be-found the for chromatic and enharmonic genus again
 ποτε ἐκ τούτου διετράνωσεν ὡς ἔσται ποτὲ δείξαί σοι.)
sometime from this be-made-clear as it-will-be sometime to-show to-you
 ἀλλὰ τό γε διατονικὸν τοῦτο γένος τοὺς βαθμοὺς καὶ τὰς
but the at-least diatonic this genus the steps and the
 προόδους τοιαύτας τινὰς φυσικῶς ἔχειν φαίνεται ἡμιτόνιον,
advances such certain naturally to-have appears (a)-semitone
 εἶτα τόνος, εἶτα τόνος. καὶ τουτέστι διὰ τεσσάρων
then (a)-tone then (a)-tone and that-is through four
 σύστημα δύο τόνων καὶ τοῦ λεγομένου ἡμιτονίου. εἶτα
(a)-system of-two tones and of-the so-called semitone then
 προσληφθέντος ἄλλου τόνου τουτέστι τοῦ μεσεμβληθέντος
having-been-added another tone that-is the inserted-in-the-middle
 ἢ διὰ πέντε γίνεται, σύστημα τριῶν τόνων καὶ ἡμιτονίου
the through five becomes (a)-system of-three tones and of-a-semitone
 ὑπάρχουσα. εἰθ' ἐξῆς τούτῳ ἡμιτόνιον καὶ τόνος καὶ τόνος,
being then next to-this (a)-semitone and (a)-tone and (a)-tone
 ἄλλο διὰ τεσσάρων τουτέστιν ἄλλο ἐπίτριτον. ὥστε ἐν μὲν
another through four that-is another epitritic so-that in indeed
 τῇ ἀρχαιοτέρᾳ τῇ ἐπταχόρδῳ πάντας ἐκ τοῦ βαρυτάτου
the more-ancient the seven-stringed all from the heaviest
 τοὺς ἀπ' ἀλλήλων τετάρτους τὴν διὰ τεσσάρων
the(-notes) from one-another fourth the through four
 ἀλλήλοις διόλου συμφωνεῖν, τοῦ ἡμιτονίου κατὰ μετάβασιν
with-one-another throughout to-concord the semitone by passage
 τὴν τε πρώτην καὶ τὴν μέσην καὶ τὴν τρίτην χώραν
the both first and the middle and the third place
 μεταλαμβάνοντος κατὰ τὸ τετράχορδον. ἐν δὲ Πυθαγορικῇ
taking-in-turn in the tetrachord in and Pythagorean
 τῇ ὀκταχόρδῳ, ἥτοι κατὰ συναφήν συστήματι ὑπαρχούσῃ
the eight-stringed either by conjunction (a)-system being

τετραχόρδου τε καὶ πενταχόρδου, ἢ κατὰ διάζευξιν δυοῖν
of-tetrachord both and of-pentachord or by disjunction of-two
 τετραχόρδων τόνῳ χωριζομένων ἀπ' ἀλλήλων, ἀπὸ τῆς
tetrachords by-a-tone separated from one-another from the
 βαρυτάτης ἢ προχώρησις ὑπάρξει, ὥστε τοὺς ἀπ' ἀλλήλων
heaviest the advance will-be so-that the from one-another
 πέμπτους πάντας φθόγγους τὴν διὰ πέντε συμφωνεῖν
fifth all notes the through five to-concord
 ἀλλήλοις, τοῦ ἡμιτονίου προβάδην εἰς τὰς τέσσαρας
with-one-another the semitone step-by-step into the four
 χώρας μεταβαίνοντος, πρώτην δευτέραν τρίτην τετάρτην.
places passing first second third fourth

Ἐξήγησις τῶν ἐν Τιμαίῳ ἀρμονικῶς εἰρημένων

8 • THE PASSAGE IN THE TIMAEUS

Nicomachus expounds Plato's two means. Between twelve and six, eight is the harmonic mean, exceeding and exceeded by the same part of the extremes; nine is the arithmetic mean, exceeding and exceeded by the same number. He gives each its property — for the harmonic, that the sum of the extremes times the mean is double their product; for the arithmetic, that the square on the mean exceeds that product by the square of the difference — and notes that twelve is to eight as nine is to six, the third, geometric proportion.

Χρήσιμον δ' ἐστὶν ἐνταῦθα γινόμενους τὴν Πλατωνικὴν
useful and it-is here (as-we-are)-arriving the Platonic
 εὐκαίρως διαπτύξαι λέξιν, ἣν ἐν τῇ ψυχογονίᾳ προηnéγκατο
opportunistly to-unfold passage which in the soul-generation he-brought-forward
 εἰπὼν “ὥστε ἐν ἐκάστῳ διαστήματι δύο εἶναι μεσότηας,
saying so-that in each interval two to-be means
 τὴν μὲν ταὐτῷ μέρει τῶν ἄκρων αὐτῶν ὑπερέχουσιν
the indeed by-the-same part of-the extremes themselves exceeding

καὶ ὑπερεχομένην, τὴν δὲ ἴσω μὲν κατ' ἀριθμὸν
 and being-exceeded the and by-an-equal indeed by number
 ὑπερέχουσιν, ἴσω δὲ ὑπερεχομένην. ἡμιολίων δὲ
 exceeding by-an-equal and being-exceeded of-hemiotic and
 καὶ ἐπιτρίτων διαστάσεων διάστασιν τῷ τοῦ ἐπογδοῦ
 also of-epitritic intervals interval by-the of-the epogdoic
 λείμματι συνεπληροῦτο.” Διάστημα μὲν γὰρ διπλάσιον
 remainder was-filled-up (an)-interval indeed for double
 ὁ δώδεκα πρὸς τὰ ἕξ, μεσότητες δὲ δύο, ὅ τε ἐννέα
 the twelve toward the six means and two the both nine
 ἀριθμὸς καὶ ὁ ὀκτώ. ἀλλ' ὁ μὲν ὀκτὼ κατὰ τὴν
 number and the eight but the indeed eight by the
 ἀρμονικὴν ἀναλογίαν μεσιτεύει τὸν τε ἕξ καὶ τὸν δώδεκα,
 harmonic proportion mediates the both six and the twelve
 ὑπερέχων μὲν τοῦ ἕξ τρίτῳ αὐτοῦ τοῦ ἕξ, ὑπερεχόμενος
 exceeding indeed the six by-a-third of-it the six being-exceeded
 δὲ ὑπὸ τοῦ ἱβ' τρίτῳ αὐτοῦ τοῦ ἱβ'. διόπερ ταυτῷ
 and by the 12 by-a-third of-it the 12 wherefore by-the-same
 μέρει ἐν αὐτοῖς τοῖς ἄκροις θεωρουμένῳ ὑπερέχειν τε καὶ
 part in themselves the extremes considered to-exceed both and
 ὑπερέχεσθαι τὴν ὀκτὼ μεσότητα εἶπεν οἷα δὴ ἀρμονικῆς
 to-be-exceeded the eight mean he-said as indeed of-harmonic
 ὑπάρχουσιν ἀναλογίας. ὥς γὰρ ὁ μέγιστος ὅρος πρὸς τὸν
 being proportion as for the greatest term toward the
 ἐλάχιστον διπλάσιος, οὕτω καὶ ἡ τοῦ μεγίστου παρὰ τὸν
 least (is)-double so also the of-the greatest beside the
 μέσον διαφορά τετράς οὖσα πρὸς τὴν τοῦ μέσου παρὰ
 mean difference (a)-four being toward the of-the mean beside
 τὸν ἐλάχιστον δυάδα οὖσαν· καὶ αὗται γὰρ ἐν διπλασίῳ
 the least (a)-two being also these for in double
 λόγῳ τετράς πρὸς δυάδα. ἴδιον δὲ τῆς τοιαύτης μεσότητος
 ratio (a)-four toward (a)-two proper and of-the such mean

τὸ συντεθέντων τῶν ἄκρων ἀλλήλοις καὶ ὑπὸ τοῦ μέσου
the (when-)added the extremes to-one-another and by the mean
 πολυπλασιασθέντων διπλάσιον ἀποτελεῖσθαι τὸ γινόμενον
multiplied double to-be-produced the product
 τοῦ ὑπὸ τῶν ἄκρων γινομένου προμήκους. ὀκτάκις γὰρ
than-the by the extremes arising oblong eight-times for
 ἢ τῶν ἄκρων σύνθεσις τουτέστι τὰ ὀκτωκαῖδεκα ποιεῖ τὸν
the of-the extremes sum that-is the eighteen makes the
 ρμδ, ὅς ἐστι διπλάσιος τοῦ ὑπὸ τῶν ἄκρων προμήκους,
144 which is double of-the by the extremes oblong
 τοῦτ' ἔστι τοῦ οβ. ἢ δὲ ἑτέρα μεσότης, ἢ ἐννέα,
this is the 72 the and other mean the nine
 κατὰ τὴν παραμέσιν τεταγμένη, ἐν ἀριθμητικῇ μεσότητι
at the paramese ranked in arithmetic mean
 ἐνθεωρεῖται πρὸς τὰ ἄκρα τῷ αὐτῷ ἀριθμῷ (τρία)
is-observed toward the extremes by-the same number three
 ὑπερεχομένη μὲν ὑπὸ τοῦ δώδεκα, ὑπερέχουσα δὲ τὰ
being-exceeded indeed by the twelve exceeding and the
 ἕξ. ἴδιον δὲ καὶ ταύτης τὸ διπλάσιον εἶναι τὴν σύνθεσιν
six proper and also of-this the double to-be the sum
 τῶν ἄκρων αὐτοῦ τοῦ μέσου, καὶ τὸ μείζον ὑπάρχειν τὸ
of-the extremes of-itself the mean and the greater to-be the
 ἀπὸ τοῦ μέσου τετράγωνον (οἶον τὸ πα) τοῦ ὑπὸ τῶν
from the mean square such-as the 81 than-the by the
 ἄκρων προμήκους (τουτέστι τοῦ οβ) ὅλῳ τῷ ὑπὸ
extremes oblong that-is the 72 by-the-whole the by
 τῶν διαφορῶν τετραγώνῳ, τουτέστι τῷ τρις γ αὕτη γὰρ
the differences square that-is the thrice 3 this for
 ἢ διαφορά. δύναται δὲ τις καὶ τὴν τρίτην μεσότητα τὴν
the difference is-able and one also the third mean the
 κυριώτερον ἀναλογίαν λεγομένην ἐν ἀμφοτέροις ἐπιδείξαι
more-properly proportion called in both to-exhibit

τοῖς μέσοις ὄροις, τῷ θ καὶ τῷ η. ἀνὰ γὰρ τὸν αὐτὸν
the middle terms the 9 and the 8 by for the same
 λόγον ὑπάρχει ιβ πρὸς η ὡς θ πρὸς ζ, ἡμιόλιον γὰρ
ratio stands 12 toward 8 as 9 toward 6 hemiolic for
 ἀμφότεροι. καὶ τὸ ὑπὸ τῶν ἄκρων πρόμηκες ἴσον τῷ
both and the by the extremes oblong equal to-the
 ὑπὸ τῶν μέσων, τὸ δωδεκάκις ζ τῷ ἐννάκις η.
by the means the twelve-times 6 to-the nine-times 8

Μαρτυρία τῶν εἰρημένων ἀπὸ τοῦ Φιλολάου

9 · THE WITNESS OF PHILOLAUS

The oldest men called the octave harmonia, the fourth syllaba, and the fifth di' oxeian — the interval through the sharp strings. Philolaus is quoted in his Doric: the magnitude of harmonia is syllaba and di' oxeian, the fifth greater than the fourth by an epogdoic, the octave five epogdoics and two dieses. Nicomachus explains that Philolaus' "third" is the paramese of the seven-stringed lyre, before the disjunctive tone was inserted.

Ὅτι δὲ τοῖς ὑφ' ἡμῶν δηλωθεῖσιν ἀκόλουθα καὶ οἱ
that and to-the(-things) by us shown consistent also the
 παλαιότατοι ἀπεφαίνοντο, ἀρμονίαν μὲν καλοῦντες τὴν
most-ancient declared harmonia indeed calling the
 διὰ πασῶν, συλλαβὰν δὲ τὴν διὰ τεσσάρων (πρώτη γὰρ
through all syllaba and the through four first for
 σύλληψις φθόγγων συμφώνων), δι' ὀξειᾶν δὲ τὴν διὰ
grasping of-notes concordant through sharp(-strings) and the through
 πέντε (συνεχῆς γὰρ τῇ πρωτογενεῖ συμφωνίᾳ τῇ διὰ
five continuous for with-the first-born concord the through
 τεσσάρων ἐστὶν ἡ διὰ πέντε ἐπὶ τὸ ὀξὺ προχωροῦσα),
four is the through five toward the sharp advancing

σύστημα δὲ ἀμφοτέρων συλλαβᾶς τε καὶ δι' ὀξειᾶν
(a)-system and of-both of-syllaba both and through sharp(-strings)
 ἢ διὰ πασῶν (ἐξ αὐτοῦ τούτου ἀρμονία κληθεῖσα, ὅτι
the through all from itself this harmonia called because
 πρωτίστη ἐκ συμφωνιῶν συμφωνία ἡρμόσθη) δῆλον ποιεῖ
first-of-all from concords (a)-concord was-attuned clear makes
 Φιλόλαος ὁ Πυθαγόρου διάδοχος οὕτω πως ἐν τῷ πρώτῳ
Philolaus the of-Pythagoras successor thus somehow in the first
 φυσικῶ λέγων. ἀρκεσθισόμεθα γὰρ ἐνὶ μάρτυρι διὰ
Physics saying we-shall-be-content for with-one witness through
 τὴν ἔπειξιν, εἰ καὶ πολλοὶ περὶ τοῦ αὐτοῦ τὰ ὅμοια
the urgency even if many about the same the like(-things)
 πολλαχῶς λέγουσιν. ἔχει δὲ οὕτως ἡ τοῦ Φιλόλαου λέξις.
in-many-ways say holds and thus the — of-Philolaus passage
 “ἀρμονίας δὲ μέγεθος συλλαβὰ καὶ δι' ὀξειᾶν. τὸ
of-harmonia and (the)-magnitude (is)-syllaba and through sharp(-strings) the
 δὲ δι' ὀξειᾶν μείζον τᾶς συλλαβᾶς ἐπογδόω. ἔστι
and through sharp(-strings) (is)-greater than-the syllaba by-an-epogdoic is
 γὰρ ἀπὸ ὑπάτας εἰς μέσαν συλλαβά, ἀπὸ δὲ μέσας πότι
for from hypata to mesa (a)-syllaba from and mesa to
 νεάταν δι' ὀξειᾶν, ἀπὸ δὲ νεάτας ἐς τρίταν συλλαβά,
neata through sharp(-strings) from and neata to trita (a)-syllaba
 ἀπὸ δὲ τρίτας ἐς ὑπάταν δι' ὀξειᾶν. τὸ δ' ἐν μέσῳ
from and trita to hypata through sharp(-strings) the and in (the)-middle
 τρίτας καὶ μέσας ἐπόγδοον, ἃ δὲ συλλαβὰ ἐπίτритον, τὸ
of-trita and of-mesa (is)-epogdoic the and syllaba (is)-epitritic the
 δὲ δι' ὀξειᾶν ἀμιόλιον, τὸ διὰ πασῶν δὲ διπλόον.
and through sharp(-strings) (is)-hemiotic the through all and (is)-double
 οὕτως ἀρμονία πέντε ἐπογδόων καὶ δυοῖν διέσεις.
thus harmonia (is)-of-five epogdoics and of-two dieses
 δι' ὀξειᾶν τριῖ ἐπόγδοα καὶ διέσις, συλλαβὰ δὲ δύ'
through sharp(-strings) three epogdoics and (a)-dieses syllaba and two

ἐπόγδοα καὶ δίεςις"— μεμνήσθαι δὲ δεῖ, ὅτι τρίτην
epogdoics and (a)-diesis to-remember and one-must that trite
 νῦν καλεῖ τὴν ἐν τῇ ἑπταχόρδῳ παραμέσῃ, πρὸ τῆς
now he-calls the(-note) in the seven-stringed paramese before the
 τοῦ διαζευγνύντος τόνου παρενθέσεως τῆς ἐν ὀκταχόρδῳ.
of-the disjoining tone insertion the in (the)-eight-stringed
 ἀπεῖχε γὰρ αὕτη τῆς παρανεάτης τριημιτόνιον ἀσύνθετον,
stood-off for this from-the paranete (a)-three-semitone incomposite
 ἀφ' οὗ διαστήματος ἡ μὲν παρεντεθεῖσα χορδὴ τόνον
from which interval the indeed inserted string (a)-tone
 ἀπέλαβε, τὸ δὲ λοιπὸν ἡμιτόνιον μεταξὺ τρίτης καὶ
took-off the and remaining semitone between trite and
 παραμέσης ἀπελείφθη ἐν τῇ διαζεύξει. εὐλόγως οὖν ἡ πάλαι
paramese was-left in the disjunction reasonably then the of-old
 τρίτη διὰ τεσσάρων ἀπεῖχε τῆς νήτης, ὅπερ διάστημα
trite through four stood-off from-the nete which-very interval
 νῦν ἀπέλαβεν ἡ παραμέση ἀντ' ἐκείνης. οἱ δὲ τοῦτο
now took-off the paramese instead-of that the(-men) and this
 μὴ συνιέντες αἰτιῶνται ὥς οὐκ ὄντος δυνατοῦ ἐν ἐπιτρίτῳ
not understanding complain as not being possible in epitritic
 λόγῳ εἶναι τρίτην ἀπὸ νήτης. ἄλλοι δὲ οὐκ ἀπιθάνως
ratio to-be trite from nete others and not implausibly
 τὸν παρεντεθέντα φθόγγον οὐχὶ μεταξὺ μέσης καὶ τρίτης
the inserted note not between mese and trite
 ἐντεθῆναί φασιν, ἀλλὰ μεταξὺ τρίτης καὶ παρανεάτης·
to-have-been-put-in they-say but between trite and paranete
 καὶ αὐτὸν μὲν τρίτην ἀντ' ἐκείνης ἐπικληθῆναι, τὴν δὲ
and it indeed trite instead-of that to-have-been-named the and
 πάλαι τρίτην παραμέσῃ ἐν τῇ διαζεύξει γενέσθαι. τὸν δὲ
of-old trite paramese in the disjunction to-have-become the and

Φιλόλαον τῷ προτέρῳ ὀνόματι τὴν παραμέσῃν τρίτην
Philolaus by-the former name the paramese trite
 καλέσαι καίτοι διὰ τεσσάρων οὔσαν ἀπὸ τῆς νήτης.
to-have-called although through four being from the nete

Περὶ τῆς διὰ τῶν ἀριθμητικῶν
 λόγων ἀρμόσεως τῶν φθόγων

10 • LENGTH AND BORE AGAINST TENSION

Where tension raises pitch by increase, length and bore lower it — the proportion runs the other way. Stop a string at its half and it sounds the octave above the whole; at two-thirds the fifth, at three-quarters the fourth. The aulos bored into four equal lengths gives the same: the middle hole an octave above the whole pipe and a fifth above the lowest hole, which sounds a fourth above the whole; the note at the mouthpiece a double octave. Wide bores sound as thick strings do.

Πάλιν οὖν ἀνελθόντες ἐπὶ τὸν πρότερον λόγον συνάπτωμεν
again then having-gone-back to the former account let-us-join
 τὰ ἑξῆς, λέγοντες, ὅτι ἐναντίον τῇ κατὰ τὴν τάσιν
the following saying that contrary to-the by the tension
 συμμετρία τῷ μὲν πλήθει ὀξυτονούσῃ τοὺς φθόγους,
proportion by-the indeed multitude sharpening the notes
 τῇ δὲ ὀλιγότητι βαρυτονούσῃ συμβέβηκε περὶ τὰ μήκη
by-the and fewness flattening it-has-befallen about the lengths
 θεωρεῖσθαι καὶ τὰ πάχῃ τῶν τε χορδῶν καὶ τῶν
to-be-observed also the thicknesses of-the both strings and of-the
 κοιλιώσεων τῶν αὐλῶν κατ' ἀντίστροφον μέντοι ἀναλογίαν·
hollowings of-the auloi by (a)-converse however proportion
 ἐν τούτοις γὰρ ἀνάπαλιν αἱ μὲν βραχύτητες ὀξυτονοῦσιν,
in these for conversely the indeed shortnesses sharpen
 αἱ δὲ πλειονότητες βαρυτονοῦσιν. εἰ γὰρ τις χορδῆς
the and greater-lengths flatten if for one of-a-string

μακρᾶς ὑπὸ μίαν καὶ τὴν αὐτὴν τάσιν κειμένης ἐπὶ τινι
long under one and the same tension lying upon some
 κανόνι, ἐξηρμένης δ' αὐτοῦ ἐφ' ὅσον μὴ ψαύειν, τὸν ἀπὸ
rule raised and from-it to so-much as-not to-touch the from
 τῆς ὅλης κρουσθείσης φθόγγον συγκρίνοι πρὸς τὸν ἀπὸ τῆς
the whole struck note should-compare with the from the
 ἡμισείας, ἀποληφθείσης τῆς χορδῆς ὑπαγωγῇ ἢ τοιούτῳ
half cut-off the string by-a-bridge or such
 τινὶ ἐκ τοῦ μεσαιτάτου, ἵνα μὴ περαιτέρω τοῦ ἡμίους
some from the midmost so-that not further than-the half
 ὁ τῆς κρούσεως κραδασμὸς χωρῇ, διὰ πασῶν εὐρήσει
the of-the striking vibration should-go through all he-will-find
 τὸν ἀπὸ τῆς ἡμισείας πρὸς τὸν ἀπὸ τῆς ὅλης ψόφον
the from the half toward the from the whole sound
 μέζονα, ὅπερ ἐστὶ διπλάσιον, ἐναντιοπαθῶς ταῖς τοῦ
greater which-very is double oppositely to-the of-the
 μήκους ἀνταποδόσεις. εἰ δὲ κατὰ τὸ τρίτον μέρος ἀκριβῶς
length correspondences if and at the third part exactly
 μετρηθὲν κατὰσχοι τὸν κραδασμὸν, τὸ ἀπὸ τοῦ διμορίου
measured he-should-check the vibration the from the two-thirds
 φθέγμα ἡμιόλιον ἀναγκαίως ἔσται πρὸς τὸ ἀπὸ τῆς ὅλης,
utterance hemiolic necessarily will-be toward that from the whole
 ἀντιστρόφως τῷ μήκει. εἰ δὲ κατὰ τὸ τέταρτον μέρος
conversely to-the length if and at the fourth part
 τῆς χορδῆς ἐγκόψεις τῇ κρούσει, περαιτέρω προχωρεῖν οὐκ
of-the string you-will-block the striking further to-advance not
 ἔω· τὸν κραδασμὸν, ἐπίτριτον ἂν πρὸς τὸ ἀπὸ τῆς ὅλης
allowing the vibration epitritic — toward that from the whole
 ἡχῇσει· τὸ ἀπὸ τῶν τριῶν μερῶν, ἐναντίως τῇ ἐκ τοῦ
would-sound the from the three parts contrariwise to-the in the
 μήκους σχέσει. ὥσπερ καὶ ἐπὶ τοῦ αὐλοῦ τρισὶ τρυπήμασιν
length relation just-as also upon the aulos by-three holes

εἰς τέσσαρα ἴσα μήκη νεμηθέντος, εἰ φραγόντων τῶν
 into four equal lengths divided if stopped the
 πρώτων τρυπημάτων τῇ τῶν δακτύλων ἐπιθέσει τὸν
 first holes by-the of-the fingers placing the
 ἀπὸ τοῦ ὅλου αὐλοῦ φθόγγον συμβάλλοιμεν πρὸς τὸν ἀπὸ
 from the whole aulos note we-should-compare with the from
 τοῦ μέσου τρυπήματος ἐκπεμπόμενον ἀνεθείσης τῆς τοῦ
 the middle hole sent-out released the of-the
 δακτύλου ἐπιθέσεως, εὔρεθείη ἂν διπλάσιος, καὶ διὰ
 finger placing would-be-found — double and through
 πασῶν τε ὁ ἀπὸ τοῦ μέσου τρυπήματος φθόγγος πρὸς
 all and the from the middle hole note toward
 τὸν ἀπὸ τοῦ ὅλου αὐλοῦ. ὁ δ' αὐτὸς καὶ πρὸς τὸν ἀπὸ
 the from the whole aulos the and same also toward the from
 τοῦ ὑπ' αὐτὸν, κειμένου δὲ πρὸς τῷ βατῆρι κατωτάτω
 the under it lying and near the bridge lowest
 τρυπήματος ἡμιόλιος. οὗτος δὲ πρὸς τὸν ἀπὸ τοῦ ὅλου
 hole hemiolic this and toward the from the whole
 ἐπίτριτος. ὁ δὲ ἀπὸ τοῦ πρὸς τῇ γλωσσίδι φθόγγος
 epitritic the and from the near the mouthpiece note
 πρὸς μὲν τὸν ἀπὸ τοῦ μέσου διπλάσιος, τετραπλάσιος δὲ
 toward indeed the from the middle double quadruple and
 πρὸς τὸν ἀπὸ τοῦ ὅλου, ἀντιπαθῶς ταῖς κατὰ τὰ μήκη
 toward the from the whole oppositely to-the by the lengths
 ἀναλογίαις. καὶ τῶν συρίγγων παραπλήσιόν τι
 proportions and-upon the pan-pipes similar something
 τὰ μήκη ἀπεργάζεται καὶ αἱ τῶν κοιλιώσεων εὐρύτητες
 the lengths effect and the of-the hollowings widths
 ὥσπερ καὶ αἱ τῶν χορδῶν παχύτητες· αἱ γὰρ δίκωλοι
 just-as also the of-the strings thicknesses the for two-limbed
 διπλάσιον ἤχουσι τῶν τετρακώλων.
 double sound than-the four-limbed

The diagram spans a double octave, which is as far as the singing voice goes without cracking upward or growling downward. To the old seven-stringed lyre were added the tetrachord of the topmost and that of the lowest, then the disjunctive eighth note, then *proslambanomenos* below — so that fifteen notes stand, *mese* eighth from either end. Nicomachus names all five tetrachords and their conjunctions, and promises the full account elsewhere.

- 1 Τόδε τοῖνυν τὸ τοῦ διαγράμματος κύτος κατὰ τὸ διατονικὸν
this-here accordingly the of-the diagram compass by the diatonic
 γένος ἐστὶν δις διὰ πασῶν τετραπλασίου πλάτους.
genus is twice through all of-quadruple breadth
 τοσοῦτον γὰρ ἢ ἐναγώνιος φωνὴ διανύει χωρὶς κινδύνου
so-much for the contest voice traverses without danger
 τινὸς ἢ ὀλισθήματος, ἐφ' ἐκάτερον ἄκρον δυσέμπτως
any or slipping toward each extreme hard-to-fall-into
 γινομένη, εἰς μὲν κοκκυσμὸν κατὰ τὸ νητοειδές, εἰς δὲ
becoming into indeed (a)-cuckoo-cry by the nete-like into and
 βηχίαν κατὰ τὸ βομβυκέστερον τῶν ὑπατῶν.
(a)-cough by the more-droning of-the hypatai
- 2 *** Τῇ τοῖνυν ἀρχαιοτρόπῳ λύρᾳ, τουτέστι τῇ
(lacuna) to-the accordingly old-fashioned lyre that-is to-the
 ἑπταχόρδῳ, κατὰ συναφὴν ἐκ δύο τετραχόρδων
seven-stringed by conjunction from two tetrachords
 συνεστώσῃ— τῆς μέσης αὐτῆς ἀμφοτέρα περατούσης τὰ
composed of-the mese itself both bounding the
 σύμφωνα διαστήματα, τὸ μὲν βαρύτερον, τὸ πρὸς τῇ
concordant intervals the one heavier that toward the
 ὑπάτῃ, ἐπὶ τὸ ὀξύ, τὸ δ' ὀξύτερον, τὸ πρὸς τῇ νήτῃ,
hypate at the sharp the other sharper that toward the nete
 ἐπὶ τὸ βαρὺ— προσῆψαν ἄλλα δύο τετράχορδα, ἐκάτερον
at the heavy they-attached other two tetrachords each

ἐφ' ἐκατέρω ἄκρῳ. ἐπὶ μὲν τῇ ἐξ ἀρχῆς νήτῃ τὸ
at each extreme at indeed the from (the)-beginning nete the
 ὑπερβολαίων ἐπικληθὲν, ὅτι ὀξυτέρα καὶ ὑπερβαλλούσῃ
of-the-topmost named because with-a-sharper and exceeding
 συνίστατο φωνῇ, ἀπ' αὐτῆς πάλιν κατὰ συναφὴν
it-was-constituted voice from it again by conjunction
 ἀρχόμενον τῆς πάλαι νήτης. ὥστε τριῶν μόνον φθόγγων
beginning of-the old nete so-that of-three only notes
 προσαφθέντων πέρας ἔσχε τὸ ἐπιταθὲν τετράχορδον, ὧν
having-been-added (an)-end had the tightened tetrachord of-which
 ὀνόματα εἰκότως τοιαῦτ' ἐγένετο· τρίτῃ ὑπερβολαίων, εἴτα
names fittingly such became trite of-the-topmost then
 παρανήτῃ ὑπερβολαίων, εἴτα νήτῃ τῶν αὐτῶν. ἵνα δὲ πρὸς
paranete of-the-topmost then nete of-the same so-that and for
 ἀντιδιαστολὴν τὸ πρὸ αὐτοῦ τετράχορδον τὸ τῇ μέσῃ
distinction the before it tetrachord that with-the mese
 συναφὲς οὕτως ὀνομαζομένους σχῇ τοὺς φθόγγους· μετὰ
conjoined thus named might-have the notes after
 μέσῃ τρίτῃ συνημμένων, εἴτα παρανήτῃ συνημμένων, εἴτα
mese trite of-the-conjoined then paranete of-the-conjoined then
 νήτῃ συνημμένων. καὶ τὸ σύμπαν νητοειδὲς ἀπ' αὐτῆς τῆς
nete of-the-conjoined and the whole nete-like(-system) from itself the
 μέσης ἀριθμούμενον ἐπτάχορδον πάλιν ἀναγκαίως καὶ αὐτὸ
mese counted seven-stringed again necessarily also itself
 ἀποτελεῖται. ἐπὶ δὲ τῇ ἐξ ἀρχῆς ὑπάτῃ ἐπὶ τὸ βαρὺ τὸ
is-completed at and the from (the)-beginning hypate at the heavy the
 ἕτερον τῶν λεχθέντων προσήψαν τετράχορδον, πάλιν κατὰ
other of-the mentioned they-attached tetrachord again by
 συναφὴν, συνυπακούσης αὐτῷ καὶ τῆς παλαιᾶς ὑπάτης
conjunction sounding-together with-it also the old hypate
 ὥς δὴ ὀξυτέρου τῶν ἐν αὐτῷ φθόγγων. παραπλησίως
as indeed sharper than-the in it notes similarly

δὲ ἔνεκα ἀντιδιαστολῆς τῆς πρόσθεν τάξεως καὶ τοῦτο
and for-the-sake of-distinction of-the former arrangement also this
 ἔτυχεν ὀνομάτων εὐσημοτέρων. προσετέθη γὰρ ἐκάστῳ
got names more-significant was-added for to-each
 τὸ ὑπατῶν, οἷον ὑπάτη ὑπατῶν, παρυπάτη ὑπατῶν,
the of-the-lowest such-as hypate of-the-lowest parhypate of-the-lowest
 διάτονος ὑπατῶν ἢ λιχανὸς ὑπατῶν, οὐδὲν γὰρ διαφέρει
diatonos of-the-lowest or lichanos of-the-lowest in-nothing for it-differs
 ὅποτερωσοῦν ὀνομάζειν. καὶ τοῦτο δὲ ὅλον τὸ σύστημα ἀπὸ
in-whichever-way to-name and this and whole the system from
 τῆς μέσης ἐπὶ τὴν ὑπατῶν ὑπάτην ἑπτάχορδον συνέβαινεν
the mese to the of-the-lowest hypate seven-stringed it-happened
 εἶναι ἐκ δύο συναφῶν τετραχόρδων συγκεῖμενον καὶ αὐτῶν
to-be from two conjoined tetrachords composed and themselves
 ἐνὶ κοινῷ χρωμένων φθόγγῳ τῇ ἀρχαίᾳ ὑπάτῃ. ὥστε ἀπὸ
one common using note the ancient hypate so-that from
 ὑπάτης ὑπατῶν ἐπὶ νήτην ὑπερβολαίων τέσσαρα εἶναι
hypate of-the-lowest to nete of-the-topmost four to-be
 τετράχορδα συνημμένα. εὕρισκετο δὲ τρισκαιδεκάχορδον
tetrachords conjoined it-was-found and thirteen-stringed
 διατονικῶς ἀμφοτέρωθεν ἐβδόμης τεταγμένης. ἔπειτα, ὡς
diatonically on-both-sides (a)-seventh being-ranked then as
 3 προελέχθη, τὸν ὄγδοον φθόγγον τὸν διεστῶτα τόνῳ μεταξὺ
was-said-before the eighth note the standing-apart by-a-tone between
 μέσης καὶ τῆς ἀρχαίας τρίτης παρενέθηκαν οἱ τὴν ἀρμονίαν
mese and the ancient trite inserted those the harmonia
 ποικίλλοντες (ἢ ὡς ἔνιοι μεταξὺ τρίτης καὶ παρανήτης)
embellishing or as some between trite and paranete
 καὶ τὴν τοῦ διὰ πέντε ἔμφασιν τρανοῦντες. καὶ οὐκέτι ἡ
and the of-the through five appearance making-clear and no-longer the

μέση τῷ ὄντι μέση εὑρίσκετο. ἐν γὰρ χορδαῖς ἀρτιοπαγέσιν
mese in reality mese was-found in for strings evenly-fixed
 ἀδύνατον μέσῃν μίαν ὑπάρξαι, ἀλλὰ ἀναγκαίως δύο, ἐβδόμην
impossible (a)-mese one to-be but necessarily two (a)-seventh
 τε καὶ ὀγδόην. πάλιν προσέλαβον ὑπὲρ τὴν ὑπάτην
both and (an)-eighth again they-took-on above the hypate
 ἐξώτατον φθόγγον ἓνα, βαρύτατον τῶν ὄντων, ὃν ἐκ
outermost note one heaviest of-the existing which from
 τούτου ἐκάλεσαν προσλαμβανόμενον, τόνου ἀπόστασιν
this they-called proslambanomenos of-a-tone (a)-distance
 καὶ τὸν ἔχοντα πρὸς τὴν ὑπατῶν ὑπάτην ἐπὶ τὸ βαρὺ, ὥνα
also-it having toward the of-the-lowest hypate at the heavy so-that
 ὀκτάχορδα ἐκατέρωθεν τῆς μέσης ὑπάρξῃ τὰ συστήματα,
eight-stringed on-both-sides of-the mese might-be the systems
 καὶ ἡ μὲν ὡς ἀληθῶς μέση γένηται ἐν πεντεκαίδεκα
and the indeed as truly mese might-become among fifteen
 φθόγγοις ὀγδὴ ἐκατέρωθεν κειμένη, καὶ δις διὰ πασῶν τὸ
notes eighth on-both-sides lying and twice through all the
 σύμπαν τοῦ διαγράμματος μέγεθος γένηται δις διπλάσιον,
whole of-the diagram magnitude might-become twice double
 ὅπερ ἐστὶ τετραπλάσιον, καὶ ἡ τάξις τῶν προσηγοριῶν
which-very is quadruple and the order of-the appellations
 τοιαύτη τις ἄνωθεν ἐφεξῆς ἦ· προσλαμβανόμενος, εἴτα
such some from-above successively might-be proslambanomenos then
 μετὰ ἀπόστασιν ὅλου τόνου ὑπάτη ὑπατῶν, εἴτα μεθ'
after (a)-distance of-a-whole tone hypate of-the-lowest then after
 ἡμιτόνιον παρυπάτη ὑπατῶν, εἴτα μετὰ τόνον λιχανὸς
(a)-semitone parhypate of-the-lowest then after (a)-tone lichanos
 ὑπατῶν, ἀπὸ τοῦ τὸν τῆς ἀριστερᾶς χειρὸς δάκτυλον, τὸν
of-the-lowest from the the of-the left hand finger the
 παρὰ τὸν ἀντίχειρα, τὸν οὕτω λιχανὸν καλούμενον αὐτῷ
beside the thumb the thus lichanos called on-it

αἰὲ ἐπιτίθεσθαι, εἶτα μετ' ἄλλον τόνον ὑπάτη μέσων,
always to-be-placed then after another tone hygate of-the-middle
 ἐξῆς δὲ μεθ' ἡμιτόνιον παρυπάτη μέσων, μετὰ δὲ
successively and after (a)-semitone parhygate of-the-middle after and
 τόνον λιχανὸς μέσων, ὃν καὶ διάτονον καλοῦσιν ἀπ'
(a)-tone lichanos of-the-middle which also diatonos they-call from
 αὐτοῦ τοῦ γένους τοῦ διατονικοῦ προσαγορεύοντες, εἶτα
itself the genus the diatonic naming then
 μετ' ἄλλον τόνον μέση, εἶτα παράμεσος μετὰ ὅλον τόνον,
after another tone mese then paramesos after (a)-whole tone
 εἶτα τρίτη διεzeugμένων μετὰ ἡμιτόνιον, εἶτα μετὰ τόνον
then trite of-the-disjoined after (a)-semitone then after (a)-tone
 παρανήτη διεzeugμένων, καὶ μετ' ἄλλον νήτη διεzeugμένων,
paranete of-the-disjoined and after another nete of-the-disjoined
 ταύτῃ δ' ἐξῆς μεθ' ἡμιτόνιον τρίτη ὑπερβολαίων, εἶτα
to-this and successively after (a)-semitone trite of-the-topmost then
 μετὰ τόνον παρανήτη ὑπερβολαίων, καὶ ἐπὶ πάσαις μετὰ
after (a)-tone paranete of-the-topmost and upon all after
 τόνον νήτη ὑπερβολαίων.

(a)-tone nete of-the-topmost

- 5 Ὅθεν κα δὲ ὑπομνήσεως τῆς πρωτοτύπου κατὰ τὴν
for-the-sake and of-remembrance of-the original by the
 ἐπτάχορδον συναφῆς παρεμβάλλεται μεταξὺ τοῦ τε
seven-stringed conjunction is-inserted between the both
 μέσων τετραχόρδου καὶ τοῦ διεzeugμένων ἄλλο τι
of-the-middle tetrachord and the of-the-disjoined another some
 λεγόμενον συνημμένον, εὐθὺς τὴν ἑαυτοῦ τρίτην ἔχον
called of-the-conjoined at-once the of-itself trite having
 ἡμιτονίῳ διεστῶσαν ἀπὸ τῆς μέσης, εἶτα μετὰ τόνον τὴν
by-a-semitone standing-apart from the mese then after (a)-tone the
 ἰδίαν παρανήτην, εἶτα μετ' ἄλλον τόνον τὴν συνημμένην
proper paranete then after another tone the conjoined

νήτην ὁμότονον ἐκ παντὸς καὶ ὁμόφωνον τῇ
nete same-toned from every(-way) and same-sounding with-the
διεzeugμένη παρανήτη. ὥστε τετράχορδα μὲν ὑπάρχειν τὰ
disjoined paranete so-that tetrachords indeed to-be the
πάντα πέντε, ὑπατῶν μέσων συνημμένων διεzeugμένων
all five of-the-lowest of-the-middle of-the-conjoined of-the-disjoined
ὑπερβολαίων.— τούτων δὲ διαζεύξεις μὲν εἶναι δύο, συναφὰς 6
of-the-topmost of-these and disjunctions indeed to-be two conjunctions
δὲ τρεῖς. διαζεύξεις μὲν τὴν τε μεταξὺ τοῦ συνημμένων καὶ
and three disjunctions indeed the both between the of-the-conjoined and
τοῦ ὑπερβολαίων καὶ τὴν τῶν μέσων καὶ διεzeugμένων
the of-the-topmost and the of-the of-the-middle and of-the-disjoined
ἐκατέραν ἀνὰ τόνου μέγεθος δισπάνουσιν.— συναφὰς δὲ
each by of-a-tone magnitude separating conjunctions and
τρεῖς, τὴν τε τὸ ὑπατῶν τῷ μέσων συνάπτουσιν, καὶ
three the both the of-the-lowest with-the of-the-middle joining and
τὴν αὐτὸ τὸ μέσων πρὸς τὸ συνημμένων, καὶ τελευταίαν
the itself the of-the-middle toward the of-the-conjoined and last
τὴν τὸ διεzeugμένων πρὸς τὸ ὑπερβολαίων. τούτων δὲ
the the of-the-disjoined toward the of-the-topmost of-these and
πάντων τὰς καθ' ἑκάστον φθόγγον εὐρέσεις καὶ αἰτίας
all the by each note findings and causes
καὶ προαγωγὰς, ὡς ἐγένοντο καὶ ὑπὸ τίνων καὶ πότε καὶ
and advances how they-arose and by whom and when and
ἐκ ποίας ἀφορμῆς, ἐν τοῖς κατὰ πλάτος ἀποδώσομεν
from what occasion in the(-works) at length we-shall-render
σοι, ἀπὸ τετραχόρδου τὴν ἀρχὴν ποιησάμενοι μέχρι τῆς
to-you from (a)-tetrachord the beginning having-made until the
τελειωτάτης καταπυκνώσεως τῆς διὰ πασῶν, οὐ μόνον ἐν
most-complete close-packing of-the through all not only in
τῷ διατονικῷ τούτῳ γένει, ἀλλὰ καὶ ἐν τῷ χρωματικῷ καὶ
the diatonic this genus but also in the chromatic and

ἐν τῷ ἐναρμονίῳ μετὰ μαρτυριῶν παλαιῶν ἀξιοχρεωτάτων
in the enharmonic with testimonies of-ancient most-trustworthy
 τε καὶ ἐλλογίμων ἀνδρῶν. καὶ προσεκθισόμεθα τὸν τοῦ
both and esteemed men and we-shall-set-out-besides the of-the
 Πυθαγορικοῦ λεγομένου κανόνος κατατομὴν ἀκριβῶς καὶ
Pythagorean so-called canon division exactly and
 κατὰ τὸ βούλημα τοῦδε τοῦ διδασκάλου συντετελεσμένην,
by the intention of-this-very the teacher accomplished
 οὐχ ὥς Ἐρατοσθένης παρήκουσεν ἢ Θράσυλλος, ἀλλ' ὥς
not as Eratosthenes misheard or Thrasyllus but as
 ὁ Λοκρὸς Τίμαιος, ᾧ καὶ Πλάτων παρηκολούθησεν,
the Locrian Timaeus whom also Plato followed
 ἕως τοῦ ἑπτακαικοσιπласίου.
as-far-as the twenty-seven-fold

Περὶ τῆς κατὰ τὰ τρία γένη
 τῶν φθόγγων προβάσεως καὶ διαιρέσεως

12 · THE THREE GENERA COMPARED

Note, interval, relation, difference, and system are defined again — and Nicomachus insists that relation and difference are not the same. In the fourth, the diatonic runs semitone, tone, tone; the chromatic semitone, semitone, three-semitones; the enharmonic diesis, diesis, ditone. Only the two middle notes change; chroma shifts just one, by a semitone, which is why it stands between the other two. The octave is not six tones but five and two so-called semitones, as Philolaus' words show.

Ἵνα δὲ τὴν κατὰ τὰ τρία γένη προβίβασιν ἀπὸ
so-that and the by the three genera advance from
 προσλαμβανομένου μέχρι ὑπερβολαίας νήτης εὐτακτῶς
proslambanomenos to of-the-topmost nete orderly
 ἑκτατὴν ἔχης, εὐλογον μικρὰ ἔτι ἄνωθεν
extended you-may-have (it-is)-reasonable (a)-little still from-above

προσυπομνήσαι ἀπὸ τῶν ἤδη εἰρημένων ἀρξάμενον
to-recall-beforehand from the already said having-begun
 ἔνεκα σαφηνείας.

for-the-sake of-clarity

Φθόγγος ἐστὶ φωνὴ ἄτομος, οἷον μονὰς κατ' ἀκοήν· ὥς
(a)-note is (a)-sound indivisible as-it-were (a)-unit to bearing as
 δὲ οἱ νεώτεροι, ἐπίπτωσις φωνῆς ἐπὶ μίαν τάσιν καὶ ἀπλὴν·
and the moderns (a)-falling of-voice upon one tension and simple
 ὥς δ' ἔνιοι, ἡχος ἀπλατῆς κατὰ τόπον ἀδιάστατος.

as and some (a)-sound breadthless by place undistanced

Διάστημα δ' ἐστὶ δυοῖν φθόγγων μεταξύτης. σχέσις δὲ
(an)-interval and is of-two notes betweenness (a)-relation and
 λόγος ἐν ἐκάστω διαστήματι μετρητικὸς τῆς ἀποστάσεως·
(a)-ratio in each interval measuring of-the distance

διαφορὰ δὲ ὑπερβολὴ ἢ ἔλλειψις φθόγγων πρὸς ἀλλήλους.
(a)-difference and (an)-excess or deficiency of-notes toward one-another

κακῶς γὰρ οἴονται οἱ νομίζοντες διαφορὰν καὶ σχέσιν τὸ
badly for think those supposing difference and relation the
 αὐτὸ εἶναι. ἰδοὺ γὰρ τὰ δύο πρὸς τὸ ἐν διαφορὰν μὲν ἔχει
same to-be behold for the two toward the one (a)-difference indeed has
 τὴν αὐτὴν, ἣν ἐν πρὸς δύο, σχέσιν δὲ οὐ τὴν αὐτὴν. τὰ
the same which one toward two (a)-relation and not the same the
 μὲν γὰρ δύο διπλάσια, τὸ δὲ ἐν ἡμισυ. καὶ πάλιν ἐν πᾶσιν

indeed for two (are)-double the and one half and again in all

ἀριθμητικῆς μεσότητος ὅροις τρισὶν ἢ καὶ πλείοσι διαφορὰ
of-arithmetic mean terms three or even more (a)-difference

μὲν ἢ αὐτὴ ἐν πᾶσι, σχέσις δὲ ἄλλη καὶ ἄλλη. περὶ
indeed the same in all (a)-relation and other and other about

τοῦτο δὲ πλατύτερον εἴσῃ ἐν τοῖς κατὰ πλάτος.

this and more-broadly you-will-know in the(-works) at length

Σύστημα δέ ἐστὶ δυοῖν ἢ καὶ πλειόνων διαστημάτων
 (a)-system and is of-two or even more intervals
 σύνοδος. ἀλλὰ τῶν μὲν διαστημάτων οὐδεὶς φθόγγος
 meeting but of-the indeed intervals no note
 πρὸς τὸν συνεχῇ σύμφωνος, ἀλλὰ πάντως διάφωνος,
 toward the continuous(-one) (is)-concordant but altogether discordant
 τῶν δὲ συστημάτων ἐστὶ τινα σύμφωνα, τινὰ δὲ καὶ
 of-the and systems are some concordant some and also
 διάφωνα. σύμφωνα μὲν, ἐπειδὴ οἱ περιέχοντες φθόγγοι
 discordant concordant indeed since the enclosing notes
 διάφοροι τῷ μεγέθει ὄντες, ἅμα κρουσθέντες ἢ ὁμως
 different in-the magnitude being at-once struck or nevertheless
 ποτὲ ἠχίσαντες ἐκραθῶσι ἀλλήλοις οὕτως, ὥστε
 sometime having-sounded are-blended with-one-another so as
 ἐνοειδῇ τὴν ἐξ αὐτῶν φωνὴν γενέσθαι καὶ οἶον μίαν·
 one-formed the from them sound to-become and as-it-were one
 διάφωνοι δὲ, ὅταν διεσχισμένη πῶς καὶ ἀσύγκρατος ἢ
 discordant and when split somehow and unblended the
 ἐξ ἀμφοτέρων φωνῇ ἀκούηται.

from both sound is-heard
 Ἐπεὶ δὲ τὸ πρώτιστον καὶ στοιχειωδέστατον σύμφωνον
 since and the first and most-elemental concord
 τὸ διὰ τεσσάρων ἐστὶν ἐν τετραχόρδῳ συνεχεῖ, λόγῳ δὲ
 the through four is in (a)-tetrachord continuous in-ratio and
 ἐπιτρίτῳ, εὐλόγως κατὰ τοῦτο τῶν τῆς μελωδίας τριῶν
 epitritic reasonably by this of-the of-the melody three
 γενῶν αἱ παραλλαγαὶ εὐρίσκονται πρὸς ἀλλήλας. τὸ μὲν
 genera the variations are-found toward one-another the indeed
 γὰρ διατονικόν, περὶ οὗ καὶ προέφαιμεν, οὕτω προχωρεῖ·
 for diatonic about which also we-said-before thus advances
 ἡμιτόνιον, εἶτα τόνος, εἶτα τόνος· τρία διαστήματα ἐν
 (a)-semitone then (a)-tone then (a)-tone three intervals in

τέσσαρσιν ἀριθμοῖς ὃ ἐστι φθόγγοις. καὶ ἐκ τούτου γε
four numbers which is notes and from this at-least
 διατονικὸν καλεῖται, ἐκ τοῦ προχωρεῖν διὰ τῶν τόνων
diatonic it-is-called from the to-advance through the tones
 αὐτὸ μονώτατον τῶν ἄλλων. τὸ δὲ χρωματικὸν οὕτω
it alone of-the others the and chromatic thus
 προβιβάζεται· ἡμιτόνιον, εἶτα ἄλλο ἡμιτόνιον, εἶτα ἐπὶ
is-advanced (a)-semitone then another (a)-semitone then upon
 τούτοις ἀσύνθετον τριημιτόνιον. ἵνα καὶ τοῦτο, εἰ καὶ μὴ
these (an)-incomposite three-semitone so-that also this even if not
 ἐκ δύο τόνων καὶ ἡμιτονίου ἀντικρὺς ἐστίν, ἀλλ' οὖν
from two tones and (a)-semitone outright it-is but nevertheless
 ἴσα ἔχον φαίνεται τὰ διαστήματα δυσὶ τόνοις καὶ ἡμιτονίῳ.
equal having may-appear the intervals to-two tones and (a)-semitone
 τὸ δὲ ἐναρμόνιον τὴν προκοπὴν φυσικῶς τοιαύτην ἔχει·
the and enharmonic the progress naturally such has
 δίεσις, ὅπερ ἐστὶν ἡμιτονίου ἡμισυ, καὶ πάλιν ἄλλη
(a)-diesis which-very is of-a-semitone half and again another
 δίεσις, συναμφοτέρα ἡμιτονίῳ ἴσαι, καὶ τὸ λειπόμενον
(a)-diesis both-together to-a-semitone equal and the remaining
 τοῦ τετραχόρδου, ὅλον δίτονον ἀσύνθετον· ἵνα καὶ τοῦτο
of-the tetrachord whole (a)-ditone incomposite so-that also this
 δυσὶ τόνοις καὶ ἡμιτονίῳ ἴσον ἢ ἐνδοτέρω γὰρ τούτων
to-two tones and (a)-semitone equal may-be further-in for than-these
 συμφωνῆσαι ἀδύνατον φθόγγον φθόγγῳ. δῆλον οὖν ὅτι αἱ
to-concord (is)-impossible (a)-note with-a-note clear then that the
 παραλλαγὰι τῶν γενῶν οὐκ ἐν τοῖς τέσσαρσι φθόγγοις
variations of-the genera not in the four notes
 τοῦ διὰ τεσσάρων διαφορὰν λαμβάνουσιν, ἀλλ' ἐν μόνοις
of-the through four (a)-difference take but in only
 τοῖς δυσὶ μέσοις. ἐν μὲν οὖν χρωματικῷ ὁ τρίτος ἡλλάγη
the two middle in indeed then chromatic the third was-changed

φθόγγος πρὸς τὸ διάτονον, ὁ δὲ δεύτερος τῷ μὲν διατονικῷ
note toward the diatonic the and second in-the indeed diatonic
 ὁ αὐτὸς ἔμεινεν, ὁμοτονεῖ δὲ τῷ τοῦ ἐναρμονίου τρίτῳ.
the same remained is-of-same-tone and with-the of-the enharmonic third
 ἐν δὲ τῷ ἐναρμονίῳ οἱ δύο μέσοι ἐξηλλάγησαν πρὸς τὸ
in and the enharmonic the two middle were-changed toward the
 διάτονον· ὥστ' ἀντικεῖσθαι τὸ ἐναρμόνιον τῷ διατόνῳ,
diatonic so-that to-be-opposed the enharmonic to-the diatonic
 μέσον δ' αὐτῶν ὑπάρχειν τὸ χρωματικόν· μικρὸν γὰρ
(a)-middle and of-them to-be the chromatic (a)-little for
 παρέτρεψεν, ἐν μόνον ἡμιτόνιον, ἀπὸ τοῦ διατονικοῦ. ἔνθεν
it-turned-aside one only semitone from the diatonic whence
 καὶ χρῶμα ἔχειν λέγομεν τοὺς εὐτρέπτους ἀνθρώπους. οἱ
also chroma to-have we-say the versatile men the
 μὲν οὖν τοῦ τετραχόρδου ἄκροι ἐστῶτες φθόγγοι λέγονται,
indeed then of-the tetrachord extreme standing notes are-called
 οὐ γὰρ μεταπίπτουσιν ἐν οὐδενὶ τῶν γενῶν· οἱ δὲ μέσοι
not for they-change-about in any of-the genera the and middle
 κινούμενοι· ἐν γε τῷ ἐναρμονίῳ. ἐν δὲ τῷ χρώματι ὁ
moving in at-least the enharmonic in and the chroma the
 δεύτερος κινούμενός τε καὶ οὐ κινούμενος· πρὸς μὲν γὰρ τὸ
second moving both and not moving toward indeed for the
 διάτονον οὐ μεταπίπτει, πρὸς δὲ τὸ ἐναρμόνιον μεταπίπτει.
diatonic not it-changes-about toward and the enharmonic it-changes-about
 Σύστημα δὲ οὔσα ἢ διὰ πασῶν εἴτε ὑπὲρ μέσης
(a)-system and being the through all whether above mese
 ἕως προσλαμβανομένου, εἴτε ὑπὸ μέσης ἕως νήτης
as-far-as proslambanomenos whether below mese as-far-as nete
 ὑπερβολαίας ἐν ὀκτὼ χορδαῖς— τῆς τε διὰ τεσσάρων
of-the-topmost in eight strings of-the both through four
 δύο τόνων καὶ ἡμιτονίου οὔσης, τῆς τε διὰ πέντε
of-two tones and of-a-semitone being of-the both through five

τριῶν τόνων καὶ ἡμιτονίου ὑπαρχούσης— οὐκ εὐθὺς ἔξ
of-three tones and of-a-semitone being not at-once of-six
 τόνων ὡς οἱ νεώτεροι νομίζουσιν ἀποτελεῖται, ἀλλὰ πέντε
tones as the moderns think is-completed but of-five
 τόνων καὶ δύο τῶν λεγομένων ἡμιτονίων. ἄπερ εἰ ὡς
tones and of-two of-the so-called semitones which if as
 ἀληθῶς ἡμίση τόνων ὑπῆρχε, τί ἐκώλυε τόνον ἔξ αὐτῶν
truly halves of-tones were what prevented (a)-tone from them
 ἀποτελεῖσθαι καὶ ἔξ τόνων ὑπάρχειν αὐτήν; τὴν δὲ
to-be-completed and of-six tones to-be it the and
 τούτου ἀπόδειξιν ἐν τοῖς κατὰ πλάτος ποικιλώτατα
of-this demonstration in the(-works) at length most-variously
 σαφηνιούμεν. συμφήσει δὲ ἡμῖν καὶ ἐν τῇ προκειμένη
we-shall-clarify will-agree and with-us also in the proposed
 λέξει Φιλόλαος λέγων· “ἁρμονία δὲ πέντε ἐπόγδοα καὶ
passage Philolaus saying harmonia and (is)-of-five epogdoics and
 δύο διέσεις”, τούτέστι δύο ἡμιτόνια, ἃ πεποιήκει ἂν
two dieses that-is two semitones which would-have-made —
 ἓνα τόνον, εἴπερ ἦν ὡς ἀληθῶς ἡμίση τόνων.
one tone if-indeed they-were as truly halves of-tones
 Ἄναμεμιγμένων οὖν ὑπὸ τὸ αὐτὸ διάγραμμα τῶν τριῶν
having-been-mixed then under the same diagram of-the three
 ἀλλήλοις γενῶν τὰ ὀνόματα ἔσται ταῦτα· Τῆς δὲ
with-one-another genera the names will-be these of-the and
 γραφῆς τοιαύτης τῇ ἐπέξει συγγνώσκουσα— σύνοισθα
writing such by-the urgency pardoning you-know-well
 γάρ, ὅτι ἐν αὐτῇ τῇ ὁδεύσει μοι ἐπέταξας παντοίως
for that in itself the journeying to-me you-enjoined in-every-way
 μετεώρω— κατὰ τὸν ἡμερώτατόν σου τρόπον καὶ
(while)-distracted by the gentlest of-you manner and
 κοινῶν νοσημονέστατον ἀπόδεξαι μὲν ὡς ἀπαρχὴν τινα
of-common most-understanding accept indeed as (a)-first-fruit certain

καὶ ἐξευμενισμόν, προσδέχου δὲ θεῶν ἐπιτρεπόντων
and propitiation expect and (the)-gods permitting
 πληρεστάτην καὶ παντοίως ἐντελεστάτην τὴν περὶ
(a)-fullest and in-every-way most-complete the about
 αὐτῶν τούτων τεχνολογίαν ἀντίκα μάλα σοι ὑπ' ἐμοῦ
these-same things technical-treatise immediately soon to-you by me
 πεμφθισομένην μετὰ τῆς πρώτης ἀφορμῆς.
to-be-sent with the first occasion

BACCHIUS

ΕΙΣΑΓΩΓΗ ΤΕΧΝΗΣ ΜΟΥΣΙΚΗΣ

Introduction to the Art of Music

The catechism opens with first definitions. Music is the knowledge of melody; a note is the fall of the voice on one tension; a system is built of notes, and an interval is the difference between two of them. The diesis is the smallest interval the voice can sing, and concord is the blending of two notes in which neither the lower nor the higher prevails.

Μουσική τίς ἐστίν; — Εἰδῆσις μέλους καὶ τῶν περὶ 1
music what is (a)-knowing of-melody and of-the(-things) about
μέλος συμβαινόντων.

melody occurring

Μουσικὸς δὲ τίς; — Ὁ εἰδὼς τὰ κατὰ τὰς
(a)-musician and who the(-one) knowing the(-things) in the
μελωδίας συμβαίνοντα.

melodies occurring

Πῶς ὑπάρχει; — Ἄ μὲν φύσει, ἂ δὲ τῇ 2
how does-it-subsist some(-things) indeed by-nature others and by-the
ἡμετέρα χρήσει.

our use

Ποῖα οὖν φύσει; — Αἱ τε ὀξύτητες καὶ βαρύτητες
which(-things) then by-nature the both sharpnesses and heavinesses
καὶ τὰ διαστήματα.

and the intervals

Ποῖα δὲ τῇ ἡμετέρα χρήσει; — Ἡ περὶ τοὺς
which(-things) and by-the our use the about the
φθόγγους μελοποιῖα.

notes melody-making

Αὐτὴ δὲ ἡ μουσικὴ ἐκ τίνος σύγκειται; — Ἐκ φθόγγων 3
itself and the music out-of what is-it-composed out-of notes
ἐμμελῶν καὶ συστημάτων.

melodic and systems

- 4 Φθόγγος δὲ καθόλου τί ἐστι; — Φωνῆς ἐμμελοῦς πτώσις
 (a)-note and in-general what is of-voice melodic (a)-falling
 ἐπὶ μίαν τάσιν. μία γὰρ τάσις ἐν φωνῇ ληφθεῖσα ἐμμελῇ
 upon one tension one for tension in voice taken (a)-melodic
 φθόγγον ἀποτελεῖ.
 note produces
- 5 Σύστημα δὲ τί ἐστι; — Τὸ ἐκ πλειόνων ἢ δύο
 (a)-system and what is that(-which) out-of more than two
 φθόγγων μελωδούμενον.
 notes is-sung
- 6 Διάστημα δὲ τί ἐστι; — Διαφορὰ δύο φθόγγων ἀνομοίων
 (an)-interval and what is (a)-difference of-two notes unlike
 ὀξύτητι καὶ βαρύτητι.
 in-sharpness and in-heaviness
- 7 Τί οὖν ἐστὶν ἐλάχιστον τῶν μελωδουμένων; —
 what then is smallest of-the(-things) sung
 Φθόγγος.
 (a)-note
- 8 Τί δέ ἐστιν ἐλάχιστον τῶν διαστημάτων; — Δίεσις.
 what and is smallest of-the intervals (a)-diesis
 Δίεσις δὲ τί ἐστίν; Ὅ δύνатаι ἡ ἡμετέρα φύσις
 (a)-diesis and what is that(-which) is-able the our nature
 ἐμμελῶς ἐλάχιστον ἀνεῖναί τε καὶ ἐπιτεῖναι.
 melodically (as)-smallest to-slacken both and to-tighten
 Τῆς δὲ διέσεως τί διπλάσιον; — Ἡμιτόνιον.
 of-the and diesis what (is)-double (a)-semitone
 Τοῦ δὲ ἡμιτονίου διπλάσιον τί; — Τόνος.
 of-the and semitone double what (a)-tone
- 9 Τόνος δὲ τί ἐστίν; — Ὡ μείζων ἢ διὰ πέντε
 (a)-tone and what is (that)-by-which greater the through five
 συμφωνία τῆς διὰ τεσσάρων.
 concord than-the through four

Συμφωνία δὲ τί ἐστι; Κρᾶσις δύο φθόγγων ἀνομοίων 10
concord and what is (a)-blending of-two notes unlike
 ὀξύτητι καὶ βαρύτητι λαμβανομένων, ἐν ᾗ οὐδέν τι
in-sharpness and in-heaviness being-taken in which in-no-respect at-all
 μᾶλλον τὸ μέλος φαίνεται τοῦ βαρυτέρου φθόγγου ἥπερ
more the melody appears of-the heavier note than
 τοῦ ὀξυτέρου, οὐδὲ τοῦ ὀξυτέρου ἥπερ τοῦ βαρυτέρου.
of-the sharper nor of-the sharper than of-the heavier

2 • THE GENERA AND THE TETRACHORD

Melody is slackening and tightening through tuneful notes. A pyknon is built from the two smallest intervals of the genus it stands in, and a genus is a division of the tetrachord. The enharmonic ascends by diesis, diesis, ditone; the chroma by semitone, semitone, three-semitones; the diatonic by semitone, tone, tone. A tetrachord is an order of successive notes whose extremes concord at the fourth, and it has three forms.

Μέλος δὲ τί ἐστιν; — Ἄνεσις καὶ ἐπίτασις δι' 19
melody and what is (a)-slackening and tightening through
 ἐμμελῶν φθόγγων γινομένη.
melodic notes arising

Πυκνὸν δὲ τί ἐστι; — Τὸ ἐκ δύο διαστημάτων 20
(a)-pyknon and what is that from two intervals
 ἐλαχίστων συγκείμενον ἐν ἐκάστῳ γένει.
smallest composed in each genus

Γένος δὲ τί ἐστιν; — Ἡ ἐν τετραχόρδῳ γενομένη 21
(a)-genus and what is the in (a)-tetrachord having-arisen
 διαίρεσις.
division

Πόσα οὖν γένη ἐστὶ τὰ μελωδούμενα; Τρία. — Τίνα

how-many then genera are the sung(-ones) three what

ταῦτα; — Ἐναρμόνιον, χρώμα, διάτονον.

these enharmonic chroma diatonic

22 Τὸ οὖν ἀρμονικόν πῶς μελωδεῖται; — Ἐπὶ μὲν τὸ ὀξύ

the then harmonic how is-it-sung toward indeed the sharp

κατὰ δίεσιν καὶ δίεσιν καὶ δίτονον, ἐπὶ δὲ τὸ βαρὺ

by (a)-diesis and (a)-diesis and (a)-ditone toward and the heavy

κατὰ τὸναντίον.

by the-contrary

23 Τὸ δὲ χρώμα πῶς μελωδεῖται; — Ἐπὶ μὲν τὸ ὀξύ

the and chroma how is-it-sung toward indeed the sharp

καθ' ἡμιτόνιον καὶ ἡμιτόνιον καὶ τριημιτόνιον, ἐπὶ δὲ τὸ

by (a)-semitone and (a)-semitone and (a)-three-semitone toward and the

βαρὺ κατὰ τὸναντίον.

heavy by the-contrary

24 Τὸ δὲ διάτονον πῶς μελωδεῖται; — Ἐπὶ μὲν τὸ ὀξύ

the and diatonic how is-it-sung toward indeed the sharp

καθ' ἡμιτόνιον καὶ τόνον καὶ τόνον, ἐπὶ δὲ τὸ βαρὺ

by (a)-semitone and (a)-tone and (a)-tone toward and the heavy

κατὰ τὸναντίον.

by the-contrary

25 Τὸ μέντοι διάτονον καθ' ἡμᾶς οὐ μελωδεῖται ἐν πυκνοῦ

the however diatonic among us not is-sung in of-a-pyknon

τάξει. — Διὰ τί; Διὰ τὸ λέγεσθαι πυκνὸν τὸ ἔχον

order through what through the to-be-called (a)-pyknon that having

δύο διαστήματα τοῦ ἐνὸς ἐλάσσω.

two intervals than-the one smaller

Τετράχορδον δὲ τί ἐστι; Τάξις φθόγγων ἐξῆς 26

(a)-tetrachord and what is (an)-order of-notes successively

μελωδουμένων, ὧν οἱ ἄκροι πρὸς ἀλλήλους συμφωνοῦσι
sung of-which the extremes toward one-another concord
κατὰ τὸ διὰ τεσσάρων.

by the through four

Τετραχόρδων οὖν ἐστὶν εἶδη πόσα; — Τρία. — Τίνα 27

of-tetrachords then are forms how-many three what

ταῦτα; — Πρῶτον μὲν τὸ ὑπὸ βαρυπύκνων περιεχόμενον,
these first indeed that by heavy-pyknon(-notes) enclosed

δεύτερον δὲ τὸ ὑπὸ μεσοπύκνων περιεχόμενον, τρίτον
second and that by middle-pyknon(-notes) enclosed third

δὲ τὸ ὑπὸ ὀξυπύκνων περιεχόμενον.

and that by sharp-pyknon(-notes) enclosed

Πόσα οὖν ἐστὶ τετράχορδα ἐν τῷ ἀμεταβόλῳ συστήματι; 28

how-many then are tetrachords in the unmodulating system

— Κατὰ μὲν τὸ πλῆθος ἀόριστα, κατὰ δὲ δύναμιν
by indeed the multitude undefined by and function

πέντε.

five

Τίνα ταῦτα; — Ὑπάτων, μέσων, συνημμένων,

what these of-the-lowest of-the-middle of-the-conjoined

διεzeugμένων, ὑπερβολαίων.

of-the-disjoined of-the-topmost

3 · STANDING NOTES, CONJUNCTION, DISJUNCTION

Standing notes are so called because the tetrachords and pentachords are bounded by them; the moving notes lie between, and every interval slackens and tightens except two — *eklysis* and *ekbole*, which belong to the *enharmonic* alone. Conjunction is when two like tetrachords share a note; disjunction when a tone lies between two low-pyknon notes.

- 34 Ἄπυκνοι δὲ πόσοι; — Τρεῖς.
pyknon-free and how-many three
 Ἡ μέντοι μέση δοκεῖ ἔχειν πρὸς τὰς λοιπὰς τινα διαφορὰν.
the however mese seems to-have toward the remaining some difference
 κατὰ μὲν γὰρ τὰς συναφὰς βαρύπυκνος, κατὰ δὲ τὴν
by indeed for the conjunctions heavy-pyknon by and the
 διάζευξιν ἄπυκνος.
disjunction pyknon-free
- 35 Ἐστῶτας μὲν οὖν φθόγγους διὰ τί λέγομεν εἶναι;
standing indeed then notes through what do-we-say to-be
 — Διὰ τὸ περιέχεσθαι ὑπ' αὐτῶν τὰ τετράχορδα καὶ
through the to-be-enclosed by them the tetrachords and
 πεντάχορδα.
pentachords
- 36 Φερομένους δὲ τοὺς ὑπὸ τούτων περιεχομένους. Δι' ᾧν
moving and those by these enclosed through which
 τὰ διαστήματα πάντα ἀνίεται καὶ ἐπιτείνεται πλὴν δύο.
the intervals all are-slackened and are-tightened except two
- 37 Τίνων τούτων; — Ἐκλύσεως καὶ ἐκβολῆς.
of-what these of-eklysis and of-ekbole
 Πῶς; — Ἐκλυσις μὲν γὰρ ἀνίεται, ἐκβολὴ δὲ ἐπιτείνεται.
how eklysis indeed for is-slackened ekbole and is-tightened
 — Ἐν τίνι γένει; — Ἐναρμονίῳ, ἐν ἄλλῳ δὲ γένει
in what genus (in-the-)enharmonic in another and genus
 οὐ.
not
- 38 Συναφὰς οὖν πόσας λέγεις ἐν αὐτοῖς ὑπάρχειν; — Τρεῖς.
conjunctions then how-many do-you-say in them to-be three
 — Τίνας ταύτας; — Αἷς κατὰ φθόγγον ἢ κοινωνία
what these (those)-in-which by note the sharing
 ἐστι. λέγω δὲ οὕτως· ὅταν δύο τετραχόρδων ὁμοιοσχημάτων
is I-mean and thus when of-two tetrachords of-like-figure

φθόγγος ἐφ' ἑκάτερα κοινωνῇ, τοῦ μὲν βαρυτέρου

(a)-note on either-side shares than-the indeed heavier

τετραχόρδου ὀξύτερος ὢν, τοῦ δὲ ὀξύτερου βαρύτερος.

tetrachord sharper being than-the and sharper heavier

Διάζευξις δὲ τί ἐστιν; — Ὅταν δύο βαρυπύκνων φθόγγων 39

disjunction and what is when of-two heavy-pyknon notes

ἢ τόνος ἀνὰ μέσον. — Πόσας οὖν ἐροῦμεν διαζεύξεις; —

be (a)-tone in (the)-middle how-many then shall-we-say disjunctions

Δύο. — Τίνας ταύτας; — Τὴν μέσων καὶ τὴν συνημμένων.

two what these the of-the-middle and the of-the-conjoined

*** Τούτων δὲ εἶδη τὰ αὐτὰ πρὸς ἑαυτὰ πῶς συμφωνεῖ; 40

(lacuna) of-these and forms the same toward themselves how concord

— Τὰ μὲν συνημμένα κατὰ τὸ διὰ τεσσάρων, τὰ δὲ

the indeed conjoined by the through four the and

διεζευγμένα κατὰ τὸ διὰ πέντε.

disjoined by the through five

4 · SLACKENING, TIGHTENING, AND THE MODES

Ekklisis is a slackening of three dieses from a note of the harmonia, ekbole a tightening of five. Notes are of three kinds by their place in the pyknon, the voice has three regions, and melody has four affections: slackening, tightening, staying, standing. Those who sing three modes sing Lydian, Phrygian, Dorian; those who sing seven add Mixolydian, Hypolydian, Hypophrygian, Hypodorian.

Ἐκκλισις οὖν τί ἐστιν; — Ὅταν ἀπὸ τινος φθόγγου 41

ekklisis then what is when from some note

ἁρμονίας ἀνεθῶσι τρεῖς διέσεις.

of-harmonia are-slackened three dieses

- 42 Ἐκβολὴ δὲ τί ἐστίν; — Ὅταν ἀπό τινος φθόγγου
ekbole and what is when from some note
 ἁρμονίας ἐπιταθῶσι πέντε διέσεις. καὶ ἡ μὲν ἔκλυσις
of-harmonia are-tightened five dieses and the indeed eklysis
 κατὰ ἄνεσιν, ἡ δὲ ἐκβολὴ κατ' ἐπίτασιν συνίσταται.
by slackening the and ekbole by tightening is-constituted
- 43 Εἷδη πόσα φθόγγων; — Τρία.
forms how-many of-notes three
 Τίνα ταῦτα; — Ὑπατοειδῆ, παρυπατοειδῆ, λιχανοειδῆ.
what these hypate-like parhypate-like lichanos-like
 Ὑπατοειδῆ οὖν ποῖον λέγομεν εἶναι; — Τὸν βαρύτερον
hypate-like then what-sort do-we-say to-be the heavier
 τοῦ πυκνοῦ. — Παρυπατοειδῆ δέ; — Τὸν μέσον τοῦ
of-the pyknon parhypate-like and the middle of-the
 πυκνοῦ. — Λιχανοειδῆ δέ; — Τὸν ὀξύτατον τοῦ πυκνοῦ.
pyknon lichanos-like and the sharpest of-the pyknon
- 44 Τόπους δὲ τῆς φωνῆς πόσους λέγομεν εἶναι; — γ. —
regions and of-the voice how-many do-we-say to-be 3
 Τίνας τούτους; — Ὁξύν, μέσον, βαρύν.
what these sharp middle heavy
- 45 Πάθη δὲ τῆς μελωδίας πόσα λέγομεν εἶναι; — δ. —
affections and of-the melody how-many do-we-say to-be 4
 Τίνα ταῦτα; — Ἄνεσιν, ἐπίτασιν, μονήν, στάσιν.
what these slackening tightening staying standing
 Ἄνεσις τί ἐστι; — Κίνησις μελῶν ἀπὸ τοῦ ὀξυτέρου
slackening what is (a)-motion of-melodies from the sharper
 φθόγγου ἐπὶ τὸ βαρύτερον.
note to the heavier
 Ἐπίτασις δὲ τί ἐστίν; — Ἐπίτασις ἐστὶ κίνησις μελῶν
tightening and what is tightening is (a)-motion of-melodies
 ἀπὸ τοῦ βαρυτέρου φθόγγου ἐπὶ τὸ ὀξύτερον.
from the heavier note to the sharper

Μονὴ δὲ τί ἐστιν; — Ὅταν ἐπὶ τοῦ αὐτοῦ φθόγγου
staying and what is when upon the same note
 πλείονες λέξεις μελωδῶνται.

several words are-sung

Στάσις δὲ τί ἐστι; — Στάσις ἐστὶν ὕπαρξις ἐμμελοῦς
standing and what is standing is (the)-subsisting of-a-melodic
 φθόγγου.

note

Οἱ οὖν τοὺς τρεῖς τρόπους ᾄδοντες τίνας ᾄδουσι; — 46
those then the three modes singing what do-they-sing

Λύδιον, φρύγιον, δώριον.

lydian phrygian dorian

Οἱ δὲ τοὺς ἑπτὰ, τίνας; — Μιξολύδιον, λύδιον, φρύγιον,
those and the seven what mixolydian lydian phrygian
 δώριον, ὑπολύδιον, ὑποφρύγιον, ὑποδώριον.

dorian hypolydian hypophrygian hypodorian

5 • THE MODES AND THE MODULATIONS

The modes are ranked by pitch, the Mixolydian highest and the Hypodorian lowest, and Bacchius gives every interval between them. He then defines mode and plaiting, and counts seven modulations — by system, by genus, by mode, by character, by rhythm, by tempo, and by the placing of the rhythm — closing with the definition of modulation itself.

Τούτων ποῖος ὀξύτερος; — Ὁ μιξολύδιος.

of-these which (is)-sharper the mixolydian

Τούτου δὲ ποῖος ἐχόμενος; — Ὁ λύδιος. — Πόσῳ

to-this and which (is)-next the lydian by-how-much

βαρύτερος; — Ἡμιτονίῳ.

heavier by-a-semitone

Τοῦ δὲ λυδίου ποῖος βαρύτερος; — Ὁ φρύγιος. Πόσῳ;
than-the and lydian which (is)-heavier the phrygian by-how-much

— Τόνῳ, τοῦ δὲ μιξολυδίου τριημιτονίῳ.

by-a-tone than-the and mixolydian by-a-three-semitone

Τούτου δὲ ποῖος βαρύτερος; — Δώριος. — Πόσῳ

than-this and which (is)-heavier dorian by-how-much

βαρύτερος; — Τοῦ μὲν φρυγίου τόνῳ, τοῦ δὲ λυδίου

heavier than-the indeed phrygian by-a-tone than-the and lydian

διτόνῳ, τοῦ δὲ μιξολυδίου διὰ τεσσάρων.

by-a-ditone than-the and mixolydian through four

Τούτου δὲ ποῖος βαρύτερος; — Ὑπολύδιος. — Πόσῳ; —

than-this and which (is)-heavier hypolydian by-how-much

Ἡμιτονίῳ. — Τοῦ δὲ φρυγίου πόσῳ; — Τριημιτονίῳ,

by-a-semitone than-the and phrygian by-how-much by-a-three-semitone

τοῦ δὲ λυδίου διὰ τεσσάρων, τοῦ δὲ μιξολυδίου

than-the and lydian through four than-the and mixolydian

τριτόνῳ.

by-a-tritone

Τοῦ δὲ ὑπολυδίου ποῖος βαρύτερος; — Ὑποφρύγιος.

than-the and hypolydian which (is)-heavier hypophrygian

— Πόσῳ βαρύτερος; — Τόνῳ, τοῦ δὲ δωρίου

by-how-much heavier by-a-tone than-the and dorian

τριημιτονίῳ, τοῦ δὲ φρυγίου τῷ διὰ τεσσάρων, τοῦ

by-a-three-semitone than-the and phrygian by-the through four than-the

δὲ λυδίου τῷ διὰ πέντε, τοῦ δὲ μιξολυδίου τετρατόνῳ.

and lydian by-the through five than-the and mixolydian by-a-four-tone

Τοῦ δὲ ὑποφρυγίου ποῖος βαρύτερος; — Ὑποδώριος.

than-the and hypophrygian which (is)-heavier hypodorian

— Πόσῳ; — Τόνῳ, τοῦ δὲ ὑπολυδίου διτόνῳ, τοῦ

by-how-much by-a-tone than-the and hypolydian by-a-ditone than-the

δὲ δωρίου διὰ τεσσάρων, τοῦ δὲ φρυγίου διὰ

and dorian through four than-the and phrygian through

πέντε, τοῦ δὲ λυδίου τετρατόνω καὶ ἡμιτονίῳ, τοῦ
five than-the and lydian by-a-four-tone and by-a-semitone than-the
 δὲ μιξολυδίου πεντατόνω.

and mixolydian by-a-five-tone

Τρόπος δὲ τί ἐστίν;

48

(a)-mode and what is

Πλοκῆς ἐμμελοῦς σχῆμα.

of-plaiting melodic (a)-figure

Πλοκῆς δὲ μέλος τί ἐστίν; — Ὅτι διὰ τῶν ἔγγιστα 49

of-plaiting and melody what is that-which through the nearest

μελαδεῖται, ὅτε μὲν ἀνιεμένης τῆς μελωδίας, ὅτε

is-sung at-one-time indeed (as-)being-slackened the melody at-another

δὲ ἐπιτεινομένης.

and (as-)being-tightened

Μεταβολὰς οὖν πόσας λέγομεν εἶναι; — ζ. — Τίνας 50

modulations then how-many do-we-say to-be 7 what

ταύτας; — Συστηματικὴν, γενικὴν, κατὰ τρόπον, κατὰ

these systematic generic by mode by

ἦθος, κατὰ ῥυθμὸν, κατὰ ῥυθμοῦ ἀγωγὴν, κατὰ ῥυθμοποιΐας

character by rhythm by of-rhythm tempo by of-rhythm-making

θέσιν.

position

Συστηματικὴ ποία ἐστίν; — Ὅταν ἐκ τοῦ ὑποκειμένου 51

systematic of-what-sort is when from the underlying

συστήματος εἰς ἕτερον σύστημα ἀναχωρῇ ἢ μελωδία

system into another system withdraws the melody

ἐτέραν μέσῃν κατασκευάζουσα.

another mese establishing

Γενικὴ δὲ ποία ἐστίν; — Ὅταν ἐκ γένους εἰς γένος, 52

generic and of-what-sort is when from genus into genus

οἷον ἐξ ἀρμονίας εἰς χρῶμα ἢ εἰς τοιοῦτόν τι μετέλθῃ.

such-as from harmonia into chroma or into such some it-passes

- 53 Ἡ δὲ κατὰ τρόπον ποία; — Ὅταν ἐκ λυδίου εἰς
the and by mode of-what-sort when from lydian into
 φρύγιον ἢ εἰς τινα τῶν λοιπῶν μεταχωρήσῃ.
phrygian or into some of-the remaining it-shifts
- 54 Ἡ δὲ κατὰ ἦθος; — Ὅταν ἐκ ταπεινοῦ εἰς μεγαλοπρεπὲς,
the and by character when from lowly into magnificent
 ἢ ἐξ ἡσύχου καὶ σύννου εἰς παρακεκινηκὸς γένηται.
or from quiet and pensive into excited it-becomes
- 55 Ἡ δὲ κατὰ ρυθμὸν ποία; — Ὅταν ἐκ χορείου εἰς
the and by rhythm of-what-sort when from choree into
 δάκτυλον ἢ εἰς τινα τῶν λοιπῶν μεταβῇ.
dactyl or into some of-the remaining it-changes
- 56 Ἡ δὲ κατὰ ρυθμοῦ ἀγωγὴν ποία; — *** Ὅταν
the and by of-rhythm tempo of-what-sort (lacuna) when
 ρυθμὸς ἀπ' ἀρσεως ἢ θέσεως γένηται.
(a)-rhythm from arsis or thesis arises
- 57 Ἡ δὲ κατὰ ρυθμοποιίας θέσιν ποία; — *** Ὅταν
the and by of-rhythm-making position of-what-sort (lacuna) when
 ὅλος ρυθμὸς κατὰ βάσιν ἢ κατὰ διποδίαν βαίνηται.
(a)-whole rhythm by (a)-step or by (a)-dipody be-stepped
- 58 Μεταβολὴ δὲ τί ἐστίν; Ἐτεροίωσις τῶν ὑποκειμένων, ἢ
modulation and what is (an)-altering of-the underlying(-things) or
 καὶ ὁμοίου τινὸς εἰς ἀνόμοιον τόπον μετάθεσις.
also of-a-like(-thing) some into (an)-unlike place (a)-transposition

6 • DISCORD, UNISON, AND THE MESE

Discord is when the melody belongs to one of two unlike notes struck together, unison when neither is higher, paraphony when neither prevails. A diagram sets before the eyes what the ear finds hard to catch. The mese is defined several ways — the highest note of the middle of three conjoined tetrachords, or the note lying between a tone and an incomposite ditone — and the two senses of “tone” are distinguished.

Διαφωνία δὲ τί ἐστιν; — Ὅταν δύο φθόγων ἀνομοίων 59
discord and what is when of-two notes unlike
 τυπτομένων τοῦ βαρυτέρου φθόγου τὸ μέλος ὑπάρχει ἢ
being-struck of-the heavier note the melody belongs or
 τοῦ ὀξύτερου.
of-the sharper

Ὄμοφωνία δὲ τί ἐστιν; — Ὅταν ἅμα δύο φθόγοι 60
unison and what is when at-once two notes
 τυπτόμενοι μῆτε ὀξύτεροι μῆτε βαρύτεροι ἀλλήλων
being-struck neither sharper nor heavier than-one-another
 ὑπάρχουσι.
are

Παραφωνία δὲ τί ἐστιν; — *** Ὅταν δύο φθόγων 61
paraphony and what is (lacuna) when of-two notes
 ἀνομοίων τυπτομένων οὐδέν τι μᾶλλον τοῦ βαρυτέρου
unlike being-struck in-no-respect at-all more of-the heavier
 φθόγου ἢ τοῦ ὀξύτερου τὸ μέλος ὑπάρχει.
note or of-the sharper the melody belongs

Διάγραμμα δὲ τί ἐστι; Συστήματος ὑπόδειγμα. ἦτοι 62
(a)-diagram and what is of-a-system (an)-illustration or
 οὕτως· διάγραμμά ἐστι σχῆμα ἐπίπεδον, εἰς ὃ πᾶν γένος
thus (a)-diagram is (a)-figure plane into which every genus
 μελωδεῖται. διαγράμματι δὲ χρῶμεθα, ἵνα τὰ τῇ
is-sung (a)-diagram and we-use so-that the(-things) to-the
 ἀκοῇ δύσληπτα πρὸ ὀφθαλμῶν τοῖς μανθάνουσι φαίνηται.
hearing hard-to-grasp before eyes to-those learning may-appear
 Ποσάχορδόν ἐστι τὸ συνημμένον; — Ἑπτάχορδον. — Τὸ 63
of-how-many-strings is the conjoined seven-stringed the
 δὲ διεξευγμένον; — Ὀκτάχορδον.
and disjoined eight-stringed

- 64 *Σύνθετον διάστημα καθόλου ποῖον λέγομεν εἶναι; —*
composite (an)-interval in-general what-sort do-we-say to-be
Τὸ διαιρούμενον. — Ἀσύνθετον δὲ ποῖον; — Τὸ μὴ
that divided incomposite and what-sort that not
διαιρούμενον.
divided
- 65 *Μέσης δέ φαμεν εἶναι ὅρους· ἥτις τριῶν συνημμένων*
of-mese and we-say to-be (the)-definitions which of-three conjoined
τετραχόρδων τοῦ μέσου ὀξύτατη ἐστίν. οἱ δὲ
tetrachords of-the middle sharpest is the(-others) and
οὕτως· μέση ἐστίν ἡ μεταξὺ τόνου καὶ διτόνου
thus mese is the(-note) between (a)-tone and (a)-ditone
ἀσυνθέτου κειμένη. καὶ ἥτις τριῶν τετραχόρδων ἐξῆς
incomposite lying and which of-three tetrachords successively
κειμένων τοῦ ὀξύτατου φθόγγου ἐστὶ βαρυτέρα τῇ
lying than-the sharpest note is heavier by-the
διὰ τεσσάρων συμφωνία. καὶ ἀφ' ἧς ἐπιτείνεται διὰ δ
through four concord and from which is-tightened through 4
καὶ διὰ ε. καὶ ἀφ' ἧς τόνος καὶ πυκνὸν ἐπιταθήσεται.
and through 5 and from which (a)-tone and (a)-pyknon will-be-tightened
καὶ ἀφ' ἧς ἐστὶ συναφή τε καὶ διάζευξις. καὶ ἀφ' ἧς
and from which is conjunction both and disjunction and from which
ἀνίεται διὰ πασῶν καὶ ἐπιτείνεται διὰ πασῶν.
is-slackened through all and is-tightened through all
- 66 *Ὁ τόνος πόσων διέσεων; — δ. — Πόσων δὲ ἡμιτονίων;*
the tone of-how-many dieses 4 of-how-many and semitones
— β.

Τί πρῶτον στοιχεῖον τῶν κατὰ μουσικῇ; — 67

what (is)-first element of-the(-things) concerning music

Φθόγγος· ὃ ἐστὶ φωνῆς τάσις ἐπὶ μίαν πτώσιν μέλους.

(a)-note which is of-voice (a)-tension upon one falling of-melody

Πᾶς δὲ φθόγγος ἔχει σχῆμα ὄνομα δύναμιν.

every and note has (a)-figure (a)-name (a)-function

Τόνον ἐν μουσικῇ ποσαχῶς λέγομεν ὑπάρχειν; — 68

(a)-tone in music in-how-many-ways do-we-say to-be

Δισσῶς· τὸν μὲν ἐπ' ὀξύτητος, τὸν δὲ ἐπὶ διαστήματος.

doubly one indeed in sharpness the-other and in interval

Ποῖον ἐπ' ὀξύτητος; — Τὸ ᾄδειν ἕτερον ἑτέρου

what-sort in sharpness the to-sing one than-another

ὀξύτερον ἢ βαρύτερον, ἢ ὄργανον ὀργάνου ἡρμόσθαι

sharper or heavier or (an)-instrument than-an-instrument to-be-tuned

βαρύτερον ἢ ὀξύτερον ὥδηποτοῦν διαστήματι.

heavier or sharper by-whatever-you-please interval

Τὸν δὲ ἐπὶ διαστήματος ποῖον; Ὡς μείζων ἢ διὰ ε

the and in interval what-sort by-which greater the through 5

συμφωνία τῆς διὰ τεσσάρων.

concord than-the through four

7 • TUNEFUL AND PEDESTRIAN NOTES

Notes are tuneful, used by singers and players, or pedestrian, used by orators and in conversation; the first have defined intervals, the second do not. The interval is intelligible rather than audible, though some say both. Bacchius then counts the forms of the fourth, fifth, and octave, giving the old names of the seven octave species.

Φθόγγων δὲ πόσα λέγομεν εἶναι γένη; Δύο. τούτων δὲ 69

of-notes and how-many do-we-say to-be genera two of-these and

οὓς μὲν ἐμμελεῖς καλοῦμεν, οὓς δὲ πεζούς.

some indeed melodic we-call others and pedestrian

Ἑμμελεῖς ποιοί εἰσιν; — Οἷς οἱ ᾄδοντες χρῶνται καὶ
melodic what-sort are those-which the singers use and
 οἱ διὰ τῶν ὀργάνων τι ἐνεργοῦντες. τούτου γὰρ
those through the instruments something performing this for
 μὴ ὑπάρχοντος ἀδύνατόν τι τῶν κατὰ μουσικὴν
not being-present impossible anything of-the(-things) concerning music
 δειχθῆναι.

to-be-shown

Πεζοὶ δὲ ποιοί εἰσιν; Οἷς οἱ ῥήτορες χρῶνται καὶ
pedestrian and what-sort are those-which the orators use and
 οἷς αὐτοὶ πρὸς ἀλλήλους λαλοῦμεν. καὶ οἱ μὲν
those-in-which we-ourselves toward one-another talk and the indeed
 ἑμμελεῖς ὠρισμένα ἔχουσι τὰ διαστήματα, οἱ δὲ πεζοὶ
melodic defined have the intervals the and pedestrian
 ἀόριστα.

undefined

- 70 Φθόγγων δὲ πόσα λέγομεν εἶδη; — Τρία. — Τίνα
of-notes and how-many do-we-say forms three what
 ταῦτα; Ἐσχατον, μέσον, ἡγούμενον.

these last middle leading

- 71 Τῶν συμφωνιῶν εἶδη πόσα; Τρία. Τίνα ταῦτα; — Ἀπ'
of-the concords forms how-many three what these from
 ἐσχάτου ἐπὶ ἔσχατον, ἀπὸ μέσου ἐπὶ μέσον, ἀφ' ἡγουμένου
last to last from middle to middle from leading
 ἐπὶ ἡγούμενον.

to leading

- 72 Αὐτὸ οὖν τὸ διάστημα νοητὸν ἐστὶν ἢ ἀκουστόν; —
itself then the interval intelligible is or audible
 Νοητὸν. εἰ γὰρ ἦν ἀκουστόν, καὶ ὁ ιδιώτης ἀκούων
intelligible if for it-were audible also the layman hearing
 αὐλητῶν ἢ ψαλτῶν ἢ ὠδῶν ἥδει ἂν τί ἐστι τὸ
aulos-players or harpers or singers would-know — what is the

διάστημα. — Κατ' ἐνίους δὲ νοητὸν καὶ ἀκουστὸν
interval according-to some and intelligible and audible

δοκεῖ εἶναι· ἀδύνατον γάρ ἐστι νοῆσαι μὴ ἀκούσαντα.

it-seems to-be impossible for it-is to-conceive not having-heard

Τίνι οὖν γνωστόν ἐστι μεγέθει; — Τόνῳ ἡμιτονίῳ, 73

by-what then knowable is (it)-in-magnitude by-a-tone by-a-semitone

ὀξύτητι βαρύτητι.

by-sharpness by-heaviness

Πόσα οὖν ἐστι τέλεια συστήματα ἐν τῷ ἀμεταβόλῳ 74

how-many then are complete systems in the unmodulating

συστήματι; — β. — Τίνα ταῦτα; — Συνημμένον τε

system 2 what these conjoined both

καὶ διεξευγμένον. — Τούτων οὖν διαφοραὶ τίνες; — Τοῦ

and disjoined of-these then differences what of-the

μὲν συνημμένον διὰ πασῶν καὶ διὰ τεσσάρων, τοῦ

indeed conjoined through all and through four of-the

δὲ διεξευγμένου διὰ πασῶν καὶ διὰ πέντε.

and disjoined through all and through five

Τετραχόρδων δὲ ἐστὶν εἶδη πόσα; — Τρία. ἐν τῷ 75

of-tetrachords and are forms how-many three in the

διατόνῳ πρῶτον μὲν οὐ τὸ ἡμιτόνιον ἐπὶ τὸ βαρύ,

diatonic first indeed of-which the semitone at the heavy

δεύτερον οὐ ἐπὶ τὸ ὀξύ, τρίτον δὲ οὐ περιέχεται.

second of-which at the sharp third and of-which it-is-enclosed

Τοῦ δὲ διὰ πέντε τέσσαρά ἐστιν εἶδη. πρῶτον μὲν οὐ 76

of-the and through five four are forms first indeed of-which

πρῶτος ὁ τόνος ἐστὶν ἐπὶ τὸ ὀξύ, οἷον τὸ ὑπάτης καὶ

first the tone is at the sharp such-as that of-hypate and

παραμέσης· δεύτερον δὲ οὐ δεύτερος, τὸ παρυπάτης καὶ

of-paramese second and of-which second that of-parhypate and

τρίτης· τρίτον οὗ τρίτος, τὸ λιχανοῦ καὶ παρανήτης·
of-trite third of-which third that of-lichanos and of-paranete

τέταρτον οὗ τέταρτος, οἶον τὸ μέσης καὶ νήτης.
fourth of-which fourth such-as that of-mese and of-nete

- 77 Τοῦ δὲ διὰ πασῶν εἶδη ἐστὶν ἑπτὰ. πρῶτον μὲν οὗ
of-the and through all forms are seven first indeed of-which
 πρῶτος ἐπὶ τὸ ὀξύ ὁ τόνος, οἶον τὸ ὑπάτης ὑπάτων
first at the sharp the tone such-as that of-hypate of-the-lowest
 καὶ παραμέσης, ἐκαλεῖτο δὲ ὑπὸ τῶν ἀρχαίων μιξολύδιον.
and of-paramese it-was-called and by the ancients mixolydian
 δεύτερον δὲ οὗ δεύτερος ἐπὶ τὸ ὀξύ, οἶον τὸ παρυπάτης
second and of-which second at the sharp such-as that of-parhypate
 ὑπάτων καὶ τρίτης διεzeugμένων, ἐκαλεῖτο δὲ λύδιον. τρίτον
of-the-lowest and of-trite of-the-disjoined it-was-called and lydian third
 οὗ τρίτος, οἶον τὸ λιχανοῦ ὑπάτων καὶ παρανήτης,
of-which third such-as that of-lichanos of-the-lowest and of-paranete
 ἐκαλεῖτο δὲ φρύγιον. τέταρτον οὗ τέταρτος, οἶον τὸ
it-was-called and phrygian fourth of-which fourth such-as that
 ὑπάτης μέσων καὶ νήτης, ἐκαλεῖτο δὲ δώριον. πέμπτον
of-hypate of-the-middle and of-nete it-was-called and dorian fifth
 οὗ πέμπτος, οἶον τὸ παρυπάτης καὶ τρίτης ὑπερβολαίων,
of-which fifth such-as that of-parhypate and of-trite of-the-topmost
 ἐκαλεῖτο δὲ ὑπολύδιον. ἕκτον οὗ ἕκτος, οἶον τὸ λιχανοῦ
it-was-called and hypolydian sixth of-which sixth such-as that of-lichanos
 καὶ παρανήτης ὑπερβολαίων, ἐκαλεῖτο δὲ ὑποφρύγιον.
and of-paranete of-the-topmost it-was-called and hypophrygian
 ἑβδομον δὲ οὗ ἑβδομος, οἶον τὸ μέσης καὶ νήτης
seventh and of-which seventh such-as that of-mese and of-nete
 ὑπερβολαίων, ἐκαλεῖτο δὲ ὑποδώριον καὶ κοινὸν καὶ λοκρισί.
of-the-topmost it-was-called and hypodorian and common and locrian
 αἱ οὖν λιχανοὶ καὶ αἱ παρανήται ἰσοδυναμοῦσι ταῖς
the then lichanoi and the paranetai are-of-equal-function with-the

διατόνοις. τοσαῦτα μὲν οὖν ἐστὶ τῶν συμφωνιῶν τὰ εἶδη
diatonoī so-many indeed then are of-the concords the forms
 ἐν τῇ μουσικῇ τέχνῃ, δι' ὧν πᾶσα μελοποιία συνίσταται.
in the musical art through which every melody-making is-constituted
 Μέλος δὲ τί ἐστι; — Τὸ ἐκ φθόγγων καὶ διαστημάτων 78
melody and what is that from notes and intervals
 καὶ χρόνων συγκείμενον.
and times composed
 Γένος δέ; — Μέλους ἦθος καθολικόν τι παρεμφαῖνον, 79
(a)-genus and of-melody (a)-character universal some showing
 ἔχον ἐν ἑαυτῷ διαφόρους ἰδέας.
having in itself differing aspects

8 • THE SEVEN POSITIONS OF TETRACHORDS

Tetrachords stand in seven positions: conjunction, disjunction, sub-disjunction, super-conjunction, sub-conjunction, para-disjunction, hyper-disjunction. Three are undefined and four defined — undefined because in the unmodulating system the same melody can arise in more than one place. Each is defined and located, and the four causes of modulation named: place, tone, system, melody-making.

Θέσεις δὲ τετραχόρδων οἷς τὸ μέλος ὀρίζεται εἰσὶν 80
positions and of-tetrachords by-which the melody is-defined are
 ἑπτὰ· συναφὴ διάζευξις ὑποδιάζευξις ἐπισυναφὴ ὑποσυναφὴ
seven conjunction disjunction sub-disjunction super-conjunction sub-conjunction
 παραδιάζευξις ὑπερδιάζευξις. Τούτων δὲ ὠρισμένοι μὲν
para-disjunction hyper-disjunction of-these and defined indeed
 τέσσαρες, ἀόριστοι δὲ τρεῖς. ἀόριστοι μὲν οὖν εἰσιν ἡ τε
four undefined and three undefined indeed then are the both
 συναφὴ καὶ ἡ διάζευξις καὶ ἡ ὑποδιάζευξις, ὠρισμένοι δὲ
conjunction and the disjunction and the sub-disjunction defined and

ἢ τε ἐπισυναφή καὶ ἢ ὑποσυναφή καὶ ἢ παραδιάζευξις
the both super-conjunction and the sub-conjunction and the para-disjunction
 καὶ ἢ ὑπερδιάζευξις. τὴν δὲ διαφορὰν ἔχουσιν αἱ ἀόριστοι
and the hyper-disjunction the and difference have the undefined
 θέσεις τῶν τετραχόρδων παρὰ τὰς ὠρισμένας τήνδε· ὅταν
positions of-the tetrachords beside the defined this-here when
 ἐν τῷ ἀμεταβόλῳ συστήματι τὸ αὐτὸ μέλος δύνηται ἐφ'
in the unmodulating system the same melody can upon
 ἐτέρου τόπου καὶ ἄλλου γίνεσθαι, τὸ δὲ τοιοῦτον μέλος
another place and another to-arise the indeed such melody
 ἀόριστον καλεῖται.
undefined is-called

- 81 Συναφή τί ἐστι; Συναφή μὲν οὖν ἐστίν, ὅταν δυοῖν
conjunction what is conjunction indeed then is when of-two
 τετραχόρδων ἐξῆς κειμένων ἐπίκεινος φθόγγος ὢν τοῦ
tetrachords successively lying (a)-shared note being than-the
 μὲν βαρυτέρου τετραχόρδου ὀξύτερος ἢ τῇ διὰ δ,
indeed heavier tetrachord sharper be by-the through 4
 τοῦ δὲ ὀξύτερου βαρύτερος ἢ τε διὰ δ συμφωνία
than-the and sharper heavier and both through 4 concord
 καὶ τὰ εἶδη τῶν φθόγγων πρὸς ἀλλήλα τὴν διὰ
and the forms of-the notes toward one-another the through
 τεσσάρων συμφωνίαν ἀποτελῇ. συναφαὶ δὲ εἰσι τρεῖς.
four concord produce conjunctions and are three
 συνήπται γὰρ τῷ ὑπάτων τὸ μέσων καὶ τῷ μέσων
has-been-joined for to-the of-the-lowest the of-the-middle and to-the of-the-middle
 τὸ συνημμένων καὶ τῷ διεξυγμένων τὸ ὑπερβολαίων.
the of-the-conjoined and to-the of-the-disjoined the of-the-topmost
 τὸ μὲν οὖν ὑπάτων καὶ μέσων συνάπτει ἢ ὑπάτη
the indeed then of-the-lowest and of-the-middle joins the hypate
 μέσων κοινὸς ὢν αὐτῶν φθόγγος· τὸ δὲ μέσων καὶ
of-the-middle common being of-them note the and of-the-middle and

συνημμένων κατὰ τὴν αὐτὴν ἀναλογίαν ἢ μέση συνάπτει,
of-the-conjoined by the same proportion the mese joins
 ὡς ὁμοίως δὲ καὶ τὸ διεξυγμένων καὶ τὸ ὑπερβολαίων
as likewise and also the of-the-disjoined and the of-the-topmost
 συνάπτει ἢ νήτῃ διεξυγμένων.

joins the nete of-the-disjoined

Τί ἐστι διάζευξις; Διάζευξις δέ ἐστιν, ὅταν δυοῖν
what is disjunction disjunction and is when of-two
 τετραχόρδων τόνος ἀνὰ μέσον ἥ καὶ τὰ εἶδη τῶν
tetrachords (a)-tone in (the)-middle be and the forms of-the
 φθόγγων κατὰ τὴν διὰ ε συμφωνῇ πρὸς ἄλληλα. διαζεύξεις
notes by the through 5 concord toward one-another disjunctions
 δέ εἰσι δύο. διέζευκται γὰρ τὸ μέσων τετράχορδον ἀπὸ
and are two has-been-disjoined for the of-the-middle tetrachord from
 τοῦ διεξυγμένων καὶ τὸ συνημμένων ἀπὸ τοῦ ὑπερβολαίων.

the of-the-disjoined and the of-the-conjoined from the of-the-topmost

Ὑποδιάζευξις τί ἐστιν; — Ὑποδιάζευξις δέ ἐστιν, ὅταν
sub-disjunction what is sub-disjunction and is when

δύο τετραχόρδων μεταξὺ τεθῇ ἢ διὰ ε συμφωνία
of-two tetrachords between be-placed the through 5 concord
 καὶ οἱ φθόγγοι κατὰ τὸ διὰ πασῶν συμφωνῶσι πρὸς
and the notes by the through all concord toward
 ἀλλήλους. ὑποδιαζεύξεις δέ εἰσι δύο. ὑποδιέζευκται γὰρ
one-another sub-disjunctions and are two has-been-sub-disjoined for
 τὸ ὑπάτων τετράχορδον ἀπὸ τοῦ διεξυγμένων καὶ τὸ
the of-the-lowest tetrachord from the of-the-disjoined and the
 μέσων ἀπὸ τοῦ ὑπερβολαίων.

of-the-middle from the of-the-topmost

- 84 Ἐπισυναφή τί ἐστιν; — Ἐπισυναφή δέ ἐστιν, ὅταν τρία
super-conjunction what is super-conjunction and is when three
 τετράχορδα κατὰ συναφήν ἐξῆς μελωδηθῇ, οἷον ὑπάτων
tetrachords by conjunction successively be-sung such-as of-the-lowest
 μέσων συνημμένων.
of-the-middle of-the-conjoined
- 85 Ὑποσυναφή τί ἐστιν; — Ὑποσυναφή δέ ἐστιν, ὅταν δύο
sub-conjunction what is sub-conjunction and is when of-two
 τετραχόρδων ἀνὰ μέσον γένηται ἢ διὰ δ συμφωνία
tetrachords in (the)-middle arise the through 4 concord
 καὶ οἱ ὁμογενεῖς φθόγγοι κατὰ τοὺς ε τόνους συναφθῶσι
and the same-genus notes by the 5 tones be-joined
 πρὸς ἀλλήλους. ὑποσυνήπται δὲ τὸ ὑπάτων τετράχορδον
toward one-another has-been-sub-joined and the of-the-lowest tetrachord
 τῷ συνημμένων.
to-the of-the-conjoined
- 86 Παραδιάζευξις τί ἐστι; — Παραδιάζευξις δέ ἐστιν,
para-disjunction what is para-disjunction and is
 ὅταν τὰ εἶδη τῶν φθόγων τονιαῖον διάστημα πρὸς
when the forms of-the notes (a)-tone-sized interval toward
 ἄλληλα ἀποτελῇ. παραδιέζευκται δὲ τὸ συνημμένων τῷ
one-another produce has-been-para-disjoined and the of-the-conjoined with-the
 διεξευγμένων.
of-the-disjoined
- 87 Ὑπερδιάζευξις δέ ἐστιν, ὅταν δυοῖν τετραχόρδων ἀνὰ
hyper-disjunction and is when of-two tetrachords in
 μέσον ὑπάρχη ἢ διὰ πασῶν συμφωνία. ὑπερδιέζευκται
(the)-middle subsists the through all concord has-been-hyper-disjoined
 δὲ τὸ ὑπάτων τετράχορδον ἀπὸ τοῦ ὑπερβολαίων.
and the of-the-lowest tetrachord from the of-the-topmost
- 88 Αἰτίας οὖν πόσας λέγεις εἶναι; — δ.
causes then how-many do-you-say to-be 4

Τίνας ταύτας; Τόπον, τόνον, σύστημα, μελοποιίαν. ἐνίοτε
what these place tone system melody-making sometimes
 μὲν πάντα ταῦτα αἰτιά εἰσι μεταβολῆς, ἐνίοτε δὲ τὸ
indeed all these causes are of-modulation sometimes and the
 πρῶτον ἢ τὸ δεύτερον ἢ τὸ τρίτον.
first or the second or the third

9 · RHYTHM, FEET, AND THE TEN RHYTHMS

Syllable, word, step, and cadence are defined, and rhythm receives six definitions — Bacchius' own and those of Phaedrus, Aristoxenus, Nicomachus, Leophantus, and Didymus. Time is short, long, or irrational; arsis is the raised foot and thesis the placed one. Ten rhythms are listed with their compositions and an example of each: hegemon, iambus, choreus, anapaest, orthios, spondee, paeon, bacchius, dochmius, enoplios.

Μέτρων δὲ καὶ ῥυθμῶν συμμίκτων πάντα μετρεῖται τὰ 89
of-meters and also of-rhythms mixed all are-measured the
 εἶδη συλλαβαῖς ποσὶ καταλήξεσι.

forms by-syllables by-feet by-cadences

Συλλαβὴ τί ἐστι; — Σύλληψις στοιχείων δύο ἢ 90
(a)-syllable what is (a)-taking-together of-elements two or
 πλειόνων, πάντως ἐνὸς τῶν φωνηέντων παραλαμβανομένου.

more always one of-the vowels being-included

Λέξις τί ἐστι; — Φωνὴ ἐγγράμματος μέρος λόγου
(a)-word what is (a)-sound lettered (a)-part of-speech

παριστώσα.

presenting

Βάσις δὲ τί ἐστι; — Σύνταξις δύο ποδῶν ἢ ποδὸς 91
(a)-step and what is (an)-arrangement of-two feet or of-a-foot
 καὶ καταλήξεως.

and of-a-cadence

- 92 Κατάληξι δὲ τί ἐστιν; — Ἡ παντὸς ἐλλείποντος μέτρου
 (a)-cadence and what is the of-every deficient meter
 τελευταία συλλαβή.
 final syllable
- 93 ῥυθμὸς δὲ τί ἐστι; — Χρόνου καταμέτρησις μετὰ
 rhythm and what is of-time (a)-measuring with
 κινήσεως γινομένη ποιᾶς τινος. κατὰ δὲ Φαῖδρον
 motion arising of-some-kind or-other according-to and Phaedrus
 ῥυθμὸς ἐστι συλλαβῶν κειμένων πως πρὸς ἀλλήλας
 rhythm is of-syllables lying somehow toward one-another
 ἔμμετρος θέσις. κατὰ δὲ Ἀριστόξενον χρόνος διηρημένος
 measured placement according-to and Aristoxenus time divided
 ἐφ' ἐκάστω τῶν ῥυθμίζεσθαι δυναμένων. κατὰ
 upon each of-the(-things) to-be-rhythmed being-able according-to
 δὲ Νικόμαχον χρόνων εὐτακτος κίνησις. κατὰ δὲ
 and Nicomachus of-times (a)-well-ordered motion according-to and
 Λεόφαντον χρόνων σύνθεσις κατὰ ἀναλογίαν τε καὶ
 Leophantus of-times (a)-composition by proportion both and
 συμμετρίαν πρὸς ἑαυτοὺς θεωρουμένων. κατὰ δὲ Δίδυμον
 symmetry toward themselves considered according-to and Didymus
 φωνῆς ποιᾶς σχηματισμός. — ἡ μὲν οὖν φωνῇ
 of-voice of-a-certain-kind (a)-shaping the indeed then voice
 ποίως σχηματισθεῖσα ῥυθμὸν ἀποτελεῖ, γίνεται δὲ οὗτος
 in-a-certain-way shaped rhythm produces arises and this
 ἢ περὶ λέξιν ἢ περὶ μέλος ἢ περὶ σωματικὴν κίνησιν.
 either about word or about melody or about bodily motion
- 94 Συμπλέκεται δὲ οὗτος ἐκ χρόνων πόσων; — Τριῶν.
 is-woven and this from times how-many of-three
 — Ποίων τούτων χρόνων; — Βραχυσυνλλάβου τε καὶ
 of-what-sort these times of-short-syllabled both and
 μακροῦ καὶ ἀλόγου.
 of-long and of-irrational

Βραχὺς ποῖός ἐστιν; — Ὁ ἐλάχιστος καὶ εἰς μερισμοὺς 95
short of-what-sort is the least and into divisions

μὴ πίπτων.

not falling

Μακρὸς δὲ ποῖος; — Ὁ τούτου διπλάσιος.

long and of-what-sort the of-this double

Ἄλογος δὲ ποῖος; — Ὁ τοῦ μὲν βραχέος μακρότερος,

irrational and of-what-sort the than-the indeed short longer

τοῦ δὲ μακροῦ ἐλάσσων ὑπάρχων.

than-the and long smaller being

Ὅπόσω δὲ ἐστιν ἐλάσσων ἢ μείζων διὰ τὸ λόγῳ εἶναι

by-how-much and it-is smaller or greater through the in-ratio to-be

δυσασπόδοτον, ἐξ αὐτοῦ τοῦ συμβεβηκότος ἄλογος ἐκλήθη.

hard-to-render from itself the accident irrational it-was-called

Χρόνων δὲ συμπλοκαὶ ἐν ῥυθμοῖς πόσαι γίνονται; — 96

of-times and weavings in rhythms how-many arise

Τέσσαρες.

four

Συμπλέκεται γὰρ βραχὺς βραχεῖ, μακρὸς μακρῷ, μακρὸς

is-woven for short with-short long with-long long

βραχεῖ, ἄλογος μακρῷ.

with-short irrational with-long

Πᾶς δὲ φθόγγος ἔχει σχῆμα, ὄνομα, δύναμιν. — Σχήμα 97

every and note has (a)-shape (a)-name (a)-function (a)-shape

τί ἐστιν; — Ὁ τὸ στοιχεῖον σημαίνων τύπος. — Ὅνομα

what is the the element signifying mark (a)-name

δὲ τί ἐστι; — Τὸ κατὰ τοῦ σχήματος τιθέμενον. Δύναμις

and what is that upon the shape placed (a)-function

δέ ἐστιν ἡ ἐκάστου τῶν φθόγγων ἐν ὀργάνοις ἐκφώνησις.

and is the of-each of-the notes in instruments utterance

- 98 Ἄρσιν ποίαν λέγομεν εἶναι; — Ὅταν μετέωρος ἦ ὁ
 (an)-arsis of-what-sort do-we-say to-be when raised be the
 πούς, ἡνίκα ἂν μέλλωμεν ἐμβαίνειν. Θέσιν δὲ ποίαν;
 foot when ever we-are-about to-step-in (a)-thesis and of-what-sort
 — Ὅταν κείμενος. Τὸν δὲ ἀνὰ μέσον τῆς ἄρσεως καὶ
 when lying the and in (the)-middle of-the arsis and
 τῆς θέσεως χρόνον οὐκ ἄξιον ἐπιζητεῖν ὥς ὄντα τινὰ
 of-the thesis time not worth to-see as being some
 τῶν κατὰ μέρος· διὰ γὰρ τὴν βραχύτητα λανθάνει
 of-the(-things) by part through for the shortness it-escapes
 καὶ τὴν ὄψιν καὶ τὴν ἀκοήν.
 both the sight and the hearing
 πόδα δὲ καὶ σύνθεσιν στοιχείων ἐλαχίστην δεικνύουσιν.
 (a)-foot and also (a)-composition of-elements least they-show
- 99 Τῶν δὲ ρυθμῶν εἰσιν οἱ μὲν ἀπλοῖ, οἱ δὲ συμπεπλεγμένοι.
 of-the and rhythms are the some simple the others compounded
- 100 Πόσοι οὖν εἰσι ρυθμοί; — Δέκα. — Τίνες οὗτοι; —
 how-many then are rhythms ten which these
 Ἡγεμῶν ἱαμβος χορείος ἀνάπαιστος ὀρθίος σπονδείος
 hegemon iambus choreus anapaest orthios spondee
 παιὰν βακχείος δόχμιος ἐνόπλιος. — Τούτων ἀπλοῖ
 paean bacchius dochmius enoplios of-these simple
 πόσοι; — Ἑξ· ἡγεμῶν ἱαμβος χορείος ἀνάπαιστος ὀρθίος
 how-many six hegemon iambus choreus anapaest orthios
 σπονδείος. — Συμπεπλεγμένοι δὲ πόσοι; — Τέσσαρες·
 spondee compounded and how-many four
 παιὰν βακχείος δόχμιος ἐνόπλιος.
 paean bacchius dochmius enoplios
- 101 Τῶν οὖν ἀπλῶν ποῖος ἄρχεται; — Πρῶτος ἡγεμών.
 of-the then simple which begins first hegemon
 σύγκειται δὲ ἐκ δύο χρόνων ἐλαχίστων. ἄρχεται δὲ ἀπὸ
 is-composed and from two times least begins and from

ἄρσεως καὶ ἔχει ἐν αὐτῇ ἓνα τὸν ἐλάχιστον χρόνον, ὁμοίως
arsis and has in it one the least time likewise

καὶ ἐν τῇ θέσει· ὑπόδειγμα δὲ αὐτοῦ λέγομεν λόγος.

also in the thesis (an)-example and of-it we-say logos

Δεύτερος δὲ τίς; — Ἰαμβος. σύγκειται δὲ ἐκ βραχέος

second and which iambus is-composed and from (a)-short

καὶ μακροῦ χρόνου, ἄρχεται δὲ ἀπὸ ἄρσεως, οἷον θεῶν.

and long time begins and from arsis such-as of-gods

Τρίτος δὲ ποῖος; — Χορείος· συνέστηκε δὲ ἐκ μακροῦ

third and of-what-sort choreus is-composed and from (a)-long

καὶ βραχέος χρόνου, ἄρχεται δὲ ἀπὸ θέσεως, οἷον πῶλος.

and short time begins and from thesis such-as colt

Τέταρτος δὲ ἀνάπαιστος ἐκ δύο βραχειῶν ἄρσεων καὶ

fourth and anapaest from two short arses and

μακρᾶς θέσεως, οἷον βασιλεύς.

(a)-long thesis such-as king

Πέμπτος δὲ ὀρθίος ἐξ ἀλόγου ἄρσεως καὶ μακρᾶς

fifth and orthios from (an)-irrational arsis and (a)-long

θέσεως, οἷον ὀργή.

thesis such-as anger

Ἑκτος δὲ σπονδείος ἐκ μακρᾶς ἄρσεως καὶ θέσεως

sixth and spondee from (a)-long arsis and (a)-thesis

μακρᾶς, οἷον σπένδω.

long such-as I-pour-libation

Ἑβδομος παιὰν, σύνθετος ἐκ χορείου καὶ ἡγεμόνος, οἷον

seventh paean composite from choreus and hegemon such-as

εὐπλόκαμε.

fair-tressed(-one)

Ὀγδοος δὲ βακχεῖος ἀφ' ἡγεμόνος καὶ σπονδείου, οἷον

eighth and bacchius from hegemon and spondee such-as

θεοδώρω.

for-Theodorus

Ἑνατος δὲ δόχμιος ἐξ ἰάμβου καὶ ἀναπαίστου καὶ
ninth and dochmius from iambus and anapaest and
 παιᾶνος τοῦ κατὰ βάσιν, οἷον ἔμενεν ἐκ Τροίας χρόνον.
paean the by step such-as he-remained from Troy time
 Δέκατος δὲ ἐνόπλιος ἐξ ἰάμβου καὶ ἡγεμόνος καὶ χορείου
tenth and enoplios from iambus and hegemon and choreus
 καὶ ἰάμβου, οἷον ὁ τὸν πίτυος στέφανον.
and iambus such-as the(-one) the of-pine crown

PS.-PLUTARCH

ΠΕΡΙ ΜΟΥΣΙΚΗΣ

On Music

Phocion's wife said that her husband's generalships were her ornament. The author answers that his ornament is his teacher's zeal for learning, and that it is shared by the whole household: a general's success saves a few soldiers or a single city from an immediate danger and makes no one better, while education is the substance of happiness and useful to the whole human race.

ἡ μὲν Φωκίωνος τοῦ χρηστοῦ γυνὴ κόσμον αὐτῆς 1
the indeed of-Phocion the good wife (an)-adornment of-herself
 ἔλεγεν εἶναι τὰ Φωκίωνος στρατηγήματα· ἐγὼ δὲ
used-to-say to-be the of-Phocion generalships I and
 κόσμον ἐμὸν οὐ μόνον ἴδιον, ἀλλὰ γὰρ καὶ κοινὸν
(an)-adornment mine not only private but for also common
 τῶν οἰκείων πάντων ἡγοῦμαι τὴν τοῦ ἐμοῦ διδασκάλου
of-the household all I-consider the of-the my teacher
 περὶ λόγους σπουδὴν. τῶν μὲν γὰρ στρατηγῶν τὰ
about words zeal of-the indeed for generals the
 ἐπιφανέστατα κατορθώματα σωτηρίας μόνον οἶδαμεν τῆς
most-brilliant successes of-safety only we-know the
 ἐκ τῶν παραχρήμα κινδύνων αἷτια γιγνόμενα στρατιώταις
from the immediate dangers causes becoming for-soldiers
 ὀλίγοις ἢ πόλει μιᾷ ἢ καὶ ἐνί τινι ἔθνει, βελτίους
few or for-a-city one or even-for one some nation better
 δ' οὐδαμῶς ποιοῦντα οὔτε τοὺς στρατιώτας οὔτε τοὺς
and in-no-way making either the soldiers or the
 πολίτας, ἀλλ' οὐδὲ τοὺς ὁμοεθνεῖς· τὴν δὲ παιδείαν,
citizens but not-even the fellow-countrymen the and education
 οὐσίαν εὐδαιμονίας οὐσαν αἰτίαν τ' εὐβουλίας, οὐ μόνον
(the)-substance of-happiness being (a)-cause and of-good-counsel not only
 ἔστιν εὑρεῖν ἢ οἴκῳ ἢ πόλει ἢ ἔθνει χρησίμην,
it-is to-find either for-a-house or for-a-city or for-a-nation useful

ἀλλὰ παντὶ τῷ τῶν ἀνθρώπων γένει. ὅσω οὖν ἡ
but for-all the of-the men race by-how-much then the
 ἐκ παιδείας ὠφέλεια μείζων πάντων στρατηγημάτων,
from education benefit greater than-all generalships
 τοσοῦτω καὶ ἡ περὶ αὐτῆς μνήμη ἀξία σπουδῆς.
by-so-much also the about it memory worthy of-zeal

2 · THE BANQUET AT THE KRONIA

On the second day of the Kronia, Onesicrates invites men who know music to dinner, among them Soterichus of Alexandria and Lysias. He puts off the question of what causes the human voice as too sober for a feast, and asks instead the questions the dialogue will answer: who first used music, what was added to it afterward, who became famous in it, and what the art is good for.

- 2 τῇ γοῦν δευτέρα τῶν Κρονίων ἡμέρα ὁ καλὸς
on-the accordingly second of-the Kronia day the fair
 Ὀνησικράτης ἐπὶ τὴν ἐστίασιν ἄνδρας μουσικῆς ἐπιστήμονας
Onesicrates to the banquet men of-music knowing
 παρακεκλήκει· ἦσαν δὲ Σωτήριχος Ἀλεξανδρεὺς καὶ
had-invited were and Soterichus (an)-Alexandrian and
 Λυσίας, εἰς τις τῶν σύνταξιν παρ' αὐτοῦ λαμβανόντων.
Lysias one certain of-those (a)-salary from him receiving
 ἐπεὶ δὲ τὰ νομιζόμενα συντετέλεστο τὸ μὲν αἴτιον τῆς
when and the customary(-rites) had-been-completed the indeed cause of-the
 ἀνθρώπου φωνῆς ἔφη ὅ τί πότε ἔστιν, ὦ ἐταῖροι,
human voice he-said what ever soever is O comrades
 νῦν ἐπιζητεῖν οὐ συμποτικόν· σχολῆς γὰρ νηφαλιωτέρας
now to-seek not convivial(-is-it) of-leisure for more-sober
 δεῖται τὸ θεώρημα· ἐπεὶ δ' ὀρίζονται τὴν φωνὴν οἱ
needs the inquiry since and define the voice the

ἄριστοι γραμματικοὶ ἀέρα πεπληγμένον αἰσθητὸν ἀκοῇ,
best grammarians air struck perceptible by-hearing
 ἐτυγχάνομέν τε χθὲς ἐζητηκότες περὶ γραμματικῆς,
we-happened and yesterday having-inquired about grammar
 ὡς τέχνης ἐπιτηδεῖν γράμμασι τὰς φωνὰς δημιουργεῖν
as (an)-art fit by-letters the sounds to-fashion
 καὶ ταμיעῖν τῇ ἀναμνήσει, ἴδωμεν τίς μετὰ ταύτην
and to-store-up for-the recollection let-us-see which after this
 δευτέρα πρόπουσα φωνῇ ἐπιστήμη. οἶμαι δ' ὅτι μουσική.
second befitting for-voice science I-think and that music
 ὕμνῃν γὰρ εὐσεβεῖς καὶ προηγούμενον ἀνθρώποις τοὺς
to-hymn for (is)-pious and foremost for-men those
 χαρισαμένους αὐτοῖς μόνοις τὴν ἑναρθρον φωνὴν θεούς·
having-granted to-them alone the articulate voice gods
 τοῦτο δὲ καὶ Ὅμηρος ἐπεσημήνατο ἐν οἷς λέγει
this and also Homer indicated in which(-verses) he-says

οἱ δὲ πανημέριοι μολπῇ θεὸν ἱλάσκοντο,
they and all-day-long with-song the-god propitiated
 καλὸν αἰδόντες παιήονα, κοῦροι Ἀχαιῶν,
fair singing paean the-youths of-the-Achaeans
 μέλποντες Ἑκάεργον· ὁ δὲ φρένα τέρπετ' ἀκούων.
hymning the-Far-worker he and heart delighted bearing

ἄγε δή, ὦ μουσικῆς θιασῶται, τίς πρῶτος ἐχρήσατο
come indeed O of-music devotees who first used
 μουσικῇ, ἀναμνήσατε τοὺς ἐταίρους, καὶ τί εὔρε πρὸς
music remind the comrades and what found toward
 αὔξησιν ταύτης ὁ χρόνος καὶ τίνες εὐδόκιμοι γεγόνασι
(the)-increase of-this the time and which renowned have-become
 τῶν τὴν μουσικὴν ἐπιστήμην μεταχειρισμένων ἀλλὰ
of-those the music science having-handled but

μὴν καὶ εἰς πόσα καὶ εἰς τίνα χρήσιμον τὸ ἐπιτήδευμα.

indeed also for how-many and for what useful the pursuit

ταῦτα μὲν εἶπεν ὁ διδάσκαλος.

these(-things) indeed said the teacher

3 · LYSIAS: THE FIRST MUSICIANS

Lysias reports what Heraclides collected: Amphion invented kitharody, Linus the dirge, Anthes the hymn, Philammon songs on the birth of Leto, Artemis, and Apollo, and Thamyras the war of the Titans. Terpsander first named the kitharodic nomes and Clonias founded the aulodic; Alexander adds Olympus, Hyagnis, and Marsyas, and kitharody stayed simple until Phrynis.

- 3 ὁ δὲ Λυσίας ὑπολαβὼν παρὰ πολλοῖς ἔφη ἐζητημένον
 the and Lysias taking-up among many said (an)-inquired-into
 πρόβλημα ἐπιζητεῖς, ἀγαθὲ Ὀνησίκρατες τῶν τε γὰρ
 problem you-seek good Onesicrates of-the both for
 Πλατωνικῶν οἱ πλείστοι καὶ τῶν ἀπὸ τοῦ Περιπάτου
 Platonists the most and of-the from the Peripatos
 φιλοσόφων οἱ ἄριστοι περὶ τε τῆς ἀρχαίας μουσικῆς
 philosophers the best about both the ancient music
 συντάξαι ἐσπούδασαν καὶ περὶ τῆς αὐτῇ γεγενημένης
 to-compose were-zealous and about the to-it having-come
 παραφθορᾶς· ἀλλὰ γὰρ καὶ γραμματικῶν καὶ ἁρμονικῶν
 corruption but for also of-grammarians and of-harmonists
 οἱ ἐπ' ἄκρον παιδείας ἐληλακότες πολλὴν σπουδὴν περὶ
 the to (the)-summit of-learning having-driven much zeal about
 τοῦτο πεποιήνται. πολλὴ γοῦν ἡ τῶν συντεταχότων
 this have-made great accordingly the of-the having-composed(-men)
 διαφωνία. Ἡρακλείδης δ' ἐν τῇ Συναγωγῇ τῶν ἐν μουσικῇ
 disagreement Heraclides and in the Collection of-those in music

τὴν κιθαρωδίαν καὶ τὴν κιθαρωδικὴν ποίησιν πρῶτόν φησιν
the kitharody and the kitharodic composition first says
 Ἀμφίονα ἐπινοῆσαι τὸν Διὸς καὶ Ἀντιόπης, τοῦ πατρὸς
Amphion to-have-devised the of-Zeus and of-Antiope the father
 δηλονότι διδάξαντος αὐτόν. πιστοῦται δὲ τοῦτο ἐκ τῆς
evidently having-taught him he-confirms and this from the
 ἀναγραφῆς τῆς ἐν Σικυῶνι ἀποκεκμένης, δι' ἣς τὰς τε
record the in Sicyon laid-up through which the both
 ἱερείας τὰς ἐν Ἄργει καὶ τοὺς ποιητὰς καὶ τοὺς μουσικοὺς
priestesses the in Argos and the poets and the musicians
 ὀνομάζει. κατὰ δὲ τὴν αὐτὴν ἡλικίαν καὶ Λίνον τὸν ἐξ
he-names in and the same age also Linus the from
 Εὐβοίας θρήνους πεποικέναι λέγει καὶ Ἄνθην τὸν ἐξ
Euboea dirges to-have-made he-says and Anthes the from
 Ἀνθηδόνας τῆς Βοιωτίας ὕμνους καὶ Πίερον τὸν ἐκ Πιερίας
Anthedon the Boeotian hymns and Pierus the from Pieria
 τὰ περὶ τὰς Μούσας ποιήματα· ἀλλὰ καὶ Φιλάμμωνα τὸν
the about the Muses poems but also Philammon the
 Δελφὸν Λητοῦς τε καὶ Ἀρτέμιδος καὶ Ἀπόλλωνος γένεσιν
Delphian of-Leto both and of-Artemis and of-Apollo (the)-birth
 δηλῶσαι ἐν μέλεσι καὶ χοροὺς πρῶτον περὶ τὸ ἐν Δελφοῖς
to-have-shown in songs and choruses first around the in Delphi
 ἱερὸν στήσαι· Θάμυριν δὲ τὸ γένος Θρᾶκα εὐφωνότερον
temple to-have-set Thamyris and the race (a)-Thracian more-fair-voiced
 καὶ ἐμμελέστερον πάντων τῶν τότε ᾄσαι, ὥς ταῖς
and more-melodic than-all those then to-have-sung so-that with-the
 Μούσαις, κατὰ τοὺς ποιητὰς, εἰς ἀγῶνα καταστήναι·
Muses according-to the poets into (a)-contest to-have-come
 πεποικέναι δὲ τοῦτον ἱστορεῖται Τιτάνων πρὸς τοὺς θεοὺς
to-have-made and this(-man) it-is-related of-Titans against the gods
 πόλεμον. γεγονέναι δὲ καὶ Δημόδοκον Κερκυραῖον παλαιὸν
(a)-war to-have-been and also Demodocus (a)-Corcyraean ancient

μουσικόν, ὃν πεποιηκέναι Ἰλίου τε πόρθησιν καὶ Ἀφροδίτης
musician whom to-have-made of-Ilium both (the)-sack and of-Aphrodite
 καὶ Ἡφαίστου γάμον· ἀλλὰ μὴν καὶ Φήμιον Ἰθακήσιον
and of-Hephaestus (the)-marriage but indeed also Phemius (an)-Ithacan
 νόστον τῶν ἀπὸ Τροίας μετ' Ἀγαμέμνονος ἀνακομισθέντων
(a)-return of-those from Troy with Agamemnon brought-back
 ποιῆσαι. οὐ λελυμένην δ' εἶναι τῶν προειρημένων τὴν τῶν
to-have-made not loosened and to-be of-the aforesaid the of-the
 ποιημάτων λέξιν καὶ μέτρον οὐκ ἔχουσιν, ἀλλὰ καθάπερ
poems diction and meter not having but just-as
 Στησιχόρου τε καὶ τῶν ἀρχαίων μελοποιῶν, οἳ ποιοῦντες
of-Stesichorus both and of-the ancient lyric-poets who making
 ἔπη, τούτοις μέλη περιετίθεσαν· καὶ γὰρ τὸν Τέρπανδρον
verses to-these melodies put-around also for — Terpander
 ἔφη κιθαρωδικῶν ποιητὴν ὄντα νόμων, κατὰ νόμον
he-said of-kitbarodic (a)-maker being nomes by nome
 ἕκαστον τοῖς ἔπεσι τοῖς ἑαυτοῦ καὶ τοῖς Ὀμήρου μέλη
each to-the verses the of-himself and to-the of-Homer melodies
 περιτιθέντα ᾄδειν ἐν τοῖς ἀγῶσιν ἀποφῆναι δὲ τοῦτον
putting-around to-sing in the contests to-have-declared and this(-man)
 λέγει ὀνόματα πρῶτον τοῖς κιθαρωδικοῖς νόμοις· ὁμοίως
he-says names first to-the kitbarodic nomes likewise
 δὲ Τερπάνδρῳ Κλονᾶν, τὸν πρῶτον συστησάμενον τοὺς
and to-Terpander Clonas the first having-established the
 αὐλωδικούς νόμους καὶ τὰ προσόδια, ἐλεγείων τε καὶ ἐπῶν
aulodic nomes and the processional of-elegiacs both and of-verses
 ποιητὴν γεγονέναι· καὶ Πολύμνηστον τὸν Κολοφώνιον τὸν
(a)-maker to-have-been and Polymnestus the Colophonian the
 μετὰ τοῦτον γενόμενον τοῖς αὐτοῖς χρήσασθαι ποιήμασιν.
after this(-man) having-come the same to-have-used poems

οἱ δὲ νόμοι οἱ κατὰ τούτους, ἀγαθὲ Ὀνησίκρατες,
the and nomes the in these(-times) good Onesicrates
 αὐλωδικοὶ ἦσαν, Ἀπόθετος, Ἐλεγιοι, Κωμάρχιος, Σχοινίων,
aulodic were Apothetos Elegoi Komarchios Schoinion
 Κηπίων τε καὶ Δεῖος καὶ Τριμελής· ὑστέρω δὲ χρόνῳ
Kepion both and Deios and Trimeles at-a-later and time
 καὶ τὰ Πολυμνάστια καλούμενα ἐξευρέθη. οἱ δὲ τῆς
also the Polymnastia called were-discovered the and of-the
 κιθαρωδίας νόμοι πρότερον πολλῶ χρόνῳ τῶν αὐλωδικῶν
kitharody nomes earlier by-much time than-the aulodic
 κατεστάθησαν ἐπὶ Τερπάνδρου· ἐκεῖνος γοῦν τοὺς
were-established under Terpander that(-man) accordingly the
 κιθαρωδικοὺς πρότερος ὠνόμασε, Βοιωτίων τινα καὶ Αἰόλιον
kitharodic first named Boeotian some and Aeolian
 Τροχαίων τε καὶ Ὀξύν Κηπίωνά τε καὶ Τερπάνδρειον
Trochaios both and Oxys Kepion both and Terpandreion
 καλῶν, ἀλλὰ μὴν καὶ Τετραοῖδιον. πεποιήται δὲ τῷ
calling but indeed also Tetraoidion have-been-made and —
 Τερπάνδρῳ καὶ προοίμια κιθαρωδικὰ ἐν ἔπεσιν. ὅτι δ' οἱ
by-Terpander also preludes kitharodic in verses that and the
 κιθαρωδικοὶ νόμοι οἱ πάλαι ἐξ ἐπῶν συνίσταντο, Τιμόθεος
kitharodic nomes the of-old from verses were-composed Timotheus
 ἐδήλωσε τοὺς γοῦν πρώτους νόμους ἐν ἔπεσι διαμινγνύν
showed the accordingly first nomes in verses mixing-in
 διθυραμβικὴν λέξιν ᾗδεν, ὅπως μὴ εὐθὺς φανῇ παρανομῶν
dithyrambic diction he-sang so-that not at-once he-appear transgressing
 εἰς τὴν ἀρχαίαν μουσικὴν. ἔοικε δὲ κατὰ τὴν τέχνην
against the ancient music seems and in the art
 τὴν κιθαρωδικὴν ὃ Τέρπανδρος διηνηνοχέαι· τὰ Πύθια
the kitharodic — Terpander to-have-excelled the Pythia
 γὰρ τετράκις ἐξῆς νενικηκῶς ἀναγέγραπται. καὶ τοῖς
for four-times successively having-won he-is-recorded and in-the

χρόνοις δὲ σφόδρα παλαιός ἐστι· πρεσβύτερον γοῦν
times and exceedingly ancient he-is older accordingly
 αὐτὸν Ἀρχιλόχου ἀποφαίνει Γλαῦκος ὁ ἐξ Ἰταλίας ἐν
him than-Archilochus declares Glaucus the from Italy in
 συγγράμματί τι· τῷ Περὶ τῶν ἀρχαίων ποιητῶν τε
(a)-treatise certain the On the ancient poets both
 καὶ μουσικῶν· φησὶ γὰρ αὐτὸν δεύτερον γενέσθαι μετὰ
and musicians he-says for him second to-have-been after
 τοὺς πρώτους ποιήσαντας αὐλωδίας.
the first having-made aulody

- 5 Ἀλέξανδρος δ' ἐν τῇ Συναγωγῇ τῶν περὶ Φρυγίας
Alexander and in the Collection of-the(-things) about Phrygia
 κρούματα Ὀλυμπον ἔφη πρῶτον εἰς τοὺς Ἕλληνας
strains Olympus said first to the Greeks
 κομίσαι, ἔτι δὲ καὶ τοὺς Ἰδαίους Δακτύλους· Ὑαγνῷ
to-have-brought further and also the Idaean Dactyls Hyagnis
 δὲ πρῶτον αὐλῆσαι, εἶτα τὸν τούτου υἱὸν Μαρσύαν, εἴτ'
and first to-have-piped then the of-him son Marsyas then
 Ὀλυμπον· ἐξηλωκέναι δὲ τὸν Τέρπανδρον Ὀμήρου μὲν τὰ
Olympus to-have-emulated and — Terpander of-Homer indeed the
 ἔπη Ὀρφείως δὲ τὰ μέλη. ὁ δ' Ὀρφεὺς οὐδένα φαίνεται
verses of-Orpheus and the melodies the and Orpheus no-one appears
 μεμιμημένος· οὐδεὶς γάρ πω γεγένητο, εἰ μὴ οἱ τῶν
having-imitated no-one for yet had-been if not the of-the
 αὐλωδικῶν ποιηταί· τούτοις δὲ κατ' οὐθὲν τὸ Ὀρφικὸν
aulodic makers to-these and in nothing the Orphic
 ἔργον ἔοικε. Κλονᾶς δ' ὁ τῶν αὐλωδικῶν νόμων ποιητής,
work resembles Clonas and the of-the aulodic nomes maker
 ὁ ὀλίγῳ ὕστερον Τερπάνδρου γενόμενος, ὥς μὲν Ἀρκάδες
the by-a-little later than-Terpander having-been as indeed Arcadians
 λέγουσι, Τεγεάτης ἦν, ὥς δὲ Βοιωτοί, Θηβαῖος. μετὰ δὲ
say (a)-Tegean was as and Boeotians (a)-Theban after and

Τέρπανδρον καὶ Κλονᾶν Ἀρχίλοχος παραδίδεται γενέσθαι.

Terpander and Clonas Archilochus is-handed-down to-have-been

ἄλλοι δέ τινες τῶν συγγραφέων Ἄρδαλόν φασι Τροιζήνιον

others and some of-the writers Ardalus they-say (a)-Troezenian

πρότερον Κλονᾶ τὴν αὐλοδικὴν συστήσασθαι μούσαν·

earlier than-Clonas the aulodic to-have-established muse

γεγονέναι δὲ καὶ Πολύμνηστον ποιητὴν Μέλητος τοῦ

to-have-been and also Polymnestus (a)-maker of-Meles the

Κολοφωνίου υἱόν· ὃν Πολύμνηστόν τε καὶ Πολυμνήστην

Colophonian son whom Polymnestos both and Polymnestes

νόμους ποιῆσαι. περὶ δὲ Κλονᾶ, ὅτι τὸν Ἀπόθετον

nomes to-have-made about and Clonas that the Apotbetos

νόμον καὶ Σχοινίωνα πεποιηκὼς εἶη, μνημονεύουσιν οἱ

nome and Schoinion having-made he-was mention the

ἀναγεγραφότες· τοῦ δὲ Πολυμνήστου καὶ Πίνδαρος καὶ

recorders the and of-Polymnestus both Pindar and

Ἄλκμᾶν οἱ τῶν μελῶν ποιηταὶ ἐμνημόνευσαν· τινὰς δὲ τῶν

Alcman the of-the songs makers mentioned some and of-the

νόμων τῶν κιθαρωδικῶν τῶν ὑπὸ Τέρπανδρου πεποιημένων

nomes the kitharodic the by Terpander made

Φιλάμμωνά φασι τὸν ἀρχαῖον τὸν Δελφὸν συστήσασθαι.

Philammon they-say the ancient the Delphian to-have-established

τὸ δ' ὅλον ἢ μὲν κατὰ Τέρπανδρον κιθαρωδία καὶ

the and whole the indeed by Terpander kitharody also

μέχρι τῆς Φρύνιδος ἡλικίας παντελῶς ἀπλή τις οὔσα

until the of-Phrynys age utterly simple a-certain being

διετέλει· οὐ γὰρ ἐξῆν τὸ παλαιὸν οὕτω ποιεῖσθαι

continued not for it-was-allowed in-the old(-time) thus to-make

τὰς κιθαρωδίας ὥς νῦν οὐδὲ μεταφέρειν τὰς ἀρμονίας καὶ

the kitharodies as now nor to-transfer the harmoniai and

τοὺς ῥυθμούς· ἐν γὰρ τοῖς νόμοις ἐκάστω διετήρουν τὴν

the rhythms in for the nomes for-each they-kept the

οἰκείαν τάσιν· διὸ καὶ ταύτην ἐπωνυμίαν εἶχον· νόμοι
proper tension wherefore also this appellation they-had nomes
 γὰρ προσηγορεύθησαν, ἐπειδὴ οὐκ ἐξῆν παραβῆναι
for they-were-called since not it-was-allowed to-transgress
 καθ' ἕκαστον νενομισμένον εἶδος τῆς τάσεως. τὰ γὰρ
in each customary form of-the tension the(-rites) for
 πρὸς τοὺς θεοὺς ὡς βούλονται ἀφοσιωσάμενοι ἐξέβαινον
toward the gods as they-wish having-discharged they-went-on
 εὐθὺς ἐπὶ τε τὴν Ὀμήρου καὶ τῶν ἄλλων ποίησιν· δῆλον
at-once to both the of-Homer and of-the others poetry clear
 δὲ τοῦτ' ἐστὶ διὰ τῶν Τερπάνδρου προοιμίων. ἐποιήθη δὲ
and this is through the of-Terpander preludes was-made and
 καὶ τὸ σχῆμα τῆς κιθάρας πρῶτον κατὰ Κηπίωνα, τὸν
also the shape of-the kithara first in-the-time-of Kepion the
 Τερπάνδρου μαθητὴν· ἐκλήθη δ' Ἀσιάς διὰ τὸ κεχρῆσθαι
of-Terpander pupil it-was-called and Asia through the to-have-used
 τοὺς Λεσβίους αὐτῇ κιθαρωδοὺς πρὸς τῇ Ἀσίᾳ κατοικοῦντας.
the Lesbian it kitharodes near the Asia dwelling
 τελευταῖον δὲ Περικλείτον φασὶ κιθαρωδὸν νικῆσαι ἐν
last and Perikleitos they-say (a)-kitharode to-have-won in
 Λακεδαίμονι Κάρνεια, τὸ γένος ὄντα Λέσβιον· τούτου δὲ
Lacedaemon (the)-Karneia the race being (a)-Lesbian of-this(-man) and
 τελευτήσαντος, τέλος λαβεῖν Λεσβίοις τὸ συνεχὲς τῆς κατὰ
having-died (an)-end to-have-taken for-Lesbians the continuous of-the in
 τὴν κιθαρωδίαν διαδοχῆς. ἔνιοι δὲ πλανώμενοι νομίζουσι
the kitharody succession some and erring think
 κατὰ τὸν αὐτὸν χρόνον Τερπάνδρῳ Ἰππώνακτα γεγονέναι·
in the same time with-Terpander Hipponax to-have-been
 φαίνεται δ' Ἰππώνακτος καὶ Περικλείτος ὢν πρεσβύτερος.
appears and than-Hipponax also Perikleitos being older

Turning to the *nomes* for the *aulos* alone, Lysias credits the Polykephalos to a later Olympus, though others name Crates, and the Harmatios to the first Olympus, Marsyas' pupil, who brought the harmonic *nomes* into Greece. He adds the *kradias* that Mimnermus piped, and the Trimeres of Sacadas, whose three strophes were sung in the Dorian, the Phrygian, and the Lydian in turn.

ἐπεὶ δὲ τοὺς αὐλωδικοὺς νόμους καὶ κιθαρωδικοὺς ὁμοῦ 7
 since and the aulodic *nomes* and kitharodic together
 τοὺς ἀρχαίους ἐμπεφανίκαμεν, μεταβησόμεθα ἐπὶ μόνους
 the ancient we-have-set-forth we-shall-pass-on to only
 τοὺς αὐλητικούς. λέγεται γὰρ τὸν προειρημένον Ὀλυμπον,
 the aulodic it-is-said for the aforesaid Olympus
 αὐλητὴν ὄντα τῶν ἐκ Φρυγίας, ποιῆσαι νόμον αὐλητικὸν
 (an)-aulete being of-those from Phrygia to-have-made (a)-nome auletic
 εἰς Ἀπόλλωνα τὸν καλούμενον Πολυκέφαλον. εἶναι δὲ
 for Apollo the called Polykephalos to-be and
 τὸν Ὀλυμπον τοῦτόν φασιν ἓνα τῶν ἀπὸ τοῦ πρώτου
 — Olympus this they-say one of-those from the first
 Ὀλύμπου τοῦ Μαρσίου, πεποιηκότος εἰς τοὺς θεοὺς τοὺς
 Olympus the of-Marsyas having-made for the gods the
 νόμους· οὗτος γὰρ παιδικὰ γενόμενος Μαρσίου καὶ τὴν
nomes this(-man) for (a)-beloved having-been of-Marsyas and the
 αὐλησιν μαθὼν παρ' αὐτοῦ τοὺς νόμους τοὺς ἀρμονικοὺς
 piping having-learned from him the *nomes* the harmonic
 ἐξήνεγκεν εἰς τὴν Ἑλλάδα, οἷς νῦν χρῶνται οἱ Ἕλληνες
 brought-out to — Greece which now use the Greeks
 ἐν ταῖς ἐορταῖς τῶν θεῶν. ἄλλοι δὲ Κράτητος εἶναί φασι
 in the feasts of-the gods others and of-Crates to-be they-say
 τὸν Πολυκέφαλον νόμον, γενομένου μαθητοῦ Ὀλύμπου ὃ
 the Polykephalos nome having-been (a)-pupil of-Olympus the

δὲ Πρατίνας Ὀλύμπου φησὶν εἶναι τοῦ νεωτέρου τὸν νόμον
and Pratinas of-Olympus says to-be the younger the nome
 τοῦτον. τὸν δὲ καλούμενον Ἀρμάτιον νόμον λέγεται ποιῆσαι
this the and called Harmatios nome it-is-said to-have-made
 ὁ πρῶτος Ὀλυμπος, ὁ Μαρσύου μαθητής. τὸν δὲ Μαρσύαν
the first Olympus the of-Marsyas pupil the and Marsyas
 φασὶ τινες Μάσσην καλεῖσθαι· οἱ δ' οὐ, ἀλλὰ Μαρσύαν.
say some Masses to-be-called those and not but Marsyas
 εἶναι δ' αὐτὸν Ὑάγνιδος υἱόν, τοῦ πρώτου εὐρόντος τὴν
to-be and him of-Hyagnis son the first having-found the
 αὐλητικὴν τέχνην. ὅτι δ' ἐστὶν Ὀλύμπου ὁ ἀρμάτιος νόμος,
auletic art that and is of-Olympus the Harmatios nome
 ἐκ τῆς Γλαύκου ἀναγραφῆς τῆς ὑπὲρ τῶν ἀρχαίων ποιητῶν
from the of-Glaucus record the about the ancient poets
 μάθοι ἂν τις, καὶ ἔτι γνοίη ὅτι Στησίχορος ὁ Ἱμεραῖος
might-learn — one and further might-know that Stesichorus the Himeræan
 οὔτ' Ὀρφέα οὔτε Τέρπανδρον οὔτ' Ἀρχίλοχον οὔτε Θαλήταν
neither Orpheus nor Terpander nor Archilochus nor Thaletas
 ἐμμήσατο, ἀλλ' Ὀλυμπον, χρησάμενος τῷ ἀρματίῳ νόμῳ
imitated but Olympus having-used the Harmatios nome
 καὶ τῷ κατὰ δάκτυλον εἶδει, ὃ τινες ἐξ ὀρθίου νόμου
and the by dactyl form which some from (an)-Orthios nome
 φασὶν εἶναι. ἄλλοι δὲ τινες ὑπὸ Μυσῶν εὐρήσθαι τοῦτον
say to-be others and some by Mysians to-have-been-found this
 τὸν νόμον· γεγονέαι γάρ τινας ἀρχαίους αὐλητὰς Μυσοῦς.
the nome to-have-been for some ancient auletes Mysians
 8 καὶ ἄλλος δ' ἐστὶν ἀρχαῖος νόμος καλούμενος κραδίας,
also another and is (an)-ancient nome called kradias
 ὃν φησιν Ἱππῶναξ Μίμνερμον αὐλῆσαι. ἐν ἀρχῇ γὰρ
which says Hipponax Mimnermus to-have-piped in (the)-beginning for
 ἐλεγεία μεμελοποιημένα οἱ αὐλωδοὶ ᾗδον· τοῦτο δὲ δηλοῖ
elegiac set-to-music the aulodes sang this and shows

ἡ τῶν Παναθηναίων γραφή ἢ περὶ τοῦ μουσικοῦ ἀγῶνος.
the of-the Panathenaia record the about the musical contest
 γέγονε δὲ καὶ Σακάδας Ἀργεῖος ποιητὴς μελῶν τε
has-been and also Sacadas (an)-Argive (a)-maker of-songs both
 καὶ ἐλεγείων μεμελοποιημένων· ὁ δ' αὐτὸς καὶ ποιητὴς
and of-elegiacs set-to-music the and same also (a)-poet
 ἀγαθὸς καὶ τὰ Πύθια τρὶς νενικηκὼς ἀναγράφεται·
good and the Pythia thrice having-won is-recorded
 τούτου καὶ Πίνδαρος μνημονεύει· τόνων γοῦν τριῶν
of-this(-man) also Pindar makes-mention keys accordingly three
 ὄντων κατὰ Πολύμνηστον καὶ Σακάδαν, τοῦ τε
being in-the-time-of Polymnestus and Sacadas the both
 Δωρίου καὶ Φρυγίου καὶ Λυδίου, ἐν ἐκάστῳ τῶν εἰρημένων
Dorian and Phrygian and Lydian in each of-the said
 τόνων στροφὴν ποιήσαντά φασι τὸν Σακάδαν διδάξαι
keys (a)-strophe having-made they-say — Sacadas to-have-taught
 ᾄδειν τὸν χορὸν Δωριστὶ μὲν τὴν πρώτην, Φρυγιστὶ
to-sing the chorus in-Dorian indeed the first in-Phrygian
 δὲ τὴν δευτέραν, Λυδιστὶ δὲ τὴν τρίτην· καλεῖσθαι δὲ
and the second in-Lydian and the third to-be-called and
 Τριμερῇ τὸν νόμον τοῦτον διὰ τὴν μεταβολήν. ἐν δὲ
Trimeres the nome this through the modulation in and
 τῇ ἐν Σικυῶνι ἀναγραφῇ τῇ περὶ τῶν ποιητῶν Κλονᾶς
the in Sicyon record the about the poets Clonas
 εὔρετῆς ἀναγράφεται τοῦ τριμεροῦς νόμου.
(as)-discoverer is-recorded of-the Trimeres nome

The second establishment of music at Sparta is credited to Thaletas, Xenodamus, Xenocritus, Polymnestus, and Sacadas, who founded the Gymnopaïdiai and the Arcadian displays. Aristoxenus makes Olympus the discoverer of the enharmonic genus, which he found by carrying the melody past the diatonic lichanos; the later composers Crexus, Timotheus, and Philoxenus went after novelty and applause, and made the old few-stringed gravity look old-fashioned. Lysias then hands the argument to Soterichus.

- 9 ἡ μὲν οὖν πρώτη κατάστασις τῶν περὶ τὴν μουσικὴν
the indeed then first establishment of-the(-things) about the music
 ἐν τῇ Σπάρτῃ, Τερπάνδρου καταστήσαντος, γεγένηται·
in the Sparta of-Terpander having-established has-come
 τῆς δευτέρας δὲ Θαλήτας τε ὁ Γορτύνιος καὶ Ξενόδαμος
of-the second and Thaletas both the Gortynian and Xenodamus
 ὁ Κυθήριος καὶ Ξενοκρίτος ὁ Λοκρὸς καὶ Πολύμνηστος
the Cytherian and Xenocritus the Locrian and Polymnestus
 ὁ Κολοφώνιος καὶ Σακάδας ὁ Ἀργεῖος μάλιστα αἰτίαν
the Colophonian and Sacadas the Argive most (the)-credit
 ἔχουσιν ἡγεμόνες γενέσθαι· τούτων γὰρ εἰσηγησαμένων
have leaders to-have-been of-these for having-introduced
 τὰ περὶ τὰς γυμνοπαιδίας τὰς ἐν Λακεδαίμονι λέγεται
the(-things) about the Gymnopaïdiai the in Lacedaemon it-is-said
 κατασταθῆναι, τὰ περὶ τὰς ἀποδείξεις τὰς ἐν Ἀρκαδίᾳ,
to-have-been-established the(-things) about the displays the in Arcadia
 τῶν τε ἐν Ἄργει τὰ ἐνδυμάτια καλούμενα. ἦσαν δ' οἱ περὶ
of-the and in Argos the Endymatia called were and those around
 Θαλήταν τε καὶ Ξενόδαμον καὶ Ξενοκρίτον ποιηταὶ παιάνων,
Thaletas both and Xenodamus and Xenocritus makers of-paeans
 οἱ δὲ περὶ Πολύμνηστον τῶν ὀρθίων καλουμένων, οἱ δὲ
those and around Polymnestus of-the Orthioi called those and

περὶ Σακάδαν ἐλεγείων. ἄλλοι δὲ Ξενοδάμον ὑπορχημάτων
 around Sacadas of-elegiacs others and Xenodamus of-hyporcbemes
 ποιητὴν γεγονέναι φασὶ καὶ οὐ παιάνων, καθάπερ Πρατίνας·
 (a)-maker to-have-been say and not of-paeans just-as Pratinas
 καὶ αὐτοῦ δὲ τοῦ Ξενοδάμου ἀπομνημονεύεται ᾠσμα,
 and of-himself and — of-Xenodamus is-recorded (a)-song
 ὃ ἐστὶ φανερώς ὑπόρχημα. κέχρηται δὲ τῷ γένει τῆς
 which is plainly (a)-hyporcbeme has-used and the kind of-the
 ποιήσεως ταύτης καὶ Πίνδαρος· ὁ δὲ παιὰν ὅτι διαφορὰν
 composition this also Pindar the and paeon that (a)-difference
 ἔχει πρὸς τὰ ὑπορχήματα, τὰ Πινδάρου ποιήματα δηλώσει·
 has toward the hyporcbemes the of-Pindar poems will-show
 γέγραφε γὰρ καὶ παιᾶνας καὶ ὑπορχήματα.
 he-has-written for both paeans and hyporcbemes
 καὶ Πολύμνηστος δ' αὐλωδικοὺς νόμους ἐποίησεν· ἐν δὲ τῷ 10
 also Polymnestus and aulodic nomes made in and the
 ὀρθίῳ νόμῳ τῇ μελοποιίᾳ κέχρηται, καθάπερ οἱ ἁρμονικοί
 Orthios nome the melody-making he-has-used just-as the harmonists
 φασιν, οὐκ ἔχομεν δ' ἀκριβῶς εἰπεῖν· οὐ γὰρ εἰρήκασιν
 say not we-are-able and exactly to-say not for have-said
 οἱ ἀρχαῖοί τι περὶ τούτου. καὶ περὶ Θαλήτα δὲ τοῦ
 the ancients anything about this and about Thaletas and the
 Κρητός, εἰ παιάνων γεγένηται ποιητής, ἀμφισβητεῖται.
 Cretan whether of-paeans he-has-become (a)-maker is-disputed
 Γλαῦκος γὰρ μετ' Ἀρχίλοχον φάσκων γεγενῆσθαι Θαλήταν
 Glaucus for after Archilochus asserting to-have-been Thaletas
 μεμιμῆσθαι μὲν αὐτόν φησι τὰ Ἀρχιλόχου μέλη, ἐπὶ δὲ
 to-have-imitated indeed him says the of-Archilochus songs to and
 τὸ μακρότερον ἐκτείνει, καὶ Μάρωνα καὶ Κρητικὸν
 the longer to-have-extended and (the)-Maron and Cretic
 ρυθμὸν εἰς τὴν μελοποιίαν ἐνθεῖναι· οἷς Ἀρχίλοχον
 rhythm into the melody-making to-have-put-in which Archilochus

μὴ κεχρῆσθαι, ἀλλ' οὐδ' Ὀρφέα οὐδὲ Τέρπανδρον ἐκ
 not to-have-used but not-even Orpheus nor Terpander from
 γὰρ τῆς Ὀλύμπου αὐλήσεως Θαλήταν φασὶν ἐξεργάσθαι
 for the of-Olympus piping Thaletas they-say to-have-worked-out
 ταῦτα καὶ δόξαι ποιητὴν ἀγαθὸν γεγονέναι. περὶ δὲ
 these and to-have-seemed (a)-maker good to-have-been about and
 Ξενοκρίτου ὃς ἦν τὸ γένος ἐκ Λοκρῶν τῶν ἐν Ἰταλίᾳ,
 Xenocritus who was the race from Locrians those in Italy
 ἀμφισβητεῖται εἰ παιάνων ποιητὴς γέγονεν· ἥρωϊκῶν
 it-is-disputed whether of-paeans (a)-maker he-was of-heroic
 γὰρ ὑποθέσεων πράγματα ἔχουσιν ποιητὴν γεγονέναι
 for subjects matters having (a)-maker to-have-been
 φασὶν αὐτόν· διὸ καί τινες διθυράμβους καλεῖν αὐτοῦ
 they-say him wherefore also some dithyrambs to-call of-him
 τὰς ὑποθέσεις· πρεσβύτερον δὲ τῇ ἡλικίᾳ φησὶν ὁ
 the subjects older and in-the age says —
 Γλαῦκος Θαλήταν Ξενοκρίτου γεγονέναι.

Glaucus Thaletas than-Xenocritus to-have-been

- 11 Ὀλυμπος δέ, ὥς Ἀριστόξενός φησιν, ὑπολαμβάνεται
 Olympus and as Aristoxenus says is-supposed
 ὑπὸ τῶν μουσικῶν τοῦ ἐναρμονίου γένους εὑρετὴς
 by the musicians of-the enharmonic genus (the)-discoverer
 γεγενῆσθαι· τὰ γὰρ πρὸ ἐκείνου πάντα διάτονα καὶ
 to-have-been the(-things) for before him all diatonic and
 χρωματικὰ ἦν. ὑπονοοῦσι δὲ τὴν εὔρεσιν τοιαύτην τινὰ
 chromatic were they-suppose and the discovery such some
 γενέσθαι· ἀναστρεφόμενον τὸν Ὀλυμπον ἐν τῷ διατόνῳ
 to-have-been (as-)dwelling — Olympus in the diatonic
 καὶ διαβιβάζοντα τὸ μέλος πολλάκις ἐπὶ τὴν διάτονον
 and carrying-across the melody often to the diatonic
 παρυπάτην, τοτὲ μὲν ἀπὸ τῆς παραμέσης τοτὲ
 parhypate at-one-time indeed from the paramese at-another

δ' ἀπὸ τῆς μέσης, καὶ παραβαίνοντα τὴν διάτονον
and from the mese and passing-over the diatonic
 λιχανὸν καταμαθεῖν τὸ κάλλος τοῦ ἥθους, καὶ οὕτω τὸ
lichanos to-have-learned the beauty of-the character and thus the
 ἐκ τῆς ἀναλογίας συνεστηκὸς σύστημα θαυμάσαντα καὶ
from the proportion composed system having-admired and
 ἀποδεξάμενον ἐν τούτῳ ποιεῖν ἐπὶ τοῦ Δωρίου τόνου· οὔτε
having-approved in this to-compose in the Dorian key neither
 γὰρ τῶν τοῦ διατόνου ἰδίων οὔτε τῶν τοῦ χρώματος
for of-the of-the diatonic proper(-notes) nor of-the of-the chroma
 ἄπτεσθαι ἀλλ' ἤδη τῶν τῆς ἁρμονίας. εἶναι δ' αὐτῷ
to-touch but already of-the of-the harmonia to-be and for-bim
 τὰ πρῶτα τῶν ἐναρμονίων τοιαῦτα. τιθέασι γὰρ τούτων
the first of-the enharmonic(-pieces) such they-set for of-these
 πρῶτον τὸν Σπονδείον, ἐν ᾧ οὐδεμία τῶν διαιρέσεων τὸ
first the Spondeion in which none of-the divisions the
 ἴδιον ἐμφαίνει, εἰ μὴ τις εἰς τὸν συντονώτερον σπονδειασμόν
proper shows if not one to the tenser spondeiasmos
 βλέπων αὐτὸ τοῦτο διάτονον εἶναι ἀπεικάσει. δῆλον δ'
looking it this diatonic to-be will-conjecture clear and
 ὅτι καὶ ψεῦδος καὶ ἐκμελὲς θήσκει ὁ τοιοῦτο τιθεῖς·
that both (a)-falsehood and unmelodic will-posit the(-man) such positing
 ψεῦδος μὲν, ὅτι διέσει ἔλαττον ἐστὶ τόνου τοῦ περὶ
(a)-falsehood indeed because by-a-diesis smaller it-is than-a-tone the about
 τὸν ἡγεμόνα κειμένον· ἐκμελὲς δέ, ὅτι, καὶ εἴ τις ἐν
the leading(-note) lying unmelodic and because also if one in
 τῇ τοῦ τονιαίου δυνάμει τιθείη τὸ τοῦ συντονωτέρου
the of-the tone-sized function should-place the of-the tenser
 σπονδειασμοῦ ἴδιον, συμβαίνει ἂν δύο ἐξῆς τίθεσθαι
spondeiasmos proper(-note) it-would-result — two successively to-be-placed
 δίτονα, τὸ μὲν ἀσύνθετον τὸ δὲ σύνθετον· τὸ γὰρ ἐν ταῖς
ditones the indeed incomposite the and composite the for in the

μέσαις ἐναρμόνιον πυκνόν, ᾧ νῦν χρῶνται, οὐ δοκεῖ τοῦ
middle(-notes) enharmonic pyknon which now they-use not seems of-the
 ποιητοῦ εἶναι. ῥάδιον δ' ἐστὶ συνιδεῖν, ἐάν τις ἀρχαϊκῶς
composer to-be easy and it-is to-discern if one in-old-style
 τινος αὐλοῦντος ἀκούσῃ· ἀσύνθετον γὰρ βούλεται εἶναι
of-someone piping should-bear incomposite for it-wishes to-be
 καὶ τὸ ἐν ταῖς μέσαις ἡμιτόνιον. τὰ μὲν οὖν πρῶτα
also the in the middle(-notes) semitone the indeed then first
 τῶν ἐναρμονίων τοιαῦτα· ὕστερον δὲ τὸ ἡμιτόνιον διηρέθη
of-the enharmonic(-pieces) such later and the semitone was-divided
 ἔν τε τοῖς Λυδίοις καὶ ἐν τοῖς Φρυγίοις. φαίνεται δ'
in both the Lydian(-melodies) and in the Phrygian appears and
 Ὀλυμπος αὐξήσας μουσικὴν τῷ ἀγένητόν τι καὶ
Olympus having-increased music by-the uncreated something and
 ἀγνωσμένον ὑπὸ τῶν ἔμπροσθεν εἰσαγαγεῖν, καὶ ἀρχηγὸς
unknown by those before to-have-brought-in and (the)-founder
 γενέσθαι τῆς Ἑλληνικῆς καὶ καλῆς μουσικῆς.
to-have-become of-the Greek and noble music

- 12 ἔστι δέ τις καὶ περὶ τῶν ρυθμῶν λόγος· γένη γάρ τινα καὶ
there-is and some also about the rhythms account kinds for certain and
 εἶδη ρυθμῶν προσεξευρέθη, ἀλλὰ μὴν καὶ μελοποιῶν τε καὶ
forms of-rhythms were-further-discovered but indeed also of-melody-makings both and
 ρυθμοποιῶν. προτέρα μὲν γὰρ ἢ Τερπάνδρου καινοτομία
of-rhythm-makings earlier indeed for the of-Terpander innovation
 καλὸν τινα τρόπον εἰς τὴν μουσικὴν εἰσήγαγε· Πολύμνηστος
(a)-noble certain manner into the music introduced Polymnestus
 δὲ μετὰ τὸν Τερπάνδρειον τρόπον, ᾧ καὶ ἐχρήσατο, καὶ
and after the Terpandrian manner which also he-used also
 αὐτός, μέντοι ἐχόμενος τοῦ καλοῦ τύπου, ὡσαύτως δὲ
himself however holding-to the noble type likewise and
 καὶ Θαλήτας καὶ Σακάδας· καὶ γὰρ οὗτοι κατὰ γε τὰς
also Thaletas and Sacadas also for these in at-least the

ῥυθμοποιίας ἱκανοί, οὐκ ἐκβαίνοντες μέντοι τοῦ καλοῦ τύπου.

rhythm-makings competent not departing however the noble type

ἔστι δέ τις Ἀλκμανικὴ καινοτομία καὶ Στησιχόρειος, καὶ

there-is and some Alcmanic innovation and Stesichorean and

αὐταὶ οὐκ ἀφεστῶσαι τοῦ καλοῦ. Κρέξος δὲ καὶ Τιμόθεος καὶ

these not standing-off the noble Crexus and and Timotheus and

Φιλόξενος καὶ οἱ κατ' αὐτοὺς τὴν ἡλικίαν γεγονότες ποιηταὶ

Philoxenus and those in their the age having-been makers

φορτικώτεροι καὶ φιλόκαινοι γεγόνασι, τὸν φιλάνθρωπον

more-vulgar and novelty-loving have-become the crowd-pleasing

καὶ θεματικὸν νῦν ὀνομαζόμενον τρόπον διώξαντες· τὴν

and prize-seeking now called manner having-pursued the

γὰρ ὀλιγοχορδίαν καὶ τὴν ἀπλότητα καὶ σεμνότητα τῆς

for few-stringedness and the simplicity and gravity of-the

μουσικῆς παντελῶς ἀρχαϊκὴν εἶναι συμβέβηκεν.

music utterly old-fashioned to-be it-has-befallen

εἰρηκῶς κατὰ δύναμιν περὶ τε τῆς πρώτης μουσικῆς 13

having-spoken according-to (my)-power about both the first music

καὶ τῶν πρώτων εὐρόντων αὐτὴν καὶ ὑπὸ τίνων κατὰ

and of-those first having-found it and by whom through

χρόνους ταῖς προσεξευρέσεσιν ἡῤῥηται, καταπαύσω τὸν

(the)-times by-the further-discoveries it-has-grown I-shall-cease the

λόγον καὶ παραδώσω τῷ ἐταίρῳ Σωτηρίχῳ, ἐσπουδακότι

discourse and I-shall-hand-over to-the comrade Soterichus having-been-zealous

οὐ μόνον περὶ μουσικὴν ἀλλὰ καὶ περὶ τὴν ἄλλην

not only about music but also about the other

ἐγκύκλιον παιδείαν. ἡμεῖς γὰρ μᾶλλον χειρουργικῶ μέρει

general education we for rather in-the-practical part

τῆς μουσικῆς ἐγγεγυμνάσμεθα. ὁ μὲν Λυσίας ταῦτ'

of-the music have-been-trained the indeed Lysias these(-things)

εἰπὼν κατέπαυσε τὸν λόγον.

having-said ceased the discourse

Soterichus objects that Lysias has followed the records only. Music was not discovered by Marsyas or Hyagnis or Olympus but by Apollo, whose ancient statue at Delos holds the bow in one hand and the Graces with their instruments in the other. He then defends Plato's choice of the Dorian: Plato rejected the Lydian as mournful and the relaxed Lydian as dissolute, but knew the Lydian and the Ionian, and the ancients kept to few strings by preference and not from ignorance.

- 14 Σωτήριχος δὲ μετὰ τοῦτον ὥδέ πως ἔφη· ὑπὲρ σεμνοῦ
Soterichus and after this(-man) thus somehow said concerning (a)-solemn
 ἐπιτηδεύματος καὶ θεοῖς μάλιστα ἀρέσκοντος, ὡγαθὲ
pursuit and to-gods most pleasing O-good
 Ὀνησίκρατες, τοὺς λόγους ἡμᾶς προετρέψω ποιήσασθαι.
Onesicrates the discourses us you-urged to-make
 ἀποδέχομαι μὲν οὖν τῆς συνέσεως τὸν διδάσκαλον
I-approve indeed then for-the understanding the teacher
 Λυσίαν ἀλλὰ μὴν καὶ τῆς μνήμης ἣν ἐπεδείξατο περί
Lysias but indeed also for-the memory which he-displayed about
 τε τοὺς εὑρετὰς τῆς πρώτης μουσικῆς καὶ περὶ τοὺς
both the discoverers of-the first music and about those
 τὰ τοιαῦτα συγγεγραφότας· ὑπομνήσω δὲ τοῦθ', ὅτι
the such having-written I-shall-recall and this that
 τοῖς ἀναγεγραμμένοις μόνοις κατακολουθήσας πεποίηται
the recorded(-things) only having-followed he-has-made
 τὴν δεῖξιν. ἡμεῖς δ' οὐκ ἄνθρωπόν τινα παρελάβομεν
the demonstration we and not (a)-man some have-received
 εὔρετην τῶν τῆς μουσικῆς ἀγαθῶν, ἀλλὰ τὸν πάσαις ταῖς
(as)-discoverer of-the of-the music goods but the with-all the
 ἀρεταῖς κεκοσμημένον θεὸν Ἀπόλλωνα. οὔτε γὰρ Μαρσίου
virtues adorned god Apollo neither for of-Marsyas
 ἢ Ὀλύμπου ἢ Ὑάγνιδος, ὥς τινες οἴονται, εὔρημα ὁ αὐλός·
or of-Olympus or of-Hyagnis as some think (a)-discovery the aulos

οὐ μόνη δὲ κιθάρα Ἀπόλλωνος, ἀλλὰ καὶ αὐλητικῆς καὶ
not only and kithara of-Apollo but also of-aulos-playing and
 κιθαριστικῆς εὐρετῆς ὁ θεός. δῆλον δ' ἐκ τῶν χορῶν καὶ
of-kithara-playing (the)-discover the god clear and from the choruses and
 τῶν θυσιῶν, ἃς προσῆγον μετ' αὐλῶν τῷ θεῷ· καθάπερ
the sacrifices which they-brought with auloi to-the god just-as
 ἄλλοι τε καὶ Ἀλκαῖος ἐν τινι τῶν ὕμνων ἱστορεῖ. καὶ ἡ ἐν
others both and Alcaeus in some of-the hymns relates also the in
 Δήλῳ δὲ τοῦ ἀγάλματος αὐτοῦ ἀφίδρυσις ἔχει ἐν μὲν τῇ
Delos and of-the statue of-him setting-up has in indeed the
 δεξιᾷ τόξον, ἐν δὲ τῇ ἀριστερᾷ Χάριτας, τῶν τῆς μουσικῆς
right (a)-bow in and the left Graces of-the of-the music
 ὀργάνων ἐκάστην τι ἔχουσιν· ἡ μὲν γὰρ λύραν κρατεῖ
instruments each something holding the indeed for (a)-lyre holds
 ἡ δ' αὐλοὺς ἡ δ' ἐν μέσῳ προσκεκλήνη ἔχει τῷ
the and auloi the and in (the)-middle set-against has to-the
 στόματι σύριγγα. ὅτι δ' οὗτος οὐκ ἐμὸς ὁ λόγος, Ἀντικλῆς
mouth (a)-pan-pipe that and this not mine the account Anticles
 καὶ Ἰστρος ἐν ταῖς Ἐπιφανείαις περὶ τούτων ἀφηγήσαντο.
and Ister in the Epiphanies about these narrated
 οὕτω δὲ παλαιὸν ἐστὶ τὸ ἀφίδρυμα τοῦτο, ὥστε τοὺς
so and ancient is the statue this that those
 ἐργασασμένους αὐτὸ τῶν καθ' Ἡρακλέα Μερόπων
having-wrought it of-those in-the-time-of Heracles Meropes
 φασὶν εἶναι. ἀλλὰ μὴν καὶ τῷ κατακομίζοντι παιδί τὴν
they-say to-be but indeed also for-the bringing-down boy the
 Τεμπικὴν δάφνην εἰς Δελφοὺς παρομαρτεῖ αὐλητῆς· καὶ
Tempean laurel to Delphi accompanies (an)-aulete and
 τὰ ἐξ Ὑπερβορέων δ' ἱερὰ μετ' αὐλῶν καὶ συρίγγων
the from Hyperboreans and offerings with auloi and pan-pipes
 καὶ κιθάρας εἰς τὴν Δήλὸν φασὶ τὸ παλαιὸν στέλλεσθαι.
and kithara to — Delos they-say in-the old(-time) to-have-been-sent

- ἄλλοι δὲ καὶ αὐτὸν τὸν θεόν φασιν αὐλῆσαι, καθάπερ
others and also himself the god say to-have-piped just-as
 ἱστορεῖ ὁ ἄριστος μελῶν ποιητὴς Ἀλκμάν· ἡ δὲ Κόριννα
relates the best of-songs maker Alcman the and Corinna
 καὶ διδαχθῆναί φησι τὸν Ἀπόλλω ὑπ' Ἀθηνᾶς αὐλεῖν.
also to-have-been-taught says — Apollo by Athena to-pipe
 σεμνὴ οὖν κατὰ πάντα ἡ μουσική, θεῶν εὔρημα οὔσα.
solemn then in all(-ways) the music of-gods (a)-discovery being
 15 ἐχρήσαντο δ' αὐτῇ οἱ παλαιοὶ κατὰ τὴν ἀξίαν, ὥσπερ
used and it the ancients according-to the worth just-as
 καὶ τοῖς ἄλλοις ἐπιτηδεύμασι πᾶσιν οἱ δὲ νῦν τὰ σεμνὰ
also the other pursuits all those and now the solemn(-parts)
 αὐτῆς παραιτησάμενοι, ἀντὶ τῆς ἀνδρώδους ἐκείνης καὶ
of-it having-rejected instead-of the manly that and
 θεοσπεσίας καὶ θεοῖς φίλης κατεαγυῖαν καὶ κωτῖλιν εἰς
divine and to-gods dear (a)-broken and chattering(-one) into
 τὰ θέατρα εἰσάγουσι. τοιγάρτοι Πλάτων ἐν τῷ τρίτῳ τῆς
the theaters they-bring therefore Plato in the third of-the
 Πολιτείας δυσχεραίνει τῇ τοιαύτῃ μουσικῇ τὴν γοῦν
Republic is-displeased with-the such music the accordingly
 Λύδιον ἁρμονίαν παραιτεῖται, ἐπειδὴ ὀξεῖα καὶ ἐπιτηδῆειος
Lydian harmonia he-rejects since (it-is)-sharp and fit
 πρὸς θρήνον. καὶ τὴν πρώτην σύστασιν αὐτῆς φασί
for lament and the first constitution of-it they-say
 θρηνώδη τινα γενέσθαι. Ὀλυμπον γὰρ πρῶτον Ἀριστοξένος
mournful some to-have-been Olympus for first Aristoxenus
 ἐν τῷ πρώτῳ περὶ Μουσικῆς ἐπὶ τῷ Πύθωνί φησιν
in the first On Music over — Python says
 ἐπικήδειον αὐλῆσαι Λυδιστί. εἰσὶ δ' οἱ Μελανιππίδην
(a)-dirge to-have-piped in-Lydian there-are and who Melanippides
 τούτου τοῦ μέλους ἄρξει Πίνδαρος δ' ἐν Παιᾶσιν
of-this the song to-have-begun say Pindar and in Paeans

ἐπὶ τοῖς Νιόβης γάμοις φησὶ Λύδιον ἀρμονίαν πρῶτον
at the of-Niobe marriage says Lydian harmonia first
 διδαχθῆναι. ἄλλοι δὲ Τόρηβον πρῶτον τῇ ἀρμονίᾳ
to-have-been-taught others and Torebus first the harmonia
 χρῆσασθαι, καθάπερ Διονύσιος ὁ Ἰαμβος ἱστορεῖ.
to-have-used just-as Dionysius the Iambus relates
 καὶ ἡ Μιξολύδιος δὲ παθητικὴ τίς ἐστι, τραγωδίας 16
also the Mixolydian and passionate a-certain is for-tragedies
 ἀρμόζουσα. Ἀριστόξενος δὲ φησι Σαπφῶ πρῶτην εὔρασθαι
fitting Aristoxenus and says Sappho first to-have-found
 τὴν Μιξολυδιστί, παρ' ἧς τοὺς τραγωδοποιοὺς μαθεῖν·
the Mixolydian from whom the tragedy-makers to-have-learned
 λαβόντας γοῦν αὐτοὺς συζεῦξαι τῇ Δωριστί, ἐπεὶ ἡ
having-taken accordingly them to-have-yoked with-the Dorian since the
 μὲν τὸ μεγαλοπρεπὲς καὶ ἀξιωματικὸν ἀποδίδωσιν ἡ δὲ
indeed the magnificent and dignified renders the and
 τὸ παθητικόν, μέμικται δὲ διὰ τούτων τραγωδία. ἐν
the passionate has-been-mixed and through these tragedy in
 δὲ τοῖς Ἱστορικοῖς τῆς Ἀρμονικῆς Πυθοκλείδην φησὶ τὸν
and the Historical(-notes) of-the Harmonics Pythoclides he-says the
 αὐλητὴν εὔρετὴν αὐτῆς γεγενέναι. Λῦσις δὲ Λαμπροκλέα
aulete (the)-discoverer of-it to-have-been Lysis and Lamprocles
 τὸν Ἀθηναῖον συνιδόντα, ὅτι οὐκ ἐνταῦθα ἔχει τὴν διάζευξιν,
the Athenian having-seen that not here it-has the disjunction
 ὅπου σχεδὸν ἅπαντες ᾤοντο, ἀλλ' ἐπὶ τὸ ὀξύ, τοιοῦτον
where nearly all thought but toward the sharp such
 αὐτῆς ἀπεργάσασθαι τὸ σχῆμα οἶον τὸ ἀπὸ παραμέσης ἐπὶ
of-it to-have-worked-out the figure such-as that from paramese to
 ὑπάτην ὑπατῶν. ἀλλὰ μὲν καὶ τὴν Ἐπανεμμένην Λυδιστί,
hypate of-the-lowest but indeed also the Relaxed Lydian

εἵπερ ἐναντία τῇ Μιξολυδιστί, παραπλησίαν οὔσαν τῇ
if-indeed opposite to-the Mixolydian similar being to-the
 Ἰάδι, ὑπὸ Δάμωνος εὐρήσθαι φασὶ τοῦ Ἀθηναίου.

Ionian by Damon to-have-been-found they-say the Athenian

- 17 τούτων δὴ τῶν ἁρμονιῶν τῆς μὲν θρηνωδικῆς
of-these indeed the harmoniai the indeed mournful
 τινος οὔσης τῆς δ' ἐκκελυμένης, εἰκότως ὁ Πλάτων
a-certain being the and dissolute reasonably — Plato
 παραιτησάμενος αὐτὸς τὴν Δωριστὶ ὡς πολεμικοῖς ἀνδράσι
having-rejected himself the Dorian as for-warlike men
 καὶ σώφροσιν ἁρμόζουσιν εἵλετο· οὐ μὰ Δί' ἀγνοήσας, ὡς
and temperate fitting chose not by Zeus being-ignorant as
 Ἀριστοξένος φησὶν ἐν τῷ δευτέρῳ τῶν Μουσικῶν, ὅτι καὶ
Aristoxenus says in the second of-the Musical(-works) that also
 ἐν ἐκείναις τι χρήσιμον ἦν πρὸς πολιτειῶν φυλακὴν·
in those something useful was toward of-constitutions (a)-guarding
 πάνυ γὰρ προσέσχε τῇ μουσικῇ ἐπιστήμῃ Πλάτων,
very for attended to-the musical science Plato
 ἀκουστής γενόμενος Δράκοντος τοῦ Ἀθηναίου καὶ Μετέλλου
(a)-bearer having-been of-Dracon the Athenian and of-Metellus
 τοῦ Ἀκραγαντίνου. ἀλλ' ἐπεὶ, ὡς προείπομεν, πολὺ τὸ
the Acragantine but since as we-said-before much the
 σεμνὸν ἐστὶν ἐν τῇ Δωριστί, ταύτην προτίμησεν· οὐκ
solemnity is in the Dorian this be-preferred not
 ἡγνόει δ' ὅτι πολλὰ Δώρια Παρθένεια ἅμα Ἀλκμᾶνι
he-was-ignorant and that many Dorian Maiden-songs together by-Alcman
 καὶ Πινδάρῳ καὶ Σιμωνίδῃ καὶ Βακχυλίδῃ πεποιήται,
and by-Pindar and by-Simonides and by-Bacchylides have-been-made
 ἀλλὰ μὲν καὶ ὅτι προσόδια καὶ παιᾶνες, καὶ μέντοι
but indeed also that processionals and paeans and however
 ὅτι καὶ τραγικοὶ οἵκτοί ποτε ἐπὶ τοῦ Δωρίου τρόπου
that also tragic laments sometime in the Dorian manner

ἐμελωδήθησαν καί τινα ἐρωτικὰ ἐξήρκει δ' αὐτῷ τὰ
were-sung and some love(-songs) sufficed and for-him the(-songs)
 εἰς τὸν Ἄρη καὶ Ἀθηνᾶν καὶ τὰ σπονδεῖα· ἐπιρρῶσαι
to — Ares and Athena and the libation(-songs) to-strengthen
 γὰρ ταῦτα ἱκανὰ ἀνδρὸς σώφρονος ψυχῇ· καὶ περὶ τοῦ
for these sufficient of-a-man temperate (the)-soul also about the
 Λυδίου δ' οὐκ ἡγνόει καὶ περὶ τῆς Ἰάδος· ἠπίστατο
Lydian and not he-was-ignorant also about the Ionian he-knew
 γὰρ ὅτι ἡ τραγωδία ταύτῃ τῇ μελοποιῇ κέχρηται.
for that the tragedy this the melody-making has-used
 καὶ οἱ παλαιοὶ δὲ πάντες οὐκ ἀπείρως ἔχοντες πασῶν 18
also the ancients and all not without-experience being of-all
 τῶν ἀρμονιῶν ἐνίαις ἐχρήσαντο· οὐ γὰρ ἡ ἄγνοια τῆς
the harmoniai some used not for the ignorance of-the
 τοιαύτης στενοχωρίας καὶ ὀλιγοχορδίας αὐτοῖς αἰτία
such narrowness and few-stringedness for-them (a)-cause
 γεγένηται· οὐδὲ δι' ἄγνοιαν οἱ περὶ Ὀλύμπου καὶ
has-become nor through ignorance those around Olympus and
 Τέρπανδρον καὶ οἱ ἀκολουθήσαντες τῇ τούτων προαιρέσει
Terpander and those having-followed the of-these preference
 περιεῖλον τὴν πολυχорδίαν τε καὶ ποικιλίαν. μαρτυρεῖ
removed the many-stringedness both and variety bear-witness
 γοῦν τὰ Ὀλύμπου τε καὶ Τερπάνδρου ποιήματα καὶ
accordingly the of-Olympus both and of-Terpander poems and
 τῶν τούτοις ὁμοιοτρόπων πάντων· ὀλιγόχορδα γὰρ
of-those to-these like-mannered all few-stringed for
 ὄντα καὶ ἀπλᾶ διαφέρει τῶν ποικίλων καὶ πολυχόρδων,
being and simple they-surpass the varied and many-stringed
 ὥς μηδένα δύνασθαι μιμήσασθαι τὸν Ὀλύμπου τρόπον,
so-that no-one to-be-able to-imitate the of-Olympus manner

ὕστερίζειν δὲ τούτου τοὺς ἐν τῷ πολυχόρδῳ τε καὶ
to-fall-short and of-him those in the many-stringed both and
 πολυτρόπῳ καταγινομένους.
many-mannered occupying-themselves

7 · SOTERICUS: CHOICE, NOT IGNORANCE

That the old composers dropped the third note in the spondaic manner deliberately is shown by their using it freely elsewhere: they wanted the character that its removal produces. Tragedy left the chromatic genus alone for the same reason, and Aeschylus and Phrynichus can no more be called ignorant of it than Pancrates. Soterichus closes with Plato's making of the soul in the Timaeus, where the numbers six, eight, nine, and twelve give the fourth, the fifth, and the octave.

- 19 Ὅτι δ' οἱ παλαιοὶ οὐ δι' ἄγνοιαν ἀπείχοντο τῆς
that and the ancients not through ignorance abstained from-the
 τρίτης ἐν τῷ σπονδειαζόντι τρόπῳ, φανερόν ποιεῖ ἢ ἐν
third(-note) in the spondee-playing manner evident makes the in
 τῇ κρούσει γενομένη χρήσις· οὐ γὰρ ἂν ποτ' αὐτῇ πρὸς
the plucking arising use not for ever at-any-time it toward
 τὴν παρυπάτην κεχρηῆσθαι συμφώνως, μὴ γνωρίζοντας τὴν
the parhyppate to-have-used concordantly not knowing the
 χρήσιν· ἀλλὰ δῆλον ὅτι τὸ τοῦ κάλλους ἦθος, ὃ
use but (it-is)-clear that the of-the beauty character which
 γίγνεται ἐν τῷ σπονδειακῷ τρόπῳ διὰ τὴν τῆς τρίτης
arises in the spondaic manner through the of-the third(-note)
 ἐξάίρεσιν, τοῦτ' ἦν τὸ τὴν αἴσθησιν αὐτῶν ἐπάγον ἐπὶ
removal this was the(-thing) the perception of-them leading-on to
 τὸ διαβιβάζειν τὸ μέλος ἐπὶ τὴν παρανήτην. ὁ αὐτὸς δὲ
the to-carry-across the melody to the paranete the same and
 λόγος καὶ περὶ τῆς νήτης· καὶ γὰρ ταύτη κατὰ μὲν τὴν
account also about the nete also for this in indeed the

κροῦσιν ἐχρῶντο, καὶ πρὸς παρανήτην διαφώνως καὶ πρὸς
plucking they-used both toward paranete discordantly and toward
 μέσην συμφώνως· κατὰ δὲ τὸ μέλος οὐκ ἐφαίνετο αὐτοῖς
mese concordantly in and the melody not it-seemed to-them
 οἰκεία εἶναι τῷ σπονδειακῷ τρόπῳ. οὐ μόνον δὲ τούτοις
proper to-be to-the spondaic manner not only and with-these
 ἀλλὰ καὶ τῇ συνημμένων νήτῃ οὕτω κέχρηται πάντες·
but also with-the of-the-conjoined nete thus have-used all
 κατὰ μὲν γὰρ τὴν κροῦσιν αὐτὴν διεφώνουν πρὸς τε
in indeed for the plucking itself they-made-discord toward both
 παρανήτην καὶ πρὸς παραμέσην, καὶ συνεφώνουν πρὸς
paranete and toward paramese and they-made-concord toward
 τε μέσην καὶ πρὸς λιχανόν· κατὰ δὲ τὸ μέλος καὶ
both mese and toward lichanos in and the melody even-would
 αἰσχυνθῆναι τῷ χρησαμένῳ ἐπὶ τῷ γιγνομένῳ δι'
to-have-been-ashamed for-the (one)-having-used at the arising through
 αὐτὴν ἦθι. δῆλον δ' εἶναι καὶ ἐκ τῶν Φρυγίων, ὅτι
it character clear and to-be also from the Phrygian(-pieces) that
 οὐκ ἠγνόητο ὑπ' Ὀλύμπου τε καὶ τῶν ἀκολουθησάντων
not it-was-unknown by Olympus both and those having-followed
 ἐκεῖνῳ· ἐχρῶντο γὰρ αὐτῇ οὐ μόνον κατὰ τὴν κροῦσιν,
him they-used for it not only in the plucking
 ἀλλὰ καὶ κατὰ τὸ μέλος ἐν τοῖς Μητρώοις καὶ ἔν τισὶ
but also in the melody in the Metroa and in some
 τῶν Φρυγίων. δῆλον δὲ καὶ τὸ περὶ τῶν ὑπατῶν,
of-the Phrygian(-pieces) clear and also the(-matter) about the hypatai
 ὅτι οὐ δι' ἄγνοιαν ἀπείχοντο ἐν τοῖς Δωρίοις τοῦ
that not through ignorance they-abstained in the Dorian(-pieces) from-the
 τετραχόρδου τούτου· αὐτίκα ἐπὶ τῶν λοιπῶν τόνων ἐχρῶντο,
tetrachord this at-once in the remaining keys they-used

- δηλονότι εἰδότες· διὰ δὲ τὴν τοῦ ἥθους φυλακὴν ἀφήρουν
evidently knowing through and the of-the character guarding they-removed
 ἐπὶ τοῦ Δωρίου τόνου, τιμῶντες τὸ καλὸν αὐτοῦ.
in the Dorian key honoring the noble(-quality) of-it
 20 οἶόν τι καὶ ἐπὶ τῶν τῆς τραγωδίας ποιητῶν· τῷ γὰρ
such-as something also in the of-the tragedy poets the for
 χρωματικῷ γένει καὶ τῷ ῥυθμῷ τραγωδία μὲν οὐδέπω καὶ
chromatic genus and the rhythm tragedy indeed not-yet even
 τήμερον κέχρηται, κιθάρα δέ, πολλαῖς γενεαῖς πρεσβύτερα
today has-used (the)-kithara and by-many generations older
 τραγωδίας οὔσα, ἐξ ἀρχῆς ἐχρήσατο. τὸ δὲ χρῶμα
than-tragedy being from (the)-beginning used(-it) the and chroma
 ὅτι πρεσβύτερόν ἐστι τῆς ἀρμονίας, σαφές. δεῖ γὰρ
that older is than-the harmonia (is)-plain must for
 δηλονότι κατὰ τὴν τῆς ἀνθρωπίνης φύσεως ἔντευξιν καὶ
evidently by the of-the human nature encounter and
 χρῆσιν τὸ πρεσβύτερον λέγειν· κατὰ γὰρ αὐτὴν τὴν τῶν
use the older to-mean by for itself the of-the
 γενῶν φύσιν οὐκ ἔστιν ἕτερον ἐτέρου πρεσβύτερον. εἰ οὖν
genera nature not is one than-another older if then
 τις Αἰσχύλον ἢ Φρύνιχον φαίη δι' ἄγνοιαν ἀπεσχῆσθαι
one Aeschylus or Phrynichus should-say through ignorance to-have-abstained
 τοῦ χρώματος, ἄρα γ' οὐκ ἂν ἄτοπος εἴη; ὁ γὰρ
from-the chroma surely at-least not ever absurd he-would-be the for
 αὐτὸς καὶ Παγκράτην ἂν εἴποι ἀγνοεῖν τὸ χρωματικὸν
same also Pancrates — would-say to-be-ignorant-of the chromatic
 γένος· ἀπέχετο γὰρ καὶ οὗτος ὡς ἐπὶ τὸ πολὺ τούτου,
genus abstained for also this(-man) as for the most-part from-it
 ἐχρήσατο δ' ἔν τισιν· οὐ δι' ἄγνοιαν οὖν δηλονότι,
be-used and in some(-pieces) not through ignorance then evidently
 ἀλλὰ διὰ τὴν προαίρεσιν ἀπέχετο· ἐξήλου γοῦν, ὡς
but through the choice he-abstained he-emulated accordingly as

αὐτὸς ἔφη, τὸν Πινδάρειόν τε καὶ Σιμωνίδειον τρόπον
 himself said the Pindaric both and Simonidean manner
 καὶ καθόλου τὸ ἀρχαῖον καλούμενον ὑπὸ τῶν νῦν.
 and in-general the ancient(-style) called by those now
 ὁ αὐτὸς δὲ λόγος καὶ περὶ Τυρταίου τε τοῦ
 the same and account also about Tyrtaeus both the
 Μαντινέως καὶ Ἀνδρέα τοῦ Κορινθίου καὶ Θρασύλλου τοῦ
 Mantinean and Andreas the Corinthian and Thrasyllos the
 Φλιασίου καὶ ἐτέρων πολλῶν, οὓς πάντας ἴσμεν διὰ
 Pblasian and others many whom all we-know through
 προαίρεσιν ἀπεσχημένους χρώματός τε καὶ μεταβολῆς
 choice having-abstained from-chroma both and from-modulation
 καὶ πολυχορδίας καὶ ἄλλων πολλῶν ἐν μέσῳ ὄντων
 and from-many-stringedness and of-others many in (the)-middle being
 ῥυθμῶν τε καὶ ἀρμονιῶν καὶ λέξεων καὶ μελοποιίας
 of-rhythms both and of-harmoniai and of-dictions and of-melody-making
 καὶ ἐρμηνείας. αὐτίκα Τηλεφάνης ὁ Μεγαρικὸς οὕτως
 and of-delivery at-once Telephanes the Megarian so
 ἐπολέμησε ταῖς σύριγξιν, ὥστε τοὺς αὐλοποιοὺς οὐδ'
 warred with-the syringes that the aulos-makers not-even
 ἐπιθεῖναι πώποτ' εἶασεν ἐπὶ τοὺς αὐλούς, ἀλλὰ καὶ τοῦ
 to-put-on ever he-allowed upon the auloi but also from-the
 Πυθικοῦ ἀγώνος μάλιστα διὰ ταῦτ' ἀπέστη. καθόλου
 Pythian contest chiefly through these(-things) he-stood-off in-general
 δ' εἴ τις τῷ μὴ χρῆσθαι τεκμαιρόμενος καταγνώσεται
 and if one by-the not to-use judging will-condemn
 τῶν μὴ χρωμένων ἄγνοιαν, πολλῶν ἂν τις φθάνοι
 of-those not using (for)-ignorance of-many ever one would-be-first
 καὶ τῶν νῦν καταγιγνώσκων οἶον, τῶν μὲν Δωριωνέων
 also of-those now condemning such-as of-the indeed Dorionians
 τοῦ Ἀντιγενιδείου τρόπου καταφρονούντων, ἐπειδὴπερ οὐ
 the Antigenidean manner despising since-indeed not

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χρῶνται αὐτῷ, τῶν δ' Ἀντιγενιδείων τοῦ Δωριωνείου διὰ
they-use it of-the and Antigenideans the Dorionian through
 τὴν αὐτὴν αἰτίαν τῶν κιθαρῳδῶν τοῦ Τιμοθείου τρόπου,
the same cause of-the kitharodes the Timothean manner
 σχεδὸν γὰρ ἀποπεφοιτήκασιν εἰς τε τὰ καττύματα καὶ εἰς
nearly for they-have-deserted into both the patchwork(-songs) and into
 τὰ Πολυεΐδου ποιήματα. πάλιν δ' αὖ εἴ τις καὶ περὶ τῆς
the of-Polyidus poems again and in-turn if one also about the
 ποικιλίας ὀρθῶς τε καὶ ἐμπείρως ἐπισκοποίη, τὰ τότε
variety rightly both and expertly should-examine the(-things) then
 καὶ τὰ νῦν συγκρίνων, εὔροι ἂν ἐν χρήσει οὔσαν καὶ
and the(-things) now comparing would-find — in use being also
 τότε τὴν ποικιλίαν, τῇ γὰρ περὶ τὰς ῥυθμοποιίας ποικιλία
then the variety the for about the rhythm-makings variety
 οὔση ποικιλωτέρα ἐχρήσαντο οἱ παλαιοί ἐτίμων γοῦν
being more-varied used the ancients they-honored accordingly
 τὴν ῥυθμικὴν ποικιλίαν, καὶ τὰ περὶ τὰς κρουματικὰς
the rhythmic variety and the(-matters) about the instrumental
 δὲ διαλέκτους τότε ποικιλωτέρα ἦν· οἱ μὲν γὰρ νῦν
and dialects then more-varied were those indeed for now
 φιλομαθεῖς οἱ δὲ τότε φιλόρρυθμοι. δῆλον οὖν ὅτι οἱ
(are)-learning-loving those and then rhythm-loving clear then that the
 παλαιοὶ οὐ δι' ἄγνοιαν ἀλλὰ διὰ προαίρεσιν ἀπείχοντο
ancients not through ignorance but through choice abstained
 τῶν κεκλασμένων μελῶν. καὶ τί θαυμαστόν; πολλὰ γὰρ
from-the broken songs and what (is)-wonderful many for
 καὶ ἄλλα τῶν κατὰ τὸν βίον ἐπιτηδευμάτων οὐκ ἀγνοεῖται
also other of-the in the life pursuits not is-unknown
 μὲν ὑπὸ τῶν χρωμένων, ἀπηλλοτριώται δ' αὐτῶν, τῆς
indeed by those using has-been-estranged and of-them the
 χρείας ἀφαιρεθείσης, διὰ τὸ εἰς ἔνια ἀπρεπές.
use having-been-taken-away through the for some(-cases) unseemly(-ness)

δεδειγμένου δ' ὅτι ὁ Πλάτων οὐτ' ἀγνοία οὐτ' ἀπειρία 22
having-been-shown and that — Plato neither by-ignorance nor by-inexperience
 τὰ ἄλλα παρητήσατο ἀλλ' ὡς οὐ πρόποντα τοιαύτη
the others rejected but as not befitting such
 πολιτεία, δείξομεν ἐξῆς ὅτι ἔμπειρος ἀρμονίας ἦν. ἐν
(a)-polity we-shall-show next that experienced of-harmonia he-was in
 γοῦν τῇ ψυχογονία τῇ ἐν τῷ Τιμαίῳ τὴν τε περὶ τὰ
accordingly the soul-generation the in the Timaeus the both about the
 μαθήματα καὶ μουσικὴν σπουδὴν ἐπεδείξατο ὧδέ πως·
sciences and music zeal he-displayed thus somehow
 καὶ μετὰ ταῦτα συνεπλήρου τά τε διπλάσια καὶ τὰ
and after these he-filled-up the both double and the
 τριπλάσια διαστήματα, μοίρας τ' ἐκείθεν ἀποτέμνων καὶ
triple intervals portions both thence cutting-off and
 τιθεὶς εἰς τὸ μεταξὺ τούτων· ὥστ' ἐν ἐκάστῳ διαστήματι
placing into the between of-these so-that in each interval
 δύο εἶναι μεσότητα. ἀρμονικῆς γὰρ ἦν ἐμπειρίας τοῦτο
two to-be means of-harmonic for was of-experience this
 τὸ προοίμιον, ὡς αὐτίκα δείξομεν. τρεῖς εἰσι μεσότητες αἱ
the prelude as at-once we-shall-show three are means the
 πρώται, ἀφ' ὧν λαμβάνεται πᾶσα μεσότης, ἀριθμητική,
first from which is-taken every mean arithmetic
 ἀρμονική, γεωμετρικὴ. τούτων ἡ μὲν ἴσῳ ἀριθμῷ
harmonic geometric of-these the one by-an-equal number
 ὑπερέχει καὶ ὑπερέχεται ἡ δ' ἴσῳ λόγῳ ἡ δ' οὐτε
exceeds and is-exceeded the other by-an-equal ratio the other neither
 λόγῳ οὐτ' ἀριθμῷ, ὁ τοίνυν τὴν ψυχικὴν ἀρμονίαν
by-ratio nor by-number the(-man) accordingly the psychic harmony
 τῶν τεσσάρων στοιχείων καὶ τὴν αἰτίαν τῆς πρὸς ἄλληλα
of-the four elements and the cause of-the toward one-another
 ἐξ ἀνομοίων συμφωνίας δεῖξαι ἀρμονικῶς βουληθεὶς ἐν
from unlike(-things) concord to-show harmonically having-wished in

ἐκάστω διαστήματι δύο μεσότηας ψυχικὰς ἀπέφηνε κατὰ
each interval two means psychic be-declared by
 τὸν μουσικὸν λόγον. τῆς γὰρ διὰ πασῶν ἐν μουσικῇ
the musical ratio of-the for through all in music
 συμφωνίας δύο διαστήματα μέσα εἶναι συμβέβηκεν, ὧν
concord two intervals middle to-be it-has-befallen of-which
 τὴν ἀναλογίαν δείξομεν. ἡ μὲν γὰρ διὰ πασῶν ἐν
the proportion we-shall-show the indeed for through all in
 διπλασίονι λόγῳ θεωρεῖται· ποιήσει δ' εἰκόνας χάριν
double ratio is-observed will-make and of-an-image for-the-sake
 τὸν διπλάσιον λόγον κατ' ἀριθμὸν τὰ ἕξ καὶ τὰ δώδεκα·
the double ratio by number the six and the twelve
 ἔστι δὲ τοῦτο τὸ διάστημα ἀφ' ὑπάτης μέσων ἐπὶ νήτην
is and this the interval from hypate of-the-middle to nete
 διεzeugμένων. ὧντων οὖν τῶν ἕξ καὶ δώδεκα ἄκρων, ἔχει
of-the-disjoined being then the six and twelve extremes has
 ἡ μὲν ὑπάτη μέσων τὸν τῶν ἕξ ἀριθμόν, ἡ δὲ νήτη
the indeed hypate of-the-middle the of-the six number the and nete
 διεzeugμένων τὸν τῶν δώδεκα. λαβεῖν δὴ λοιπὸν χρὴ
of-the-disjoined the of-the twelve to-take indeed remaining one-must
 πρὸς τούτοις ἀριθμοὺς τοὺς μεταξὺ πίπτοντας· ὧν οἱ
besides these numbers the between falling of-which the
 ἄκροι ὁ μὲν ἐπίτριτος ὁ δ' ἡμιόλιος φανήσεται· εἰσὶ δ'
extremes the one epitrititic the other hemiolic will-appear are and
 ὁ τῶν ὀκτῶ καὶ τῶν ἐννέα· τῶν γὰρ ἕξ τὰ μὲν ὀκτῶ
the of-the eight and of-the nine of-the for six the indeed eight
 ἐπίτριτα τὰ δ' ἐννέα ἡμιόλια. τὸ μὲν ἐν ἄκρον τοιοῦτο,
(are)-epitrititic the and nine hemiolic the indeed one extreme such
 τὸ δ' ἄλλο τὸ τῶν δώδεκα τῶν μὲν ἐννέα ἐπίτριτα τῶν
the and other the of-the twelve than-the indeed nine epitrititic than-the
 δ' ὀκτῶ ἡμιόλια. τούτων οὖν τῶν ἀριθμῶν ὧντων μεταξὺ
and eight hemiolic of-these then the numbers being between

τῶν ἕξ καὶ τῶν δώδεκα καὶ τοῦ διὰ πασῶν διαστήματος
the six and the twelve and the through all interval
 ἐκ τοῦ διὰ τεττάρων καὶ τοῦ διὰ πέντε συνεστῶτος,
from the through four and the through five composed
 δῆλον ὅτι ἕξει ἡ μὲν μέση τὸν τῶν ὀκτῶ ἀριθμόν, ἡ
clear that will-have the indeed mese the of-the eight number the
 δὲ παραμέση τὸν τῶν ἐννέα. τούτου γενομένου, ἕξει ἡ
and paramese the of-the nine this having-become will-have the
 ὑπάτη πρὸς μέσην ὡς παραμέση πρὸς νήτην διεzeugμένων
hypate toward mese as paramese toward nete of-the-disjoined
 ἀπὸ γὰρ ὑπάτης μέσων διὰ τεττάρων ἐπὶ μέσην, ἀπὸ
from for hypate of-the-middle through four to mese from
 δὲ παραμέσης ἐπὶ νήτην διεzeugμένων διὰ πασῶν. ἡ
and paramese to nete of-the-disjoined through all the
 αὐτὴ δ' ἀναλογία καὶ ἐπὶ τῶν ἀριθμῶν εὑρίσκεται ὡς γὰρ
same and proportion also in the numbers is-found as for
 ἔχει τὰ ἕξ πρὸς τὰ ὀκτώ, οὕτω τὰ ἐννέα πρὸς τὰ δώδεκα·
holds the six toward the eight so the nine toward the twelve
 καὶ ὡς ἔχει τὰ ἕξ πρὸς τὰ ἐννέα, οὕτω τὰ ὀκτώ πρὸς τὰ
and as holds the six toward the nine so the eight toward the
 δώδεκα· ἐπίτριτα γὰρ τὰ μὲν ὀκτῶ τῶν ἕξ τὰ δὲ δώδεκα
twelve epitritic for the indeed eight of-the six the and twelve
 τῶν ἐννέα, ἡμιόλια δὲ τὰ μὲν ἐννέα τῶν ἕξ τὰ δὲ δώδεκα
of-the nine hemiolic and the indeed nine of-the six the and twelve
 τῶν ὀκτώ. ἀρκέσει τὰ εἰρημένα εἰς τὸ ἐπιδεδειχέναι
of-the eight will-suffice the(-things) said for the to-have-demonstrated
 ἣν εἶχε περὶ τὰ μαθήματα σπουδὴν καὶ ἐμπειρίαν Πλάτων.
which he-had about the sciences zeal and experience Plato

Aristotle called harmonia heavenly, four-parted, and fitted by two means, the arithmetic and the harmonic, which the numbers of the notes display. Because they held this, the Greeks trained their young in music and used it at every serious occasion, the Spartans piping the Kastoreion as they advanced in order against the enemy and the Cretans going into danger to the lyre; in the older times there was no theater at all, and music lived in the temples. The ancients did add things — Terpander the Dorian nete and the scolia, Archilochus the trimeter — but always what suited the gravity of the art.

- 23 ὅτι δὲ σεμνὴ ἡ ἀρμονία καὶ θεῖόν τι καὶ μέγα,
that and solemn the harmonia and divine something and great
 Ἀριστοτέλης ὁ Πλάτωνος ταυτὶ λέγει· ἡ δ' ἀρμονία ἐστὶν
Aristotle the of-Plato(-pupil) these-very says the and harmonia is
 οὐρανία, τὴν φύσιν ἔχουσα θείαν καὶ καλὴν καὶ δαμονίαν
heavenly the nature having divine and fair and daemonic
 τετραμερὴς δὲ τῇ δυνάμει πεφυκυῖα δύο μεσότητος
four-parted and in-the power being-fitted two means
 ἔχει, ἀριθμητικὴν τε καὶ ἀρμονικὴν φαίνεται τε τὰ μέρη
it-has arithmetic both and harmonic appear both the parts
 αὐτῆς καὶ τὰ μεγέθη καὶ αἱ ὑπεροχαὶ κατ' ἀριθμὸν καὶ
of-it and the magnitudes and the excesses by number and
 ἰσομετρίαν· ἐν γὰρ δυοὶ τετραχόρδοις ρυθμίζεται τὰ μέλη.
equal-measure in for two tetrachords are-ordered the melodies
 ταῦτα μὲν τὰ ρητά. συνεστάναι δ' αὐτῆς τὸ σῶμα
these indeed the spoken(-things) to-be-composed and of-it the body
 ἔλεγεν ἐκ μερῶν ἀνομοίων, συμφωνούντων μέντοι πρὸς
he-said from parts unlike concording however toward
 ἀλλήλα· ἀλλὰ μὴν καὶ τὰς μεσότητος αὐτῆς κατὰ τὸν
one-another but indeed also the means of-it by the
 ἀριθμητικὸν λόγον συμφωνεῖν. τὸν γὰρ νέατον πρὸς τὸν
arithmetic ratio to-concord the for nete toward the

ὕπατον ἐκ διπλασίου λόγου ἡρμοσμένον τὴν διὰ πασῶν
hypate from double ratio attuned the through all
 συμφωνίαν ἀποτελεῖν. ἔχει γάρ, ὡς προείπομεν, τὸν νέατον
concord to-produce has for as we-said-before the nete
 δώδεκα μονάδων τὸν δ' ὕπατον ἕξ, τὴν δὲ παραμέσην
twelve of-units the and hypate six the and paramese
 συμφωνοῦσαν πρὸς ὑπάτην καθ' ἡμιόλιον λόγον ἐννέα
concording with hypate by hemiolic ratio nine
 μονάδων· τῆς δὲ μέσης ὀκτὼ εἶναι μονάδας ἐλέγομεν.
of-units of-the and mese eight to-be units we-said
 συγκεῖσθαι δὲ διὰ τούτων τῆς μουσικῆς τὰ κυριώτατα
to-be-composed and through these of-the music the most-authoritative
 διαστήματα συμβαίνει, τό τε διὰ τεσσάρων ὃ ἐστι κατὰ
intervals it-befalls the both through four which is by
 τὸν ἐπίτριτον λόγον, καὶ τὸ διὰ πέντε ὃ ἐστι κατὰ
the epitritic ratio and the through five which is by
 τὸν ἡμιόλιον λόγον, καὶ τὸ διὰ πασῶν ὃ ἐστι κατὰ
the hemiolic ratio and the through all which is by
 τὸν διπλασίον· ἀλλὰ γὰρ καὶ τὸν ἐπόγδοον σώζεσθαι, ὅς
the double but for also the epogdoic to-be-preserved which
 ἐστι κατὰ τὸν τονιαῖον λόγον. ταῖς αὐταῖς δ' ὑπεροχαῖς
is by the tone-sized ratio by-the same and excesses
 ὑπερέχειν καὶ ὑπερέχεσθαι τῆς ἀρμονίας τὰ μέρη ὑπὸ
to-exceed and to-be-exceeded of-the harmonia the parts by
 τῶν μερῶν καὶ τὰς μεσότητας ὑπὸ τῶν μεσοτήτων κατὰ
the parts and the means by the means by
 τε τὴν ἐν ἀριθμοῖς ὑπεροχὴν καὶ κατὰ τὴν γεωμετρικὴν
both the in numbers excess and by the geometric
 δύναμιν συμβαίνει. ἀποφαίνει γοῦν αὐτὰς Ἀριστοτέλης
power it-befalls declares accordingly them Aristotle
 τὰς δυνάμεις ἐχούσας τοιαύτας, τὴν μὲν νεάτην τῆς
the powers having such the indeed nete than-the

μέσης τῷ τρίτῳ μέρει τῷ αὐτῆς ὑπερέχουσιν, τὴν δ'
mese by-the third part the of-itself exceeding the and
 ὑπάτην ὑπὸ τῆς παραμέσης ὑπερεχομένην ὁμοίως· ὥς
hypate by the paramese being-exceeded likewise so-that
 γίνεσθαι τὰς ὑπεροχὰς τῶν πρὸς τι τοῖς γὰρ
to-become the excesses of-the(-class) toward something by-the for
 αὐτοῖς μέρεσιν ὑπερέχουσι καὶ ὑπερέχονται τοῖς γοῦν
same parts they-exceed and are-exceeded by-the accordingly
 αὐτοῖς λόγοις οἱ ἄκροι τῆς μέσης καὶ παραμέσης
same ratios the extremes than-the mese and paramese
 ὑπερέχουσι καὶ ὑπερέχονται, ἐπιτρίτῳ καὶ ἡμιολίῳ. τοιαύτη
exceed and are-exceeded by-an-epitritic and by-a-hemiolic such
 δὴ ὑπεροχὴ ἐστὶν ἡ ἀρμονική. ἡ δὲ τῆς νεάτης ὑπεροχὴ
indeed (an)-excess is the harmonic the and of-the nete excess
 καὶ τῆς μέσης κατ' ἀριθμητικὸν λόγον ἴσῳ μέρει
and of-the mese by arithmetic ratio by-an-equal part
 τὰς ὑπεροχὰς ἐμφαίνουσιν, ὡσαύτως καὶ ἡ παραμέση
the excesses show likewise also the paramese
 τῆς ὑπάτης· τῆς γὰρ μέσης ἡ παραμέση κατὰ τὸν
than-the hypate than-the for mese the paramese by the
 ἐπὶ γόδοον λόγον ὑπερέχει, πάλιν ἡ νεάτη τῆς ὑπάτης
epogdoic ratio exceeds again the nete than-the hypate
 διπλασίᾳ ἐστίν, ἡ δὲ παραμέση τῆς ὑπάτης ἡμιόλιος,
double is the and paramese than-the hypate hemiolic
 ἡ δὲ μέση ἐπιτρίτος πρὸς ὑπάτην ἡρμοσται. καὶ τοῖς
the and mese epitritic toward hypate has-been-attuned and in-the
 μὲν μέρεσι καὶ τοῖς πλήθεσι καὶ κατ' Ἀριστοτέλην
indeed parts and in-the multitudes also according-to Aristotle
 ἡ ἀρμονία οὕτως ἔχουσα πέφυκε.
the harmonia thus holding is-fitted

συνέστηκε δὲ φυσικώτατα ἔκ τε τῆς ἀπείρου καὶ 24
it-is-composed and most-naturally from both the unlimited and
 περαινούσης καὶ ἐκ τῆς ἀρτιοπερίσσου φύσεως καὶ αὐτὴ
limiting and from the even-odd nature both itself
 καὶ τὰ μέρη αὐτῆς πάντα· αὐτὴ μὲν γὰρ ὅλη ἀρτία
and the parts of-it all itself indeed for whole even
 ἐστί, τετραμερὴς οὖσα τοῖς ὅροις· τὰ δὲ μέρη αὐτῆς καὶ
is four-parted being in-the terms the and parts of-it and
 οἱ λόγοι ἄρτιοι καὶ περισσοὶ καὶ ἀρτιοπερίσσοι. τὴν μὲν
the ratios (are)-even and odd and even-odd the indeed
 γὰρ νεάτην ἔχει ἀρτίαν ἐκ δώδεκα μονάδων, τὴν δὲ
for nete it-has even from twelve units the and
 παραμέσσην περισσὴν ἐξ ἐννέα μονάδων, τὴν δὲ μέσσην
paramese odd from nine units the and mese
 ἀρτίαν ἐξ ὀκτώ μονάδων, τὴν δ' ὑπάτην ἀρτιοπερίσσον,
even from eight units the and hypate even-odd
 ἐξ μονάδων οὖσαν. οὕτω δὲ πεφυκυῖα αὐτὴ τε καὶ τὰ
six of-units being thus and being-fitted itself both and the
 μέρη αὐτῆς πρὸς ἄλληλα ταῖς ὑπεροχαῖς τε καὶ τοῖς
parts of-it toward one-another in-the excesses both and in-the
 λόγοις, ὅλη θ' ὅλη καὶ τοῖς μέρεσι συμφωνεῖ.
ratios whole both with-whole and in-the parts concords
 ἀλλὰ μὴν καὶ αἱ αἰσθήσεις αἱ τοῖς σώμασιν ἐγγιγνόμεναι, 25
but indeed also the senses the in-the bodies arising
 αἱ μὲν, οὐράναι θείαι οὖσαι, μετὰ θεοῦ τὴν αἴσθησιν διὰ
the indeed heavenly divine being with god the perception through
 τὴν ἁρμονίαν παρεχόμεναι τοῖς ἀνθρώποις, ὅψις τε καὶ
the harmonia affording to-the men sight both and
 ἀκοή, μετὰ φωνῆς καὶ φωτὸς τὴν ἁρμονίαν ἐπιφαίνουσι·
bearing with voice and light the harmonia display
 καὶ ἄλλαι δ' αὐταῖς ἀκόλουθοι, αἰσθήσεις, καθ' ἁρμονίαν
also other and to-them consequent senses by harmonia

- συνεστᾶσι· πάντα γὰρ καὶ αὗται ἐπιτελοῦσιν οὐκ ἄνευ
are-composed all for also these accomplish not without
 ἁρμονίας, ἐλάττους μὲν ἐκείνων οὔσαι οὐκ ἄπο δ' ἐκείνων·
harmonia lesser indeed than-those being not apart and from-those
 ἐκεῖναι γὰρ ἅμα θεοῦ παρουσία παραγιγνόμεναι τοῖς
those for with of-god presence coming to-the
 σώμασι κατὰ λογισμὸν ἰσχυράν τε καὶ καλὴν φύσιν ἔχουσι.
bodies by reckoning (a)-strong both and fair nature have
 26 φανερόν οὖν ἐκ τούτων, ὅτι τοῖς παλαιοῖς τῶν Ἑλλήνων
evident then from these that to-the ancients of-the Greeks
 εἰκότως μάλιστα πάντων ἐμέλησε πεπαιδευθῆναι μουσικῇν.
reasonably most of-all it-mattered to-have-been-trained in-music
 τῶν γὰρ νέων τὰς ψυχὰς ᾤοντο δεῖν διὰ μουσικῆς
of-the for young the souls they-thought (it)-necessary through music
 πλάττειν τε καὶ ρυθμίζειν ἐπὶ τὸ εὖσχημον, χρησίμης
to-mold both and to-order toward the seemly useful
 δηλονότι τῆς μουσικῆς ὑπαρχούσης πρὸς πάντα καιρὸν
evidently the music being for every occasion
 καὶ πᾶσαν ἐσπουδασμένην πράξιν, προηγουμένως δὲ πρὸς
and every earnest action chiefly and for
 τοὺς πολεμικοὺς κινδύνους· πρὸς οὓς οἱ μὲν αὐλοῖς
the warlike dangers for which the-some indeed auloi
 ἐχρῶντο, καθάπερ Λακεδαιμόνιοι, παρ' οἷς τὸ καλούμενον
used just-as Lacedaemonians among whom the called
 Καστόρειον ἠυλεῖτο μέλος, ὁπότε τοῖς πολεμίοις ἐν
Kastoreion was-piped melody whenever the enemies in
 κόσμῳ προσήεσαν μαχεσόμενοι· οἱ δὲ καὶ πρὸς λύραν
order they-approached about-to-fight the-others and also to (a)-lyre
 ἐποιοῦν τὴν πρόσοδον τὴν πρὸς τοὺς ἐναντίους, καθάπερ
made the approach the toward the opponents just-as
 ἱστοροῦνται μέχρι πολλοῦ χρήσασθαι τῷ τρόπῳ τούτῳ
are-related until long to-have-used the manner this

τῆς ἐπὶ τοὺς πολεμικοὺς κινδύνους ἐξόδου Κρηῆτες. οἱ
of-the to the warlike dangers going-out Cretans the-others
 δ' ἔτι καὶ καθ' ἡμᾶς σάλπιγξι διατελοῦσι χρώμενοι.
and still even in our(-time) trumpets continue using
 Ἀργεῖοι δὲ πρὸς τὴν τῶν Σθενείων τῶν καλουμένων παρ'
Argives and for the of-the Sthenecia the called among
 αὐτοῖς πάλην ἐχρῶντο τῷ αὐλῷ τὸν δ' ἀγῶνα τοῦτον
them wrestling used the aulos the and contest this
 ἐπὶ Δαναῷ μὲν τὴν ἀρχὴν τεθῆναί φασιν, ὕστερον δ'
for Danaus indeed the beginning to-have-been-set they-say later and
 ἀνατεθῆναι Διὶ Σθενίῳ· οὐ μὲν ἀλλ' ἔτι καὶ νῦν τοῖς
to-have-been-dedicated to-Zeus Sthenios not indeed but still even now for-the
 πεντάθλοις νενόμισται προσαυλεῖσθαι οὐδὲν μὲν κεκριμένον
pentathletes it-is-customary to-be-piped-to nothing indeed approved
 οὐδ' ἀρχαῖον, οὐδ' οἷον ἐνομίζετο παρὰ τοῖς ἀνδράσιν
nor ancient nor such-as was-customary among the men
 ἐκείνοις, ὥσπερ τὸ ὑπὸ Ἰέρακος πεποιημένον πρὸς τὴν
those just-as the(-piece) by Hierax made for the
 ἀγωνίαν ταύτην, ὃ ἐκαλεῖτο Ἐνδρομή· ὅμως δὲ καὶ εἰ
contest this which was-called Endrome nevertheless and even if
 ἀσθενές τι καὶ οὐ κεκριμένον, ἀλλ' οὖν προσαυλεῖται.
weak something and not approved but then it-is-piped-to
 ἐπὶ μέντοι τῶν ἔτι ἀρχαιοτέρων οὐδ' εἰδέναι φασὶ 27
in however the still more-ancient(-times) not-even to-have-known they-say
 τοὺς Ἕλληνας τὴν θεατρικὴν μουσαν· ὅλην δ' αὐτῆς τὴν
the Greeks the theatrical muse whole and of-it the
 ἐπιστήμην πρὸς τε θεῶν τιμὴν καὶ τὴν τῶν νέων παιδείουσιν
science for both of-gods honor and the of-the young education
 παραλαμβάνεσθαι, μηδὲ τὸ παράπαν ἤδη θεάτρου παρὰ τοῖς
to-be-employed and-not the at-all yet (a)-theater among the
 ἀνδράσιν ἐκείνοις κατεσκευασμένου, ἀλλ' ἔτι τῆς μουσικῆς
men those having-been-built but still the music

ἐν τοῖς ἱεροῖς ἀναστρεφομένης, ἐν οἷς τιμὴν τε τοῦ θεοῦ
in the temples dwelling in which honor both of-the divine
 διὰ ταύτης ἐποιοῦντο καὶ τῶν ἀγαθῶν ἀνδρῶν ἐπαίνους
through this they-made and of-the good men praises
 εἰκὸς δ' εἶναι ὅτι τὸ θέατρον ὕστερον καὶ τὸ θεωρεῖν
likely and to-be that the theater later and the to-behold
 πολὺ πρότερον ἀπὸ τοῦ θεοῦ τὴν προσηγορίαν ἔλαβεν. ἐπὶ
much earlier from the god the appellation took in
 μέντοι τῶν καθ' ἡμᾶς χρόνων τοσοῦτον ἐπιδέδωκε τὸ τῆς
however the by us times so-much has-increased the of-the
 διαφθορᾶς εἶδος, ὥστε τοῦ μὲν παιδευτικοῦ τρόπου μηδεμίαν
corruption kind that of-the indeed educative manner no
 μνηεῖαν μηδ' ἀντίληψιν εἶναι, πάντας δὲ τοὺς μουσικῆς
memory nor grasp to-be all and those of-music
 ἀποτομένους πρὸς τὴν θεατρικὴν προσκεχωρηκέναι μούσαν.
touching toward the theatrical to-have-gone-over muse

28 εἴποι τις ὦ τᾶν, οὐδὲν οὖν ὑπὸ τῶν ἀρχαίων
might-say someone O good-sir nothing then by the ancients
 προσεξεύρηται καὶ κεκαινοτόμηται; φημὶ καὶ αὐτός, ὅτι
has-been-further-discovered and has-been-innovated I-say also myself that
 προσεξεύρηται, ἀλλὰ μετὰ τοῦ σεμνοῦ καὶ πρέποντος.
it-has-been-further-discovered but with the solemn and befitting
 οἱ γὰρ ἱστορήσαντες τὰ τοιαῦτα Τερπάνδρῳ μὲν τὴν τε
the for having-recorded the such to-Terpander indeed the and
 Δωρίον νήτην προσετίθεσαν, οὐ χρησαμένων αὐτῇ τῶν
Dorian nete attributed not having-used it those
 ἔμπροσθεν κατὰ τὸ μέλος· καὶ τὸν Μιξολύδιον δὲ τόνον ὅλον
before in the melody and the Mixolydian and key whole
 προσεξεύρησθαι λέγεται, καὶ τὸν τῆς ὀρθίου μελωδίας
to-have-been-further-discovered it-is-said and the of-the Orthios melody
 τρόπον τὸν κατὰ τοὺς ὀρθίους πρὸς τε τῷ ὀρθίῳ καὶ τὸν
manner the by the Orthioi besides both the Orthios also the

σημαντὸν τροχαῖον. ἔτι δέ, καθάπερ Πίνδαρός φησι, καὶ
 marked trochee further and just-as Pindar says also
 τῶν σκολιῶν μελῶν Τέρπανδρος εὐρετῆς ἦν· ἀλλὰ μὴν
 of-the scolia songs Terpander (the)-discoverer was but indeed
 καὶ Ἀρχίλοχος τὴν τῶν τριμέτρων ῥυθμοποιίαν προσεξεῦρε
 also Archilochus the of-the trimeters rhythm-making further-discovered
 καὶ τὴν εἰς τοὺς οὐχ ὁμογενεῖς ῥυθμοὺς ἔντασιν καὶ τὴν
 and the into the not same-kind rhythms stretching and the
 παρακαταλογὴν καὶ τὴν περὶ ταῦτα κροῦσιν· πρῶτῳ δ'
 recitative and the about these accompaniment to-first and
 αὐτῷ τὰ τ' ἐπῳδὰ καὶ τὰ τετράμετρα καὶ τὸ κρητικὸν
 him the both epodes and the tetrameters and the cretic
 καὶ τὸ προσοδιακὸν ἀποδέδοται καὶ ἡ τοῦ ἡρώου αὔξησις,
 and the prosodiac are-attributed and the of-the heroic lengthening
 ὑπ' ἐνίων δὲ καὶ τὸ ἐλεγείον, πρὸς δὲ τούτοις ἢ τε τοῦ
 by some and also the elegiac besides and these the both of-the
 ἱαμβείου πρὸς τὸν ἐπιβατὸν παίωνα ἔντασις καὶ ἡ τοῦ
 iambic toward the mounting paean stretching and the of-the
 ηὔξημένου ἡρώου εἰς τε τὸ προσοδιακὸν καὶ τὸ κρητικόν·
 lengthened heroic into both the prosodiac and the cretic
 ἔτι δὲ τῶν ἱαμβείων τὸ τὰ μὲν λέγεσθαι παρὰ τὴν
 further and of-the iambs the the-some indeed to-be-spoken beside the
 κροῦσιν τὰ δ' ᾄδεσθαι, Ἀρχίλοχόν φησι καταδείξει,
 accompaniment the-others and to-be-sung Archilochus they-say to-have-shown
 εἰθ' οὕτω χρῆσασθαι τοὺς τραγικοὺς ποιητάς, Κρέξον δὲ
 then thus to-have-used the tragic poets Cræxus and
 λαβόντα εἰς διθυράμβων χρήσιν ἀγαγεῖν. οἶονται δὲ
 having-taken into of-dithyrambs use to-have-brought they-think and
 καὶ τὴν κροῦσιν τὴν ὑπὸ τὴν ᾠδὴν τοῦτον πρῶτον
 also the accompaniment the under the song this(-man) first
 εὑρεῖν, τοὺς δ' ἀρχαίους πάντας πρόσχορδα κρούειν.
 to-have-found the and ancients all in-unison to-strike

Polymnestus is credited with the key now called Hypolydian, and Olympus with the prosodiac and the choreus. Then Lasus, Melanippides, Philoxenus, and Timotheus multiplied the notes, and Pherecrates put Music on the comic stage as a maltreated woman, with Justice asking why and Poetry recounting the harm done by Melanippides, Cinesias, Phrynīs, and Timotheus. Aristoxenus tells of Telesias of Thebes, reared on Pindar and turned in middle life to the varied theatrical music, who tried both manners and could not succeed in the Philoxenean, because of his fine early training; the remedy is to imitate the ancient manner and set philosophy over music as its tutor.

- 29 Πολυμνάστω δὲ τόν θ' ὑπολύδιον νῦν ὀνομαζόμενον τόνον
to-Polymnestus and the both hypolydian now called key
ἀνατιθέασι, καὶ τὴν ἔκλυσιν καὶ τὴν ἐκβολὴν πολὺ μείζω
they-attribute and the eklysis and the ekbole much greater
πεποιηκέναι φασὶν αὐτόν. καὶ αὐτὸν δὲ τὸν Ὀλυμπον ἐκείνουν,
to-have-made they-say him and himself and — Olympus that
ὧ δὴ τὴν ἀρχὴν τῆς Ἑλληνικῆς τε καὶ νομικῆς μούσης
to-whom indeed the beginning of-the Greek both and nomic muse
ἀποδιδόασιν, τό τε τῆς ἀρμονίας γένος ἐξευρεῖν φασι, καὶ
they-assign the both of-the harmonia genus to-have-discovered they-say and
τῶν ῥυθμῶν τόν τε προσοδιακὸν ἐν ᾧ ὁ τοῦ Ἄρεως νόμος,
of-the rhythms the both prosodiac in which the — of-Ares nome
καὶ τὸν χορεῖον ᾧ πολλῶ κέχρηται ἐν τοῖς Μητροῦσι· ἔνιοι
and the choreus which much he-has-used in the Metroa some
δὲ καὶ τὸν βακχεῖον Ὀλυμπον οἶονται εὕρηκέναι. δηλοῖ δ'
and also the bacchius Olympus think to-have-found shows and
ἕκαστον τῶν ἀρχαίων μελῶν, ὅτι ταῦθ' οὕτως ἔχει. Λάσος
each of-the ancient songs that these thus hold Lasus
δ' ὁ Ἑρμιονεὺς εἰς τὴν διθυραμβικὴν ἀγωγὴν μεταστήσας
and the Hermionean into the dithyrambic movement having-shifted

τοὺς ῥυθμοὺς καὶ τῇ τῶν αὐλῶν πολυφωνία κατακολουθήσας

the rhythms and the of-the auloi many-voicedness having-followed

πλείοσί τε φθόγγοις καὶ διερριμμένοις χρησάμενος εἰς

more both notes and scattered having-used into

μετάθεσιν τὴν προϋπάρχουσαν ἤγαγε μουσικὴν.

(a)-transposition the pre-existing brought music

ὁμοίως δὲ καὶ Μελανιππίδης ὁ μελοποιὸς ἐπιγενόμενος οὐκ 30

likewise and also Melanippides the lyric-poet having-come-after not

ἐνέμεινε τῇ προϋπαρχούσῃ μουσικῇ, ἀλλ' οὐδὲ Φιλόξενος οὐδὲ

remained-in the pre-existing music but nor Philoxenus nor

Τιμόθεος· οὗτος γάρ, ἑπταφθόγγου τῆς λύρας ὑπαρχούσης

Timotheus this(-man) for seven-noted the lyre being

ἕως εἰς Τέρπανδρον τὸν Ἀντισσαῖον, διέρριψεν εἰς πλείονας

until to Terpander the Antissaean scattered(-it) into more

φθόγγους. ἀλλὰ γὰρ καὶ αὐλητικὴ ἀφ' ἀπλουστέρας εἰς

notes but for also aulos-playing from (a)-simpler into

ποικιλωτέραν μεταβέβηκε μουσικὴν· τὸ γὰρ παλαιόν, ἕως

(a)-more-varied has-passed music in-the for old(-time) until

εἰς Μελανιππίδην τὸν τῶν διθυράμβων ποιητὴν, συμβεβήκει

to Melanippides the of-the dithyramps maker it-had-befallen

τοὺς αὐλητὰς παρὰ τῶν ποιητῶν λαμβάνειν τοὺς μισθοὺς,

the auletes from the poets to-take the wages

πρωταγωνιστούσης δηλονότι τῆς ποιήσεως, τῶν δ' αὐλητῶν

playing-the-lead evidently the composition the and auletes

ὑπηρετούντων τοῖς διδασκάλοις· ὕστερον δὲ καὶ τοῦτο

serving the trainers later and also this

διεφθάρη, ὥς καὶ Φερεκράτη τὸν κωμικὸν εἰσαγαγεῖν

was-corrupted so-that also Pherecrates the comic to-have-brought-in

τὴν Μουσικὴν ἐν γυναικείῳ σχήματι, ὅλην κατηκισμένην

— *Music in (a)-female shape wholly maltreated*

τὸ σῶμα· ποιεῖ δὲ τὴν Δικαιοσύνην διαπνυθανομένην τὴν
the body he-makes and — Justice inquiring the
 αἰτίαν τῆς λώβης καὶ τὴν Ποίησιν λέγουσαν·
cause of-the outrage and — Poetry saying

λέξω μὲν οὐκ ἄκουσα· σοί τε γὰρ κλύειν

I-shall-speak indeed not unwilling for-you both for to-hear

ἐμοί τε λέξαι θυμὸς ἡδονὴν ἔχει.

for-me and to-speak (the)-heart pleasure has

ἐμοί γὰρ ἦρξε τῶν κακῶν Μελανιππίδης,

for-me for began the evils Melanippides

ἐν τοῖσι πρῶτος ὃς λαβὼν ἀνῆκε μέ

among them first who having-taken slackened me

χαλαρωτέραν τ' ἐποίησε χορδαῖς δώδεκα.

(more)-loose both made with-strings twelve

ἀλλ' οὖν ὅμως οὗτος μὲν ἦν ἀποχρῶν ἀνὴρ

but then nevertheless this(-man) indeed was (a)-sufficient man

ἔμοιγε *** πρὸς τὰ νῦν κακά.

for-me-at-least (lacuna) against the now evils

Κινησίας δέ μ' ὁ κατάρατος Ἀττικός,

Cinesias and me the accursed Attic(-man)

ἐξαρμονίους καμπὰς ποιῶν ἐν ταῖς στροφαῖς

out-of-tune bends making in the strophes

ἀπολώλεχ' οὕτως, ὥστε τῆς ποιήσεως

has-destroyed so that of-the composition

τῶν διθυράμβων, καθάπερ ἐν ταῖς ἀσπίσιν,

of-the dithyrambs just-as in the shields

ἀριστέρ' αὐτοῦ φαίνεται τὰ δεξιὰ.

left(-things) of-him appear the right(-things)

ἀλλ' οὖν ἀνεκτὸς οὗτος ἦν ὅμως ἐμοί.

but then bearable this(-man) was nevertheless to-me

Φρῦνις δ' ἴδιον στρόβιλον ἐμβαλὼν τινα
Phrynis and (his)-own whirlwind having-thrown-in some
 κάμπτων με καὶ στρέφων ὅλην διέφθορεν,
bending me and twisting wholly has-ruined
 ἐν πέντε χορδαῖς δώδεχ' ἀρμονίας ἔχων.
in five strings twelve harmoniai having
 ἀλλ' οὖν ἔμοιγε χούτος ἦν ἀποχρῶν ἀνὴρ·
but then for-me-at-least this-one-too was (a)-sufficient man
 εἰ γάρ τι καῖξήμαρτεν, αὖθις ἀνέλαβεν.
if for anything he-even-erred again he-recovered
 ὁ δὲ Τιμόθεός μ', ὦ φιλότατη, κατορώρυχε
the and Timotheus me O dearest has-buried
 καὶ διακέκναικ' αἰσχιστα. ποῖος οὗτος
and has-worn-away most-shamefully what-sort this-here
 ὁ Τιμόθεος; Μιλήσιός τις πυρρίας
— Timotheus (a)-Milesian some red-head
 κακά μοι παρέσχευ οὗτος, ἅπαντας οὓς λέγω
evils to-me provided this(-man) all whom I-mention
 παρελήλυθ' ἄδων ἐκτραπέλους μυρμηκίας.
has-surpassed singing monstrous ant-tracks
 κὰν ἐντύχη πού μοι βαδιζούση μόνη,
and-if be-meet somewhere me walking alone
 ἀπέδυσε κἀνέδυσε χορδαῖς δώδεκα.
he-stripped and-re-dressed with-strings twelve

καὶ Ἀριστοφάνης ὁ κωμικὸς μνημονεύει Φιλοξένου καὶ
and Aristophanes the comic mentions Philoxenus and
 φησιν, ὅτι εἰς τοὺς κυκλίους χοροὺς μέλη εἰσηνέγκατο. ἡ
says that into the circular choruses songs he-introduced the
 δὲ Μουσικὴ λέγει ταῦτα·
and Music says these

ἐξαρμονίους ὑπερβολαίους τ' ἀνοσίους
out-of-tune topmost(-notes) both unboly
 καὶ νιγλάρους, ὥσπερ τε τὰς ραφάνους ὅλην
and trills just-as and the radishes wholly
 καμπῶν με κατεμίστωσε.
of-bends me he-crammed

καὶ ἄλλοι δὲ κωμωδοποιοὶ ἔδειξαν τὴν ἀτοπίαν τῶν
and other and comedy-makers showed the absurdity of-those
 μετὰ ταῦτα τὴν μουσικὴν κατακεκερματικόντων.
after these the music having-minced-up

- 31 ὅτι δὲ παρὰ τὰς ἀγωγὰς καὶ τὰς μαθήσεις διόρθωσις ἢ
that and according-to the trainings and the learnings (a)-setting-right or
 διαστροφή γίγνεται, δῆλον Ἀριστόξενος ἐποίησε. τῶν γὰρ
(a)-distortion arises clear Aristoxenus made of-those for
 κατὰ τὴν αὐτοῦ ἡλικίαν φησὶ Τελεσία τῷ Θηβαίῳ συμβῆναι
in the his-own age he-says to-Telesias the Theban to-have-befallen
 νέῳ μὲν ὄντι τραφῆναι ἐν τῇ καλλίστῃ μουσικῇ καὶ
young indeed being to-have-been-reared in the finest music and
 μαθεῖν ἄλλα τε τῶν εὐδοκιμούντων καὶ δὴ καὶ τὰ
to-have-learned others both of-the esteemed(-composers) and indeed also the(-works)
 Πινδάρου, τὰ τε Διονυσίου τοῦ Θηβαίου καὶ τὰ Λάμπρου
of-Pindar the both of-Dionysius the Theban and the of-Lamprus
 καὶ τὰ Πρατίνου καὶ τῶν λοιπῶν, ὅσοι τῶν λυρικῶν
and the of-Pratinas and of-the rest as-many-as of-the lyric

ἄνδρες ἐγένοντο ποιηταὶ κρουμάτων ἀγαθοί· καὶ αὐλῆσαι
men became makers of-strains good and to-pipe
 δὲ καλῶς καὶ περὶ τὰ λοιπὰ μέρη τῆς συμπάσης παιδείας
and well and about the remaining parts of-the entire education
 ἱκανῶς διαπονηθῆναι· παραλλάξαντα δὲ τὴν τῆς ἀκμῆς
sufficiently to-have-labored having-passed and the of-the prime
 ἡλικίαν οὕτω σφόδρα ἐξαπατηθῆναι ὑπὸ τῆς σκηνικῆς
age so exceedingly to-have-been-deceived by the theatrical
 τε καὶ ποικίλης μουσικῆς, ὥς καταφρονῆσαι τῶν καλῶν
both and varied music so-as to-have-despised the fine(-works)
 ἐκείνων, ἐν οἷς ἀνετράφη, τὰ Φιλοξένου δὲ καὶ
those in which he-was-reared the(-works) of-Philoxenus and also
 Τιμοθέου ἐκμανθάνειν, καὶ τούτων αὐτῶν τὰ ποικιλώτατα
of-Timotheus to-learn-thoroughly and of-these themselves the most-varied
 καὶ πλείστην ἐν αὐτοῖς ἔχοντα καινοτομίαν· ὀρμήσαντά
and most in themselves having innovation having-set-out
 τ' ἐπὶ τὸ ποιεῖν μέλη καὶ διαπειρώμενον ἀμφοτέρων τῶν
both to the to-make songs and trying-thoroughly both the
 τρόπων, τοῦ τε Πινδαρείου καὶ Φιλοξενείου, μὴ δύνασθαι
manners the both Pindaric and Philoxenean not to-be-able
 κατορθοῦν ἐν τῷ Φιλοξενείῳ γένει· γεγενῆσθαι δ' αἰτίαν
to-succeed in the Philoxenean kind to-have-been and (the)-cause
 τὴν ἐκ παιδὸς καλλίστην ἀγωγὴν.
the from childhood finest training
 εἰ οὖν τις βούλεται μουσικῇ καλῶς καὶ κεκριμένως
if then one wishes music well and discerningly
 χρῆσθαι, τὸν ἀρχαῖον ἀπομιμείσθω τρόπον· ἀλλὰ μὴν
to-use the ancient let-him-imitate manner but indeed
 καὶ τοῖς ἄλλοις αὐτὴν μαθήμασιν ἀναπληρούτω καὶ
also with-the other it studies let-him-fill-out and
 φιλοσοφίαν ἐπιστησάτω παιδαγωγόν· αὕτη γὰρ ἱκανή
philosophy let-him-set-over (as)-tutor this for (is)-competent

κρῖναι τὸ μουσικῇ πρέπον μέτρον καὶ τὸ χρήσιμον.
to-judge the for-music befitting measure and the useful
 τριῶν γὰρ ὄντων μερῶν, εἰς ᾧ διήρηται τὴν καθόλου
three for being parts into which is-divided the general
 διαίρεσιν ἢ πᾶσα μουσική, διατόνου χρώματος ἁρμονίας,
division the whole music of-diatonic of-chroma of-harmonia
 ἐπιστήμονα χρὴ εἶναι τῆς τούτοις χρωμένης ποιήσεως
knowing one-must to-be of-the these using composition
 τὸν μουσικῇ προσιόντα καὶ τῆς ἐρμηνείας τῆς τὰ
the(-one) to-music approaching and of-the delivery the the
 πεποιημένα παραδιδούσης ἐπήβολον. πρῶτον μὲν οὖν
composed(-works) transmitting master first indeed then
 κατανοητέον, ὅτι πᾶσα μάθησις τῶν περὶ τὴν μουσικὴν
one-must-observe that every learning of-the(-things) about the music
 ἔθισμός ἐστιν οὐδέπω προσειληφώς τὸ τίνος ἔνεκα τῶν
(a)-habituation is not-yet having-taken-on the of-what for-the-sake of-the
 διδασκομένων ἕκαστον τῷ μαθητῶντι μαθητέον ἐστί.
taught(-things) each for-the learner must-be-learned is
 μετὰ δὲ τοῦτ' ἐνθυμητέον, ὅτι πρὸς τὴν τοιαύτην ἀγωγὴν
after and this one-must-consider that for the such training
 τε καὶ μάθησιν οὐδέπω προσάγεται τρόπων ἑξαρίθμησις·
both and learning not-yet is-brought-in of-manners (an)-enumeration
 ἀλλ' οἱ μὲν πολλοὶ εἰκῇ μαθητῶντι δ' ἂν τῷ
but the indeed many at-random learn what ever to-the
 διδάσκοντι ἢ τῷ μαθητῶντι ἀρέσῃ, οἱ δὲ συνετοὶ τὸ
teacher or to-the learner may-please the and intelligent the
 εἰκῇ ἀποδοκιμάζουσιν, ὥσπερ Λακεδαιμόνιοι τὸ παλαιὸν
at-random reject just-as Lacedaemonians in-the old(-time)
 καὶ Μαντινεῖς καὶ Πελληνεῖς· ἓνα γάρ τινα τρόπον ἢ
and Mantineans and Pelleneans one for certain manner or

παντελῶς ὀλίγους ἐκλεξάμενοι, οὓς ᾤοντο πρὸς τὴν τῶν
 utterly few having-chosen which they-thought for the of-the
 ἡθῶν ἐπινόρθωσιν ἀρμόττειν, αὐτῇ τῇ μουσικῇ ἐχρῶντο.
 characters correction to-suit itself the music they-used

10 · SOTERICUS: WHAT THE CRITIC MUST KNOW

No single branch of the art is enough to judge by. Harmonics knows the genera, intervals, systems, notes, keys, and modulations, and stops there; it cannot say whether the poet was right to give the beginning of the Mysians to the Hypodorian, because fitness is not its subject. The critic needs two kinds of knowledge, of the character a composition was made for and of the materials it was made from, and he must let perception and understanding keep pace, neither racing ahead nor lagging.

φανερὸν δ' ἂν γένοιτο, εἴ τις ἐκάστην ἐξετάζοιτο τῶν 33
 evident and — would-become if one each should-examine of-the
 ἐπιστημῶν, τίνος ἐστὶ θεωρητική· δῆλον γὰρ ὅτι ἡ μὲν
 sciences of-what it-is contemplative clear for that the indeed
 ἀρμονικὴ γενῶν τε τῶν τοῦ ἡρμωσμένου καὶ διαστημάτων
 harmonic of-genera both those of-the attuned and of-intervals
 καὶ συστημάτων καὶ φθόγων καὶ τόνων καὶ μεταβολῶν
 and of-systems and of-notes and of-keys and of-modulations
 συστηματικῶν ἐστὶ γνωστική· πορρωτέρω δ' οὐκέτι ταύτη
 systematic is cognizant further and no-longer by-this
 προελθεῖν οἶόν τε ὥστ' οὐδὲ ζητεῖν παρὰ ταύτης τὸ
 to-advance possible — so-that not-even to-see from this the
 διαγνῶναι δύνασθαι, πότερον οἰκείως εἴληφεν ὁ ποιητὴς
 to-discern to-be-able whether fittingly has-taken the poet
 οἶον εἰπεῖν ἐν Μυσοῖς τὸν Ὑποδώριον τόνον ἐπὶ τὴν
 as to-say in Mysians the Hypodorian key for the

ἀρχὴν ἢ τὸν Μιξολυδίον τε καὶ Δώριον ἐπὶ τὴν ἔκβασιν
beginning or the Mixolydian both and Dorian for the outcome
 ἢ τὸν Ὑποφρύγιον τε καὶ Φρύγιον ἐπὶ τὴν μέσην. οὐ
or the Hypophrygian both and Phrygian for the middle not
 γὰρ διατείνει ἡ ἀρμονικὴ πραγματεία πρὸς τὰ τοιαῦτα,
for extends the harmonic study to the such-things
 προσδεῖται δὲ πολλῶν ἑτέρων· τὴν γὰρ τῆς οἰκειότητος
it-needs-besides and many others the for of-the fitness
 δύναμιν ἀγνοεῖ. οὔτε γὰρ τὸ χρωματικὸν γένος οὔτε τὸ
power it-knows-not neither for the chromatic genus nor the
 ἐναρμόνιον ἥξει ποτ' ἔχον τὴν τῆς οἰκειότητος δύναμιν
enharmonic will-come ever having the of-the fitness power
 τελείαν καὶ καθ' ἣν τὸ τοῦ πεποιημένου μέλους ἡθὸς
complete and by which the of-the composed melody character
 ἐπιφαίνεται ἀλλὰ τοῦτο τοῦ τεχνίτου ἔργον. φανερόν
shows-itself but this of-the craftsman (is)-work evident
 δὴ ὅτι ἑτέρα τοῦ συστήματος ἡ φωνὴ τῆς ἐν τῷ
indeed that different of-the system the sound than-the in the
 συστήματι κατασκευασθείσης μελοποιίας, περὶ ἧς οὐκ
system devised melody-making about which not
 ἔστι θεωρῆσαι τῆς ἀρμονικῆς πραγματείας. ὁ αὐτὸς δὲ
it-is to-contemplate of-the harmonic study the same and
 λόγος καὶ περὶ τῶν ῥυθμῶν· οὐδεὶς γὰρ ῥυθμὸς τὴν τῆς
account also about the rhythms no for rhythm the of-the
 τελείας οἰκειότητος δύναμιν ἥξει ἔχων ἐν αὐτῷ· τὸ
complete fitness power will-come having in itself the
 γὰρ οἰκείως αἰεὶ λεγόμενον πρὸς ἡθὸς τι βλέποντες
for fittingly always said toward (a)-character some looking
 λέγομεν. τούτου δὲ φάμεν αἰτίαν εἶναι σύνθεσιν τινα ἢ
we-say of-this and we-say (the)-cause to-be (a)-composition some or
 μῖξιν ἢ ἀμφοτέρα. οἶον Ὀλύμπῳ τὸ ἐναρμόνιον γένος
(a)-mixture or both such-as for-Olympus the enharmonic genus

ἐπὶ Φρυγίου τόνου τεθὲν παίωνι ἐπιβατῶ μυχθέν· τοῦτο
upon Phrygian key placed with-a-paeon mounting mixed this
 γὰρ τῆς ἀρχῆς τὸ ἦθος ἐγέννησεν ἐπὶ τῷ τῆς Ἀθηνᾶς
for of-the beginning the character begot in the — of-Athena
 νόμῳ. προσληφθείσης γὰρ μελοποιίας καὶ ῥυθμοποιίας
nome having-been-taken-on for melody-making and rhythm-making
 τεχνικῶς τε μεταληφθέντος τοῦ ῥυθμοῦ μόνον αὐτοῦ καὶ
artfully both having-been-changed the rhythm alone itself and
 γενομένου τροχαίου ἀντὶ παίωνος, συνέστη τὸ Ὀλύμπου
having-become (a)-trochee instead-of (a)-paeon was-constituted the of-Olympus
 ἐναρμόνιον γένος. ἀλλὰ μὴν καὶ τοῦ ἐναρμονίου γένους
enharmonic genus but indeed also of-the enharmonic genus
 καὶ τοῦ Φρυγίου τόνου διαμερόντων καὶ πρὸς τούτοις
and of-the Phrygian key remaining and in-addition to-these
 τοῦ συστήματος παντός, μεγάλην ἀλλοίωσιν ἔσχκε τὸ
of-the system whole (a)-great alteration has-had the
 ἦθος· ἡ γὰρ καλουμένη ἀρμονία ἐν τῷ τῆς Ἀθηνᾶς
character the for called harmonia in the — of-Athena
 νόμῳ πολὺν διέστηκεν κατὰ τὸ ἦθος τῆς ἀναπείρας. εἰ
nome much differs in the character than-the anapeira if
 οὖν προσγένοιτο τῷ τῆς μουσικῆς ἐμπείρῳ τὸ κριτικόν,
then should-be-added to-the of-the music experienced the critical(-faculty)
 δῆλον ὅτι οὗτος ἂν εἴη ὁ ἀκριβὴς ἐν μουσικῇ· ὁ
clear that this(-man) — would-be the exact in music the(-one)
 γὰρ εἰδὼς τὸ Δωριεὶς ἄνευ τοῦ κρίνειν ἐπίστασθαι τὴν
for knowing the Dorian without the to-judge to-understand the
 τῆς χρήσεως αὐτοῦ οἰκειότητα οὐκ εἴσεται ὁ ποιεῖ·
of-the use of-it fitness not will-know what he-does
 ἀλλ' οὐδὲ τὸ ἦθος σώσει· ἐπεὶ καὶ περὶ αὐτῶν τῶν
but not-even the character he-will-preserve since also about themselves the
 Δωριέων μελοποιῶν ἀπορεῖται, πότερόν ἐστι διαγνωστικὴ
Dorian melody-makings it-is-disputed whether is discerning

ἡ ἀρμονικὴ πραγματεία, καθάπερ τινὲς οἴονται, τῶν
the harmonic study just-as some think of-the
 Δωρίων, ἢ οὐ. ὁ αὐτὸς δὲ λόγος καὶ περὶ τῆς ῥυθμικῆς
Dorian(-pieces) or not the same and account also about the rhythmic
 ἐπιστήμης πάσης· ὁ γὰρ εἰδὼς τὸν παίωνα τὴν τῆς
science whole the(-one) for knowing the paeon the of-the
 χρήσεως αὐτοῦ οἰκειότητα οὐκ εἴσεται διὰ τὸ αὐτὴν
use of-it fitness not will-know because-of the itself
 μόνην εἰδέναι τὴν τοῦ παίωνος ξύνθεσιν ἐπεὶ καὶ περὶ
alone to-know the of-the paeon composition since also about
 αὐτῶν τῶν παιωνικῶν ῥυθμοποιῶν ἀπορεῖται, πότερόν
themselves the paeonic rhythm-makings it-is-disputed whether
 ἐστὶ διαγνωστικὴ ἢ ῥυθμικὴ πραγματεία τούτων, καθάπερ
is discerning the rhythmic study of-these just-as
 τινὲς φασιν, ἢ οὐ διατείνει μέχρι τούτου. ἀναγκαῖον
some say or not extends as-far-as this necessary
 οὖν δύο τοῦλάχιστον γνώσεις ὑπάρχειν τῷ μέλλοντι
then two at-least knowledges to-belong to-the(-one) about
 διαγνώσεσθαι τό τ' οἰκεῖον καὶ τὸ ἀλλότριον· πρῶτον μὲν
to-discern the both proper and the alien first indeed
 τοῦ ἥθους, οὗ ἕνεκα ἡ σύνθεσις γεγένηται· ἔπειτα
of-the character of-which for-the-sake the composition has-arisen then
 τούτων, ἐξ ὧν ἡ σύνθεσις, ὅτι μὲν οὖν οὐθ' ἢ ἀρμονικὴ
of-those from which the composition that indeed then neither the harmonic
 οὐθ' ἢ ῥυθμικὴ οὐτ' ἄλλη οὐδεμία τῶν καθ' ἓν μέρος
nor the rhythmic nor other any of-the(-sciences) by one part
 λεγομένων αὐτάρκης αὐτὴ καθ' αὐτὴν τοῦ ἥθους εἶναι καὶ
spoken-of self-sufficient itself by itself of-the character to-be both
 γνωστικὴ καὶ τῶν ἄλλων κριτικὴ, ἀρκέσει τὰ εἰρημένα.
cognizant and of-the others critical will-suffice the(-things) said

τριῶν δ' ὄντων γενῶν, εἰς ᾧ διαρεῖται τὸ ἡρμοσμένον, 34
three and being genera into which is-divided the attuned
 ἴσων τοῖς τε τῶν συστημάτων μεγέθεσι καὶ ταῖς τῶν
equal in-the both of-the systems magnitudes and in-the of-the
 φθόγγων δυνάμεσιν, ὁμοίως δὲ καὶ ταῖς τῶν τετραχόρδων,
notes functions likewise and also in-the of-the tetrachords
 περὶ ἑνὸς μόνου οἱ παλαιοὶ ἐπραγματεύσαντο· ἐπειδὴ περ
about one only the ancients busied-themselves since-indeed
 οὔτε περὶ χρώματος οὔτε περὶ διατόνου οἱ πρὸ ἡμῶν
neither about chroma nor about diatonic those before us
 ἐπεσκόπουν, ἀλλὰ περὶ μόνου τοῦ ἐναρμονίου, καὶ αὖ
examined but about only the enharmonic and again
 τούτου περὶ ἓν τι μέγεθος συστήματος, τοῦ καλουμένου
of-this about one some magnitude of-system the called
 διὰ πασῶν· περὶ μὲν γὰρ τῆς χροᾶς διεφέροντο,
through all about indeed for the shade they-differed
 περὶ δὲ τοῦ μίαν εἶναι αὐτὴν τὴν ἁρμονίαν σχεδὸν
about and the one to-be itself the harmonia nearly
 πάντες συνεφώνουν. οὐκ ἂν οὖν ποτε συνίδοι
all agreed not — then at-any-time would-see-together
 τὰ περὶ τὴν ἁρμονικὴν πραγματείαν ὁ μέχρι
the(-matters) about the harmonic study the(-man) as-far-as
 αὐτῆς τῆς γνώσεως ταύτης προεληλυθώς, ἀλλὰ δηλονότι
itself the knowledge this having-advanced but evidently
 παρακολουθῶν ταῖς τε κατὰ μέρος ἐπιστήμαις καὶ τῷ
following the both by part sciences and the
 συνόλῳ σώματι τῆς μουσικῆς καὶ ταῖς τῶν μερῶν
entire body of-the music and the of-the parts
 μίξεσιν τε καὶ συνθέσεσιν· ὁ γὰρ μόνον ἁρμονικὸς
mixtures both and compositions the(-man) for only harmonic
 περιγέγραπται τρόπῳ τινί. καθόλου μὲν οὖν εἰπεῖν,
has-been-circumscribed in-a-way certain in-general indeed then to-say

ὁμοδρομεῖν δεῖ τήν τ' αἴσθησιν καὶ τὴν διάνοιαν ἐν τῇ
to-run-together must the both perception and the understanding in the
 κρίσει τῶν τῆς μουσικῆς μερῶν καὶ μήτε προάγειν, ὃ
judgment of-the of-the music parts and neither to-run-ahead which
 ποιοῦσιν αἱ προπετεῖς τε καὶ φερόμεναι τῶν αἰσθήσεων,
do the headlong both and rushing of-the perceptions
 μήθ' ὑστερίζειν, ὃ ποιοῦσιν αἱ βραδεῖαί τε καὶ δυσκίνητοι.
nor to-lag-behind which do the slow both and hard-to-move
 γίγνεται δέ ποτ' ἐπὶ τινων αἰσθήσεων καὶ τὸ συγκείμενον
it-happens and sometime in some perceptions also the composed
 ἐκ τοῦ συναμφοτέρου καὶ ὑστεροῦσιν αἱ αὐταὶ καὶ
from the both-together and lag the same and
 προτεροῦσι διὰ τινα φυσικὴν ἀνωμαλίαν. περιαιρετέον
run-ahead through some natural unevenness must-be-stripped-away
 οὖν τῆς μελλούσης ὁμοδρομεῖν αἰσθήσεως ταῦτα.
then from-the (being)-about to-run-together perception these

- 35 αἰεὶ γὰρ ἀναγκαῖον τριῖ ἐλάχιστα εἶναι τὰ πίπτοντα ἅμ' εἰς
always for necessary three at-least to-be the falling at-once into
 τὴν ἀκοήν, φθόγγον τε καὶ χρόνον καὶ συλλαβὴν ἢ γράμμα.
the hearing (a)-note both and (a)-time and (a)-syllable or letter
 συμβήσεται δ' ἐκ τῆς μὲν κατὰ τὸν φθόγγον πορείας
it-will-result and from the indeed by the note progress
 τὸ ἡρμοσμένον γνωρίζεσθαι, ἐκ δὲ τῆς κατὰ χρόνον τὸν
the attuned to-be-known from and the by time the
 ῥυθμόν, ἐκ δὲ τῆς κατὰ γράμμα ἢ συλλαβὴν τὸ λεγόμενον.
rhythm from and the by letter or syllable the thing-said
 ὁμοῦ δὲ προβαινόντων, ἅμα τὴν τῆς αἰσθήσεως ἐπιφορὰν
together and (as-they)-advance at-once the of-the perception application
 ἀναγκαῖον ποιεῖσθαι. ἀλλὰ μὴν κἀκεῖνο φανερόν, ὅτι οὐκ
necessary to-make but indeed that-also (is)-evident that not
 ἐνδέχεται, μὴ δυναμένης τῆς αἰσθήσεως χωρίζειν ἕκαστον
it-is-possible not being-able the perception to-separate each

τῶν εἰρημένων, παρακολουθεῖν τε δύνασθαι τοῖς καθ'
of-the said(-things) to-follow both to-be-able the(-things) by
 ἕκαστα καὶ συννορᾶν τό θ' ἁμαρτανόμενον ἐν ἑκάστῳ αὐτῶν
each and to-see-together the both mistaken in each of-them
 καὶ τὸ μή. πρῶτον οὖν περὶ συνεχείας γνωστέον. ἀναγκαῖον
and the not first then about continuity one-must-know necessary
 γάρ ἐστιν ὑπάρχειν τῇ κριτικῇ δυνάμει συνέχειαν τὸ γὰρ εὖ
for it-is to-belong to-the critical power continuity the for well
 καὶ τὸ ἐναντίως οὐκ ἐν ἀφωρισμένοις τοιοῦδέ τισι γίννεται
and the contrariwise not in defined these certain arises
 φθόγγοις ἢ χρόνοις ἢ γράμμασι, ἀλλ' ἐν συνεχέσιν
notes or times or letters but in continuous(-ones)
 ἐπειδὴ μίξις τις ἔστι κατὰ τὴν χρῆσιν τῶν ἀσυνθέτων
since (a)-mixture some there-is by the use of-the incomposite
 μερῶν. περὶ μὲν οὖν τῆς παρακολουθήσεως τοσαῦτα.
parts about indeed then the following so-much
 τὸ δὲ μετὰ τοῦτο ἐπισκεπτέον, ὅτι οἱ μουσικῆς ἐπιστήμονες 36
the and after this one-must-consider that the of-music knowers
 πρὸς τὴν κριτικὴν πραγματείαν οὐκ εἰσιν αὐτάρκεις. οὐ
for the critical study not are self-sufficient not
 γὰρ οἷόν τε τέλεον γενέσθαι μουσικόν τε καὶ κριτικόν
for possible — complete to-become (a)-musician both and critic
 ἐξ αὐτῶν τῶν δοκούντων εἶναι μερῶν τῆς ὅλης μουσικῆς,
from themselves the seeming to-be parts of-the whole music
 οἷον ἔκ τε τῆς τῶν ὀργάνων ἐμπειρίας καὶ τῆς περὶ τὴν
such-as from both the of-the instruments experience and the about the
 ᾠδῆν, ἔτι δὲ τῆς περὶ τὴν αἴσθησιν συγγυμνασίας· λέγω
song further and the about the perception joint-training I-mean
 δὲ τῆς συντεινούσης εἰς τὴν τοῦ ἡρμοσμένου ξύνεσιν
and the tending toward the of-the attuned comprehension
 καὶ ἔτι τὴν τοῦ ρυθμοῦ· πρὸς δὲ τοῦτοις ἔκ τε τῆς
and further the of-the rhythm besides and to-these from both the

ῥυθμικῆς καὶ τῆς ἁρμονικῆς πραγματείας καὶ τῆς περὶ
rhythmic and the harmonic study and the about
 τὴν κροῦσίν τε καὶ λέξιν θεωρίας, καὶ εἴ τινες ἄλλαι
the striking both and diction theory and if any others
 τυγχάνουσι λοιπαὶ οὔσαι. δι' ἃς δ' αἰτίας οὐχ οἶόν τ'
happen remaining being through what and causes not possible —
 ἐξ αὐτῶν τούτων γενέσθαι κριτικόν, πειρατέον καταμαθεῖν.
from themselves these to-become (a)-critic one-must-try to-learn
 πρῶτον ἐκ τοῦ ἡμῖν ὑποκεῖσθαι τὰ μὲν τῶν κρινομένων
first from the for-us to-be-supposed some indeed of-the judged(-things)
 τέλεια τὰ δ' ἀτελῇ· τέλεια μὲν αὐτό τε τῶν ποιημάτων
complete the others incomplete complete indeed itself both of-the poems
 ἕκαστον, οἷον τὸ ἀδόμενον ἢ αὐλούμενον ἢ καθαριζόμενον
each such-as the sung or piped or harped
 καὶ ἡ ἐκάστου αὐτῶν ἐρμηνεία, οἷον ἢ τ' αὐλησις καὶ ἡ
and the of-each of-them delivery such-as the both aulos-playing and the
 ᾠδὴ καὶ τὰ λοιπὰ τῶν τοιούτων· ἀτελῇ δὲ τὰ πρὸς
song and the rest of-the such-things incomplete and the(-things) toward
 ταῦτα συντείνοντα καὶ τὰ τούτων ἔνεκα γιγνόμενα·
these tending and the(-things) of-these for-the-sake arising
 τοιαῦτα δὲ τὰ μέρη τῆς ἐρμηνείας. δεύτερον ἐκ τῆς
such and the parts of-the delivery second from the
 ποιήσεως· ὡσαύτως γὰρ καὶ αὐτῇ· ὑποκρίνει γὰρ ἂν τις
composition likewise for also itself would-judge for — one
 ἀκούων αὐλητοῦ, πότερόν ποτε συμφωνοῦσιν οἱ αὐλοὶ ἢ
bearing (an)-aulete whether ever are-in-concord the auloi or
 οὔ, καὶ πότερον ἢ διάλεκτος σαφὴς ἢ τοῦναντίον· τούτων
not and whether the articulation (is)-clear or the-contrary of-these
 δ' ἕκαστον μέρος ἐστὶ τῆς αὐλητικῆς ἐρμηνείας, οὐ
and each (a)-part is of-the auletic delivery not
 μέντοι τέλος, ἀλλ' ἔνεκα τοῦ τέλους γιγνόμενον· παρὰ
however (an)-end but for-the-sake of-the end arising beside

ταῦτα γὰρ αὖ καὶ τὰ τοιαῦτα πάντα κριθήσεται τὸ τῆς
these for again also the such-things all will-be-judged the of-the
 ἑρμηνείας ἥθος, εἰ οἰκεῖον ἀποδίδεται τῷ παραποιηθέντι
delivery character whether proper is-rendered to-the adapted
 ποιήματι, ὃ μεταχειρίσασθαι καὶ ἐρμηνεύσαι ὁ
poem which to-handle and to-deliver the(-one)
 ἐνεργῶν βεβούληται. ὁ αὐτὸς δὲ λόγος καὶ ἐπὶ τῶν παθῶν
performing has-wished the same and account also in the passions
 τῶν ὑπὸ τῆς ποιητικῆς σημαινομένων ἐν τοῖς ποιήμασιν.
those by the poetic(-art) signified in the poems

11 • THE NEGLECT OF THE ENHARMONIC

The ancients cared most about character, so they preferred the solemn, unelaborate old music; the Argives are said to have fined the first man among them to use more than seven strings. Pythagoras would not judge music by hearing at all, holding that its excellence is grasped by mind. The moderns have dropped the enharmonic genus and call useless any interval not obtainable by concord — which would throw out the third, fifth, and seventh magnitudes too, though their own tetrachord divisions are full of such irrational intervals.

ἅτ' οὖν ἡθῶν μάλιστα φροντίδα πεποιημένοι οἱ 37
inasmuch then of-characters most care having-made the
 παλαιοί, τὸ σεμνὸν καὶ ἀπερίεργον τῆς ἀρχαίας μουσικῆς
ancients the solemn and unelaborate of-the ancient music
 προετίμων. Ἀργείους μὲν καὶ κόλασιν ἐπιθεῖναι ποτέ φασι
they-preferred Argives indeed even (a)-penalty to-have-laid once they-say
 τῇ εἰς τὴν μουσικὴν παρανομία ζημιῶσαι τε τὸν
on-the against the music transgression to-have-fined both the(-man)
 ἐπιχειρήσαντα πρῶτον ταῖς πλείοσι τῶν ἑπτὰ χρήσασθαι
having-attempted first the more than-the seven to-use

παρ' αὐτοῖς χορδῶν καὶ παραμιξολυδιάζειν ἐπιχειρήσαντα.

among them strings and to-play-mixolydian-besides having-attempted

Πυθαγόρας δ' ὁ σεμνὸς ἀπεδοκίμαζε τὴν κρίσιν τῆς

Pythagoras and the solemn rejected the judgment of-the

μουσικῆς τὴν διὰ τῆς αἰσθήσεως· νῶ γὰρ ληπτὴν τὴν

music the through the perception by-mind for graspable the

ταύτης ἀρετὴν ἔφασκεν εἶναι. τοιγάρτοι τῇ μὲν ἀκοῇ οὐκ

of-this excellence he-asserted to-be therefore by-the indeed hearing not

ἔκρινεν αὐτὴν τῇ δ' ἀναλογικῇ ἀρμονία· αὐταρκές τ'

he-judged it by-the and proportional harmonia sufficient both

ἐνόμιζε τοῦ διὰ πασῶν στήσαι τὴν τῆς μουσικῆς ἐπίγνωσιν.

he-thought the through all to-set the of-the music recognition

38 οἱ δὲ νῦν τὸ μὲν κάλλιστον τῶν γενῶν, ὅπερ

the-(men) and now the indeed finest of-the genera which-very

μάλιστα σεμνότητα παρὰ τοῖς ἀρχαίοις ἐσπουδάζετο,

most for-solemnity among the ancients was-cultivated

παντελῶς παρητήσαντο, ὥστε μηδὲ τὴν τυχοῦσαν

utterly they-rejected so-that not-even the chance

ἀντίληψιν τῶν ἐναρμονίων διαστημάτων τοῖς πολλοῖς

grasp of-the enharmonic intervals for-the many

ὑπάρχειν· οὕτω δ' ἀργῶς διάκεινται καὶ ραθύμως, ὥστε

to-belong so and idly they-are-disposed and carelessly so-that

μηδ' ἔμφασιν νομίζειν παρέχειν καθ' ὅλον τῶν

not-even (an)-appearance to-think to-afford by (the)-whole of-the-(things)

ὑπὸ τὴν αἴσθησιν πιπτόντων τὴν ἐναρμόνιον δίεσιν,

under the perception falling the enharmonic diesis

ἐξορίζειν δ' αὐτὴν ἐκ τῶν μελωδημάτων πεφλυαρκεῖναι

to-banish and it from the sung(-pieces) to-have-talked-nonsense

τε τοὺς δόξαντάς τι περὶ τούτου καὶ τῷ γένει τούτῳ

both those having-thought something about this and the genus this

κεκρημένους. ἀπόδειξιν δ' ἰσχυροτάτην τοῦ τάλιθθι λέγειν

having-used (a)-proof and strongest of-the the-truth to-speak

φέρειν οἴονται μάλιστα μὲν τὴν αὐτῶν ἀναισθησίαν, ὡς
to-bring they-think most indeed the of-themselves insensibility as
 πᾶν, ὃ τι περ ἂν αὐτοὺς ἐκφύγη, τοῦτο καὶ δὴ
everything what any very ever them escapes this also indeed
 πάντως ἀνύπαρκτον ὃν παντελῶς καὶ ἄχρηστον εἶτα καὶ
altogether non-existent being utterly and useless then also
 τὸ μὴ δύνασθαι ληφθῆναι διὰ συμφωνίας τὸ μέγεθος,
the not to-be-able to-be-taken through concord the magnitude
 καθάπερ τό τε ἡμιτόνιον καὶ τὸν τόνον καὶ τὰ λοιπὰ δὲ
just-as the both semitone and the tone and the remaining and
 τῶν τοιούτων διαστημάτων. ἡγνοήκασιν δ' ὅτι καὶ τὸ
of-the such intervals they-have-failed-to-notice and that also the
 τρίτον μέγεθος οὕτως ἂν καὶ τὸ πέμπτον ἐκβάλλοιτο καὶ
third magnitude thus — also the fifth would-be-cast-out and
 τὸ ἑβδομον ὧν τὸ μὲν τριῶν τὸ δὲ πέντε τὸ δ' ἑπτὰ
the seventh of-which one indeed of-three other and of-five other and of-seven
 διέσεων ἔστι· καὶ καθόλου πάνθ' ὅσα περιττὰ φαίνεται
dieses is and in-general all as-many-as odd appear
 τῶν διαστημάτων ἀποδοκιμάζοιτ' ἂν ὡς ἄχρηστα, παρ'
of-the intervals would-be-rejected — as useless in-so-far
 ὅσον οὐδὲν αὐτῶν διὰ συμφωνίας λαβεῖν ἔστι· ταῦτα δ'
as none of-them through concord to-take it-is these and
 ἂν εἴη, ὅσα ὑπὸ τῆς ἐλαχίστης διέσεως μετρεῖται
— would-be as-many-as by the least diesis are-measured
 περισσάκις, οἷς ἀκολουθεῖν ἀνάγκη καὶ τὸ
an-odd-number-of-times which to-follow (is)-necessary also the(-consequence)
 μηδεμίαν τῶν τετραχορδικῶν διαιρέσεων χρησίμην εἶναι,
no of-the tetrachordal divisions useful to-be
 πλὴν μόνην ταύτην, δι' ἧς πᾶσιν ἀρτίοις χρῆσθαι
except only this through which all even to-use

- διαστήμασι συμβέβηκεν· αὕτη δ' ἂν εἴη ἥ τε τοῦ
 intervals it-has-befallen this and — would-be the both of-the
 συντόνου καὶ διατόνου καὶ ἡ τοῦ τονιαίου χρώματος.
 tense and diatonic and the of-the tone-sized chroma
- 39 τὸ δὲ τὰ τοιαῦτα λέγειν τε καὶ ὑπολαμβάνειν, οὐ μόνον
 the and the such to-say both and to-suppose not only
 τοῖς φαινομένοις ἐναντιουμένων ἐστὶν ἀλλὰ καὶ αὐτοῖς
 with-the appearances of-those-opposing is but also with-themselves
 μαχομένων. χρώμενοι γὰρ αὐτοὶ τοιαύταις τετραχόρδων
 of-those-fighting using for themselves such of-tetrachords
 μάλιστα φαίνονται διαιρέσεσιν, ἐν αἷς τὰ πολλὰ τῶν
 most they-appear divisions in which the many of-the
 διαστημάτων ἢτοι περιττά ἐστὶν ἢ ἄλογα· μαλάττουσι
 intervals either odd are or irrational they-soften
 γὰρ αἰεὶ τὰς τε λιχανοὺς καὶ τὰς παρανήτας· ἥδη δὲ
 for always the both lichanoi and the paraneiai already and
 καὶ τῶν ἐστώπων τινὰς παρανιᾶσι φθόγγων, ἀλόγα
 also of-the standing some they-slacken-aside notes by-an-irrational
 τινὶ διαστήματι προσανιέντες αὐτοῖς τὰς τε τρίτας καὶ
 certain interval slackening-toward them the both tritai and
 τὰς παρανήτας· καὶ τὴν τοιαύτην εὐδοκιμεῖν μάλιστα
 the paraneiai and the such to-be-approved most
 πως οἴονται τῶν συστημάτων χρῆσιν, ἐν ἣ τὰ πολλὰ
 somehow they-think of-the systems use in which the many
 τῶν διαστημάτων ἐστὶν ἄλογα οὐ μόνον τῶν κινεῖσθαι
 of-the intervals are irrational not only of-the to-move
 πεφυκότων φθόγγων, ἀλλὰ καὶ τινων ἀκινήτων ἀνιεμένων,
 fitted notes but also of-some unmoved being-slackened
 ὥς ἐστι δῆλον τοῖς αἰσθάνεσθαι τῶν τοιούτων δυναμένοις.
 as it-is clear to-those to-perceive of-the such being-able

Homer taught the proper use of music: he shows Achilles digesting his anger against Agamemnon on the lyre, at the one time when he is idle and out of the fighting. A science is not to be blamed for those who misuse it, and a man brought up on music will praise what is fine and be useful to himself and his city. Terpander ended a Spartan faction with music, Thaletas the plague at Sparta, and Homer's Greeks their own plague by singing the paean all day.

χρήσιν δὲ μουσικῆς προσήκουσαν ἀνδρὶ ὁ καλὸς Ὅμηρος 40
use and of-music befitting for-a-man the fine Homer
 ἐδίδαξε· δηλῶν γάρ, ὅτι ἡ μουσικὴ πολλαχοῦ χρησίμη,
taught showing for that the music in-many-places useful
 τὸν Ἀχιλλέα πεποίηκε τὴν ὀργὴν πέττοντα τὴν πρὸς
— Achilles he-has-made the anger digesting the toward
 τὸν Ἀγαμέμνονα διὰ μουσικῆς ἧς ἔμαθε παρὰ τοῦ
— Agamemnon through music which he-learned from the
 σοφωτάτου Χείρωνος·
wisest Chiron

τὸν δ' εὔρον, φησί, φρένα τερπόμενον φόρμιγγι λιγείῃ,
him and they-found he-says (in)-heart delighting with-(a)-lyre clear
 καλῇ δαιδαλέῃ· ἐπὶ δ' ἀργύρεον ζυγὸν ἦεν.
fine cunningly-wrought upon and silver crossbar was
 τὴν ἄρετ' ἐξ ἐνάρων πόλιν Ἡετίωνος ὀλέσσας,
which he-took from spoils (the)-city of-Eetion having-destroyed
 τῇ ὅγε θυμὸν ἔτερπεν, αἶεде δ' ἄρα κλέα ἀνδρῶν.
with-it he heart was-cheering he-sang and then glories of-men

μάθε, φησὶν Ὅμηρος, πῶς δεῖ μουσικῇ χρῆσθαι κλέα
learn says Homer how one-must music to-use (the)-glories
 γὰρ ἀνδρῶν ᾄδειν καὶ πράξεις ἡμιθέων ἔπρεπεν Ἀχιλλεῖ
for of-men to-sing and deeds of-demigods was-fitting for-Achilles

τῷ Πηλέως τοῦ δικαιοτάτου. ἔτι δὲ καὶ τὸν καιρὸν
the(-son) of-Peleus the most-just further and also the occasion
 τῆς χρήσεως τὸν ἀρμόττοντα διδάσκων Ὅμηρος ἀργοῦντι
of-the use the fitting teaching Homer for-one-idle
 γυμνάσιον ἐξεῦρεν ὠφέλιμον καὶ ἡδύ· πολεμικὸς γὰρ ὢν
(an)-exercise found-out beneficial and pleasant warlike for being
 καὶ πρακτικὸς ὁ Ἀχιλλεὺς διὰ τὴν γενομένην αὐτῷ πρὸς
and active — Achilles because-of the having-arisen for-him toward
 τὸν Ἀγαμέμνονα μῆνιν οὐ μετείχε τῶν κατὰ τὸν πόλεμον
— Agamemnon wrath not shared-in of-the in the war
 κινδύνων. ὥθη οὖν Ὅμηρος πρέπον εἶναι τὴν ψυχὴν τοῖς
dangers thought then Homer fitting to-be the soul with-the
 καλλίστοις τῶν μελῶν παραθήγειν τὸν ἥρωα, ὃν ἐπὶ τὴν
finest of-the songs to-whet the hero so-that for the
 μετὰ μικρὸν αὐτῷ γενησομένην ἔξοδον παρεσκευασμένος
after (a)-little for-him to-come sally prepared
 ἦ. τοῦτο δ' ἐποίει δηλονότι μνημονεύων τῶν πάλαι
may-be this and he-was-doing evidently remembering of-the of-old
 πράξεων. τοιαύτη ἦν ἡ ἀρχαία μουσικὴ καὶ εἰς τοῦτο
deeds such was the ancient music and for this
 χρησίμη. Ἡρακλέα τε γὰρ ἀκούομεν κεχρημένον μουσικῇ
useful Heracles both for we-hear having-used music
 καὶ Ἀχιλλέα καὶ πολλοὺς ἄλλους, ὧν παιδευτὴς ὁ
and Achilles and many others of-whom (as)-educator the
 σοφώτατος Χείρων παραδέδοται, μουσικῆς τε ἅμα ὢν
wisest Chiron is-handed-down of-music both at-once being
 καὶ δικαιοσύνης καὶ ἱατρικῆς διδάσκαλος.
and of-justice and of-medicine teacher

41 καθόλου δ' ὁ γε νοῦν ἔχων οὐ τῶν ἐπιστημῶν
in-general and the(-one) at-least sense having not of-the sciences
 ἔγκλημα δῆπου θεῖη, εἴ τις αὐταῖς μὴ κατὰ τρόπον
(a)-charge surely would-lay if someone them not according-to (the)-manner

χρῶτο, ἀλλὰ τῆς τῶν χρωμένων κακίας ἴδιον εἶναι τοῦτο
should-use but of-the of-those using badness proper to-be this
 νομίσειεν. εἴτ' οὖν τις τὸν παιδευτικὸν τῆς μουσικῆς
he-would-consider if then someone the educative of-the music
 τρόπον ἐκπονήσας τύχοι ἐπιμελείας τῆς προσηκούσης
manner having-worked-out should-obtain of-care the befitting
 ἐν τῇ τοῦ παιδὸς ἡλικίᾳ, τὸ μὲν καλὸν ἐπαινέσει τε
in the of-the child age the indeed fine he-will-praise both
 καὶ ἀποδέξεται, ψέξει δὲ τὸ ἐναντίον ἔν τε τοῖς ἄλλοις
and will-approve will-blame and the contrary in both the others
 καὶ ἐν τοῖς κατὰ μουσικὴν, καὶ ἔσται ὁ τοιοῦτος
and in the(-things) concerning music and will-be the such
 καθαρὸς πάσης ἀγεννοῦς πράξεως διὰ μουσικῆς τε
pure of-every ignoble act through music both
 τὴν μεγίστην ὠφέλειαν καρπωσάμενος ὄφελος ἂν μέγα
the greatest benefit having-reaped (a)-help — great
 γένοιτο αὐτῷ τε καὶ πόλει, μηθεὶν μὴτ' ἔργῳ μῆτε
he-would-become to-himself both and to-city with-nothing either in-deed or
 λόγῳ χρώμενος ἀναρμόστῳ, σώζων ἀεὶ καὶ πανταχοῦ
in-word using discordant preserving always and everywhere
 τὸ πρέπον καὶ σῶφρον καὶ κόσμιον.
the fitting and temperate and orderly
 ὅτι δὲ καὶ ταῖς εὐνομωτάταις τῶν πόλεων ἐπιμελὲς 42
that and also for-the best-governed of-the cities (a)-care
 γεγίνηται φροντίδα ποιῆσθαι τῆς γενναίας μουσικῆς, πολλὰ
it-has-become thought to-make of-the noble music many
 μὲν καὶ ἄλλα μαρτύρια παραθέσθαι ἔστιν. Τέρπανδρον
indeed also other testimonies to-set-beside it-is-possible Terpander
 δ' ἂν τις παραλάβοι τὸν τὴν γενομένην ποτὲ παρὰ
and — one might-take-up the(-man) the having-arisen once among
 Λακεδαιμονίοις στάσιν καταλύσαντα· καὶ Θαλήταν τὸν
Lacedaemonians faction having-dissolved and Thaletas the

Κρήτα, ὃν φασι κατὰ τι πυθόχρηστον Λακεδαιμονίους
Cretan whom they-say according-to some Pythian-oracle Lacedaemonians
 παραγενόμενον διὰ μουσικῆς ἰάσασθαι ἀπαλλάξαι τε τοῦ
having-arrived through music to-have-healed to-have-freed and of-the
 κατασχόντος λοιμοῦ τὴν Σπάρτην, καθάπερ φησὶ Πρατίνας.
having-gripped plague — Sparta just-as says Pratinas
 ἀλλὰ γὰρ καὶ Ὅμηρος τὸν κατασχόντα λοιμὸν τοὺς
but for also Homer the having-gripped plague the
 Ἕλληνας παύσασθαι λέγει διὰ μουσικῆς· ἔφη γοῦν·
Greeks to-have-stopped says through music he-said at-any-rate

οἱ δὲ πανημέριοι μολπῇ θεὸν ἰλάσκοντο,
they and all-day-long with-song (the)-god were-propitiating
 καλὸν αἰέδοντες παιήονα, κοῦροι Ἀχαιῶν,
fine singing (a)-paean youths of-Achaeans
 μέλποντες ἐκάεργον· ὁ δὲ φρένα τέρπετ' ἀκούων.
hymning (the)-far-worker he and (in)-heart was-delighted bearing

τούτους τοὺς στίχους, ἀγαθὲ διδάσκαλε, κολοφῶνα τῶν
these the lines good teacher (a)-crown of-the
 περὶ τῆς μουσικῆς λόγων πεποίημαι, ἐπεὶ φθάσας σὺ τὴν
about the music words I-have-made since anticipating you the
 μουσικὴν δύναμιν διὰ τούτων προαπέφηνας ἡμῖν. τῷ
musical power through these have-declared-beforehand to-us in-the
 γὰρ ὄντι τὸ πρῶτον αὐτῆς καὶ κάλλιστον ἔργον ἢ εἰς
for being the first of-it and finest work the toward
 τοὺς θεοὺς εὐχάριστός ἐστιν ἀμοιβή· ἐπόμενον δὲ τούτῳ
the gods thankful is return following and this
 καὶ δεύτερον τὸ τῆς ψυχῆς καθάρσιον καὶ ἐμμελὲς καὶ
and second the of-the soul cleansing and melodic and

ἐναρμόνιον σύστημα. ταῦτ' εἰπὼν ὁ Σωτήριχος ἔχεις
enharmonic system these(-things) having-said — Soterichus you-have
 ἔφη τοὺς ἐγκυκλίους περὶ μουσικῆς λόγους, ἀγαθὲ διδάσκαλε.
he-said the general about music accounts good teacher

13 · THE CLOSE OF THE FEAST

The teacher praises both speakers for keeping to their own province — Lysias to what a performer must know, Soterichus to what serves use and contemplation. He adds what they omitted: music belongs at the table too, since Homer calls song and dance the adornments of a feast and Aristoxenus says it offsets the heat of the wine. Pythagoras, Archytas, and Plato held that all things are framed by god according to harmonia; the teacher then sings the paean, pours a libation to Cronus, his children, the gods, and the Muses, and dismisses the guests.

ἐθαυμάσθη μὲν οὖν ὁ Σωτήριχος ἐπὶ τοῖς λεχθείσι, 43
was-admired indeed then — Soterichus at the(-things) said
 καὶ γὰρ ἐνέφαινε διὰ τοῦ προσώπου καὶ τῆς φωνῆς
and for he-showed through the face and the voice
 τὴν περὶ μουσικὴν σπουδὴν. ὁ δ' ἐμὸς διδάσκαλος μετὰ
the about music earnestness the and my teacher with
 τῶν ἄλλων ἔφη καὶ τοῦτ' ἀποδέχομαι ἐκάτερου ὕμνων,
the others said also this I-approve of-each of-you
 ὅτι τὴν τάξιν ἕκαστος τὴν αὐτὸς αὐτοῦ ἐφύλαξεν. ὁ
that the station each the himself of-his-own kept —
 μὲν γὰρ Λυσίας, ὅσα μόνον χειρουργοῦντι κιθαρῳδῷ
indeed for Lysias as-much-as only for-a-performing citharode
 προσῆκεν εἶδέναι, τούτοις ἡμᾶς εἰστίασεν. ὁ δὲ Σωτήριχος,
it-befitted to-know with-these us he-feasted — and Soterichus
 ὅσα καὶ πρὸς ὠφέλειαν καὶ πρὸς θεωρίαν, ἀλλὰ γὰρ
as-much-as both toward benefit and toward contemplation but for

καὶ δύναμιν καὶ χρήσιν μουσικῆς συντείνει, διδάσκων
 also (toward)-power and use of-music tends teaching
 ἡμᾶς ἐπεδαψιλεύσατο. ἐκείνο δ' οἶμαι ἐκόντας αὐτοὺς
 us lavished-besides that and I-think willing them
 ἐμοὶ καταλελοιπέναι· οὐ γὰρ καταγνώσομαι αὐτῶν
 to-me to-have-left not for I-shall-condemn of-them
 δειλίαν, ὡς αἰσχυνθέντων κατασπᾶν μουσικὴν εἰς τὰ
 cowardice as having-been-ashamed to-draw-down music into the
 συσσίτια· εἰ γάρ που καὶ χρησίμη καὶ παρὰ πότον,
 messes if for somewhere also useful even beside drink
 ὡς ὁ καλὸς Ὅμηρος ἀπέφηνε· μολπὴ γάρ πού
 as the fine Homer declared song for somewhere
 φησιν ὀρχηστὺς τε, τὰ γάρ τ' ἀναθήματα δαιτός.
 he-says dancing and these for and (the)-adornments of-a-feast
 καί μοι μηδεὶς ὑπολαβέτω, ὅτι πρὸς τέρψιν μόνον
 and for-me no-one let-suppose that for delight only
 χρησίμην ἀήθη μουσικὴν Ὅμηρος διὰ τούτων. ἀλλὰ
 useful thought music Homer through these but
 γὰρ βαθύτερός ἐστι νοῦς ἐγκεκρυμμένος τοῖς ἔπεσιν.
 for deeper is (a)-sense hidden in-the verses
 εἰς γὰρ ὠφέλειαν καὶ βοήθειαν τὴν μεγίστην αὐτοῖς
 for indeed benefit and help the greatest at-those-very
 καιροῖς παρέβαλε μουσικὴν, λέγω δ' εἰς τὰ δείπνα καὶ
 occasions he-set-beside music I-mean and at the dinners and
 τὰς συνουσίας τῶν ἀρχαίων. συνέβαινε γὰρ εἰσάγεσθαι
 the gatherings of-the ancients it-happened for to-be-brought-in
 μουσικὴν, ὡς ἱκανὴν ἀντισπᾶν καὶπραῖνε τὴν τοῦ
 music as able to-counteract and to-soothe the of-the
 οἴνου ὑπόθερμον δύναμιν, καθάπερ πού φησι καὶ ὁ
 wine somewhat-hot power just-as somewhere says also the
 ὑμέτερος Ἀριστόξενος. ἐκεῖνος γὰρ ἔλεγεν εἰσάγεσθαι
 your Aristoxenus that(-man) for said to-be-brought-in

μουσικὴν, παρ' ὅσον ὁ μὲν οἶνος σφάλλειν πέφυκε
music in-so-far as the indeed wine to-trip is-fitted
 τῶν ἄδην αὐτῷ χρησαμένων τά τε σώματα καὶ
of-those to-satiety it having-used the both bodies and
 τὰς διανοίας· ἡ δὲ μουσικὴ τῇ περὶ αὐτὴν τάξει
the minds the and music by-the about itself order
 τε καὶ συμμετρίᾳ εἰς τὴν ἐναντίαν κατάστασιν ἄγει
both and proportion into the opposite condition leads
 τε καὶ πραῖνει. παρὰ τοῦτον οὖν τὸν καιρὸν ὥς
both and soothes at this then the occasion as
 βοηθήματι τῇ μουσικῇ τοὺς ἀρχαίους φησὶ κεχρησθαι
(with)-a-remedy with-the music the ancients says to-have-used
 Ὅμηρος.

Homer

ἀλλὰ δὴ καὶ τὸ μέγιστον ὑμῖν, ὦ ἐταῖροι,
but indeed also the greatest by-you O companions
 καὶ μάλιστα σεμνοτάτην ἀποφαῖνον μουσικὴν
and most most-solemn showing music
 παραλέλειπται. τὴν γὰρ τῶν ὄντων φορὰν καὶ
has-been-left-out the for of-the beings motion and
 τὴν τῶν ἀστέρων κίνησιν οἱ περὶ Πυθαγόραν
the of-the stars movement those about Pythagoras
 καὶ Ἀρχύταν καὶ Πλάτωνα καὶ οἱ λοιποὶ τῶν
and Archytas and Plato and the remaining of-the
 ἀρχαίων φιλοσόφων οὐκ ἄνευ μουσικῆς γίνεσθαι καὶ
ancient philosophers not without music to-come-to-be and
 συνεστάναι ἔφασκον. πάντα γὰρ καθ' ἁρμονίαν
to-bold-together they-asserted all(-things) for according-to harmonia
 ὑπὸ τοῦ θεοῦ κατεσκευάσθαι φασίν. ἄκαιρον δ'
by the god to-have-been-framed they-say untimely and
 ἂν εἴη νῦν ἐπεκτείνειν τοὺς περὶ τούτου λόγους·
— would-be now to-extend the about this accounts

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ἀνώτατον δὲ καὶ μουσικώτατον τὸ παντὶ τὸ
highest and also most-musical the on-everything the
 προσήκον μέτρον ἐπιτιθέναι. ταῦτ' εἰπὼν ἐπαιώνισε,
befitting measure to-lay these(-things) having-said he-sang-a-paeon
 καὶ σπείσας τῷ Κρόνῳ καὶ τοῖς τούτου
and having-poured-libation — to-Cronus and to-the of-him
 παισὶ σὺν θεοῖς πᾶσι καὶ Μούσαις ἀπέλυσε τοὺς
children with gods all and Muses dismissed the
 ἐστιωμένους.
feasting(-ones)
