

[-<268>-] On the names of the seven modes according to Ptolemy and the other Greeks

Therefore, since the Modes are specifically seven, as we have seen, a species of the Diapason as assigned to each of them by Ptolemy, who only teaches us which lay-out they have one in relation to the other, which is this one. The first one or Myxolydian is the highest of all and has the first species. The Lydian is the second and has the second species, and so on, the Phrygian has the third one, the Dorian the fourth one, the Hypodorian the fifth one, the Hypophrygian the sixth one and the Hypodorian the seventh one. [[All the ancient Greek and Latin writer agree in this]] Thus, the lowest species, or, to be more precise, the one which occurs in the notes of the lowest Diapason of the perfect immobile System, except the one from the Proslambanomenos to the Mese, is ascribed to the highest Mode or Tone. The second species (going towards the high register) is assigned to the second Mode (towards the low register) and thus the others follow with the same order. One must be certain that all the ancient writers agree in this. Moreover, Boethius himself, except that he starts firstly from the Hypodorian in the opposite way, he assigns the species from A re to a la mi re instead from a la mi re to a a la mi re, and he concludes with the Myxolydian. Also, although many of them made a grave mistake at the beginning, let us see how well Cleonides [-<269>-] agrees with Ptolemy. He also says that the first species of the octave is contained within the notes Barypycne, that it has the Tone in the first place towards the high register, which is between the Hypate Hypaton and the Paramese and that the ancients called it Myxolydian. He says that the second species is contained within the notes Mesopycne, that it has the tone in the second place going from the high to the low register, that it is contained between the notes Parhypate Hypaton and Trita Diezeugmenon and that it was called Lydian. As to the third one, he says that it is contained within the notes oxypycne with the tone in the third place, that it occurs between the Lichanos hypaton and the Paranete Diezeugmenon and that it is the Phrygian. He states that the fourth species is contained among the notes Barypycne, that it has the tone in the fourth place, that it spans from Hypate Meson to Nete Diezeugmenon and that it corresponds to the Dorian mode. The fifth one, he says, is contained within the notes Mesopycne, that it has the Tone in the fifth place, that it spans from the parhypate Meson to the Trita Hyperboleon and that it corresponds to the Hypolydian. The sixth one is contained within the notes oxypycne, it has the tone in the seventh place, it spans from the Meson to the Paranete Hyperboleon and it corresponds to the Hypophrygian. Finally, the seventh one is contained within the notes Barypycne, it has the Tone in the seventh place or the first one towards the low register, it corresponds to the Hypodorian and it is contained within the Mese and the Nete Hyperboleon or from Proslambanomenos to Mese, and it was also called Hypodorian, Common Mode and Locrian. He also states that the first species of the diatonic has the Semitone in the first and in the fourth place, while the second one has it in the third and in the seventh, and so on the others, as I told you earlier on.

[-<270>-] On the Distance from one Tone to the other, Chapter

However, when we deal with the distance from a Tone and another one we do not use the word Mode, but the word Tone, although they do not differ substantially. In fact, the word tone means, principally and in Recto, as the Scholastics say, the tension or place of the voice, whether it is higher or deeper, while, less principally and in

obliquo, it means the species of the Diapason and the Mode, contrary to what Ptolemy says. Therefore, if one supposes that the three most ancient and principal tones, Dorian, Phrygian and Lydian are separated from each other by a Tone, as I confirmed, in that the Phrygian is a tone higher than the Dorian and the Lydian is a tone higher than the Phrygian, he says that the Myxolydian was created by ascending a fourth above the Dorian, and that four tones were established in this way. Also, in order that the other two corresponded by fourth in the low register, as the Myxolydian corresponds to the Dorian, they placed the Hypolydian under the Lydian and the Hypophrygian under the Phrygian and they added the Hypodorian under the Dorian, by adding the prefix [hypo] which means under. They called Hypermyxolydian tone that corresponded at an octave above the Hypodorian, using the prefix [hyper] which means above. This one caused an infinite number of mistakes and it has been the origin of this misunderstanding, as they say, and as we shall demonstrate further on. Moreover, he states that it follows from this consonant interval that a tone is separated from the other by a tone, a semitone or a limma (which is interpreted as the same) and that it is better to proceed in this way rather than from the interval that two next to each other form collecting the one which the ones which are further removed create, since the intervals and [-<272>-] the notes that can be sung are extracted from the differences between consonant intervals, and it does not happen the other way round, namely, that consonances are formed from the addition of those intervals. Therefore, he says that the Hypophrygian rests a Tone above the Hypodorian, just the Phrygian above the Dorian and the Hypolydian above the Hypophrygian. Moreover, the Dorian is a semitone above the Hypolydian, as the Myxolydian, its correspondent, above the Lydian. Then, the Phrygian, as we said, has a tone higher as the Lydian has, while the Myxolydian is placed a semitone above this one. For this reason it was called in this way, namely, almost mixed with the Lydian because of its proximity to it, in such a way that it turns out to be two fourths or a minor seventh or a Disdiatessaron above the hypodorian, since it is half-way between one and the other Dorian. This exact distance is confirmed by others as well as by Cleonides, where he says, when he mentions the distance of a Tone not only from the one next to it but from the second, third and so on, as that the Myxolydian is a semitone higher than the Lydian, a Thremitone than the Phrygian, a Diatessaron than the Dorian and so on, which I omit in order to be concise. Also, so that nobody may doubt, Boethius himself has held the same opinion and agrees punctually with Ptolemy and with the other Greek writers. I shall quote here his exact words, so that, at last, everyone may agree that there is not among them that contradiction of which they have dreamt, nor there is an error in the text as good Glareano believed or pretended to believe, because, had this not been the case, his calculations would have matched his ideas. Therefore, Boethius says at chapter of his book: Has igitur constitutiones si quis totas faciat acutiores uel in graues remittat: secundum supradictas diapason consonantiae species [-<272>-] efficiet modos septem. quorum nomina sunt haec. Hypodorius Hypophrygius Hypolydius Dorius Phrygius, Lydius, Mixolydius. Horum uero sic ordo procedit. Sit in Diatonico genere uocum ordo dispositus a Proslambanomeno in Neten Hyperboleon atque hic sit Hypodorius modus. Si quis proslambanomenon in acumen intendit tono Hypatenque Hypaton eodem tono attenuet, caeterasque omnes tono faciat acutiores, acutior totus ordo proueniat quam fuit prius quam toni susciperet intensionem. Erit igitur tota constitutio acutior effecta hypofrygius modus. Quodsi in Hypophrygio toni rursus intensionem uoces acceperint. Hypolydij modulatio nascitur. At si Hypolydium quis semitonio intendat Dorium faciet et in aliis quidem similis est in acumen intensionemque processus. This is the translation: “Therefore, if one raises

these Constitutions or Systems, or if he lowers them according to the aforesaid species of the consonance Diapason, one shall create the seven Modes. These are their names: Hypodorian, Hypophrygian, Hypolydian, Dorian, Phrygian, Lydian and Mixolydian. Their order proceeds in this way. Order the series of the notes from A re to a a la mi re in the Diatonic genus, and this be the Hypodorian. If one raises the note from A re by a semitone, and if he raises B mi and all the others, the entire series of notes shall be higher than it was before it was raised by a Tone. Therefore, the entire raised constitution will be the Hypophrygian mode. However, if the notes of the Hypophrygian will be raised by a tone again, the Hypolydian melody shall be born, and it one [-<273>-] raises the Hypolydian by a Semitone, the result shall be the Dorian. One proceeds similarly in the same way in the others, by raising the voice towards the high register.

How said extract from Boethius must be understood.

Here one must consider (and here almost the knab of all this difficulty) that, although Boethius says that, for instance, one must raise the System of the Hypodorian by a tone starting from A re to create the Hypophrygian, and that then, one must also raise B mi and all of the others by a tone until the entire System is a tone higher than the one of the of the Hypodorian, he does not mean by saying this that the Hypophrygian then proceeds in his melody in the same way as the Hypodorian. Therefore, we must remember what he said a little earlier, namely, that, if someone raises these constitutions or systems, or lowers them according to the aforesaid species of the consonance Diapason, one will create the seven modes. Hence, after we have established two systems, each from A re to a a la mi re, but the second a tone higher than the first one, if we want to create the melody of the Hypophrygian we shall have to imagine again that the note ut (Lichanos Meson), which creates that Hypophrygian species, should be placed on A re or Proslamanomenos and the a la mi re (Mese) on B mi (Hypate Hypaton), and other ones should follow in order until one arrives to the Nete Hyperboleon, [-<274>-] although one must maintain the difference that these transposed notes have from them, rather than the notes that receive them, which will be at the same distance as in the Hypodorian Tone. One must make this intellectual adjustment in order to harmonise the Modes with the Tones, or the species of the Diapason with the raising of the voice which each Tone requires in relation to the first one, and Boethius should not have been silent about it, if he wanted to be understood. However, this was ascribed not to any kind of negligence on his part, but to the succinctness to which he aspired to the fact that this work was left unfinished, as everyone knows and to the fact that this matter pertains more to practice than Theory, which was his only subject in this work. In fact, had modern theorists been aware of this, they would not have highlighted those differences on the disposition of the Tones between Boethius and Ptolemy, as Gallilei does, who makes all of Boethius modes start from A re and end on a a la mi, and Ptolemy's ones each on different notes, because, although perhaps the ancient laid out the Modes in their illustrations of them so that they all started from A re and end on a a la mi re, as they are here, [-<275>-] nevertheless this was done only to highlight the distance between a Mode and another one and to pick up the tone, as we say, because, if, for instance, one wants to sing the Hypophrygian from its lowest note, one would take its Proslambanomenos or A re by producing the note re, which was a tone higher than the lowest of the Hypodorian. Then, as to the Species, one would take the Lichanos meson or G sol re ut pitting the note ut at the same height as the said re, by placing said G sol re ut on A re in his

mind, if he wanted, and a la mi re on B mi, or ascending continuously with that same note taken from the beginning to the last one. After this one, if one wanted to continue with the other notes, he would have gone back to B mi in the lower register, leaving aside A re if he had sung a a la mi re, and so on until he would arrived to the last note of the fifteenth which is a a la mi re (Nete Hyperboleon) in the System which we define as stable or g g sol re ut or G sol re ut in the mobile System, which is the one formed by this specific species of the Hypophrygian placed within its notes. Equally, if one wanted to sing the entire Hypolydian System, one would take its A re or Proslambanomenos and to pitch it a ditone higher than the one of the Hypodorian, or one would take the F fa ut (Lichanos Meson), which is its initial note, and pitch the ut with a tone taken as Proslambanomenos, proceeding with the same sequence of the notes up to the fifteenth or beyond (by starting again with the notes of the low register once the high ones ran out) according to the notes provided by the voice and following the illustration given here.

[-<277>-] [Doni, Treatise on the Genera and on the Modes, second book, 277; text: Modo Ipofrigio, a a G sol, g F fa, f E mi, e D re, d c fa, c B mi, [sqb] A re, [signum], ut, Ipolidio]

In order that nobody should think that I dreamt up this by myself, here is Gaudentius (who is qualified as philosopher and to whom is ascribed a Brief Introduction to Greek Music already translated and published by Valla) who says it expressly with these words, which I have copied from a book in the Vatican Library: [Ekhresanto de palaiou onomasi pros thn semasian ton [[..]] oktokaideka phtoggon kai [[grma]] grammasi tois kaloumenois semeiois mousikois peri hon vyn rheteon; hopos me ta onomata kath'ekaston graphoito; kai eni de semeio dunaito tis epiginoskein kai aposemeiusthai phtoggon; epei de hoi phtoggoi diaphoro tasei kinountai kai ouk epi tou autou tote pantos menousin, oush enos de pouthen semeiou kath'ekastonton phtoggon; alla diaphoron edeesan hoste kai ten [this author was translated into Latin by a certain Mutianus, as Cassiodorus states, but I do not believe that this translation corresponds to the text that we have, as it is a mere compendium add. infra lin.] [-<278>-] diaphoron tasin autou semainein; kath'hecason gar tropon he tonon diapherontes te tasei tantes panton hoi phtoggoi ginontai; hoion pote men ton physei barytaton phtoggon proslambanomenon hos en to hypodorio tropo tithemetha; kai meson ten pros touton antiphonon cai tous allous cata ton pros aoutous ocheon onomazomen; pote de aouton meson ton nun antiphonon to proslambanomeno en taxei proslambamenou demenoi; kai ten tantes antiphonon meson [[..]] hypothemenoi kai tous allous toutois analogon, houto khrometha to panti systemati; pollakis de kai ton metaxy proslambanomenou kai meses en tina paralabountes eis arkhen tou sustematos proslambanomeno tauto chrometha, kai ten tasin tou pantos systematos pros touton armozomen; anagke de eph'hekastou systematos pleionon protidentos systemato hes he mese pros ton meson ekhei he hos ho proslambanomenos houtos hontinoun ton homonymon ekhei pros to homonymon; kai hapan to systema pros hapan to systema;], which means: “However, the ancients used certain words to indicate the eighteen notes of the System and of some letters which are called musical figures and which we shall discuss now. The application of musical figures was invented to signify the notes [-<279>-] so that one should not have to write the entire word for each note and so that anyone may recognise and indicate a certain note with a simple sign. However, since these notes or sounds move with different degrees of

tension and are not all fixed in the same place, a single sign was not at all sufficient for each note, but several were required to indicate their different tension, because all the notes vary in tension according to each Mode or Tone. For instance, sometimes we place the sound which is naturally the lowest, the Proslambanomenos, in the Hypodorian Mode. Similarly, we indicate the Mese, which is equivalent to it in sound, and the other notes according to the distance or relationship that they have with it. On other occasion, we place the Mese (which now responds to the Proslambanomenos at the distance of an octave) in the position of the Proslambanomenos itself. We place a Mese corresponding at the octave and all the other notes according to their distance under this note and thus we use the entire System. Moreover, very often we take any note contained between Proslambanomenos and Mese and we employ it as the first note of the System instead of the Proslambanomenos and we adjust to this the tension of the entire System. Therefore, it follows as a consequence that, having placed other Systems in each system, each note or figure will have the same relationship to any note or figure which corresponds in name to its own as a Mese has to another Mese or to the Proslambanomenos and an entire System to another one.” Gaudentius explained to us very clearly with these words [-<280>-] how that intellectual process mentioned by me above occurs. This explanation is very similar to what Ptolemy explains at chapter five of the second book.

#### Explanation of what was said, Chapter

However, in order that one may understand more clearly that the ancients Modes had each a particular tension of the voice and that they deserved the name of Tone unlike our own, which do not, one must be aware that each of them had a particular System or scale, as it was mentioned, which, nevertheless, had the same number of notes called with the same names. However the notes were represented by different signs and each Tone had several which were specific to it, as we shall see later. In this the main difference between their modes and our own consists, because ours are all contained within a single System ordered in the same way. Therefore our tones are parts of a System or smaller different Systems contained by a larger one, rather than separate Tones, and for this reason one can move easily from one to another, one because that Series and consecutive conjunction of tones and Semitones which make up a fifth, then a fourth and then a fourth and thus ad infinitum is not interrupted, [-<281>-] while those were so different that one could not move from one to the other one without interrupting the previous sequence by entering a series and disposition of notes which was very different. This is what produced so much variety and beauty in their melodies, because, when one moved from one tone to another one, not only one changed the species of the octave, but the tension of the melody changed greatly. This can be heard nowadays as well when one uses the sign of the Diesis # in many notes close to each other as the best composers do, such as the Prince of Venosa, Tommaso Pecci other of that ilk, because one moves really from mode to mode or from Tone to Tone, which is the same, and one hears a great variety in the melody, which produces incredible pleasure in the listener. Nevertheless, this cannot be sustained long with the same perfection achieved by the ancients, not so much because our way to write music is insufficient (since this could be remedied) but because they did not have modes as interconnected as ours are. Hence, when we place a diesis on a note, albeit we change the Tone, we change it blindly, as they say, without knowing the tone that we are entering and with what reason, hence we cannot continue into this second mode and make its cadences, and even less can we move from this tone to another one

orderly, but the greatest secret [-<282>-] of the ancient modes and the greatest mystery of this doctrine consists in this. We can gather from this how mistaken all modern musicians are when they believe that all the melodies where these accidental signs occur are chromatic and they baptise them in this way without realising that they do not proceed chromatically, those signs denote a change of Mode or Tone, but not of genus, and that, although there may be some chromatic note such as the C or the F with the diesis, nevertheless those very notes express also the notes which arise by moving from a Tone to another one and do not constitute the chromatic way of proceeding.

[-<283>-] Further explanation of the difference between Mode and Tone

Although I believe to have explained sufficiently this matter with regard to those who have a profound understanding of music, nevertheless, in order to be better understood also by simpler and less perceptive persons, I want to explain the difference that exists between the mode taken simply and the Tone equally simply considered separately from the mode with other examples and illustrations, as well as the difference between the Tone and mode considered together in the manner of the ancients and the modern Modes, which can be better described as Systems because <they consists> in a span divided into some larger segments, which we call tones, and other smaller one which we call semitones. If we take another equal span, divided according to the same order, and we place it one, two, three tones or a semitones higher and so on, the result shall be a change of tone (take in the meaning of , rather than of term mode) as in this example.

However, if we change the sequence and the disposition of the large and small parts, namely tones and semitones, within the same span, namely, if we make it start with a Semitone instead of a tone, without raising it or lowering it in position, this will correspond to a change of Mode, rather than of tone. If then we mix one and the other taking another span or System of equal length but differently ordered in its parts and placed in a higher or lower position, we shall represent the variety of the ancient Tones in the best possible way. However, if we take equal portion from one [-<284>-] limit or division (which represents a note or sound) up to another which corresponds to it, within the same span and disposition of great and small quantities, which is something that one does with the octaves in the musical System, whether moving them higher or lower, in this way we shall represent the modes according to modern practice:

[Doni, Treatise on the Genera and on the Modes, second book, 284; text: I, 2, 3, 4, Diuersità di tensione di uoce, o Tuono solo, specie Modo solo, Tuoni, Modi antichi, de moderni, a, G, F, E, D, C, B, A, [sqb], a a, g, f, e, d, c]

[-<285>-] In order that purely practical musicians, who understand the notes better from staff notation, may be satisfied, I shall place here the following examples.

[-<286>-] How the distance from a Tone to an other one should be understood, Chapter

Therefore, we can understand how the ancient Modes differ from ours *toto caelo* and that we are left only with a shadow of them. However, in order to ascertain the distance between one mode and another one, a certain rule consists in look at the Mese (this follows if one looks at the Proslambanomeons and Nete Hyperboleon as well) as the aforementioned Gaudentius and Ptolemy himself teach us. In fact, the distance between the Mese of a mode and the Mese of another one (the same goes also for the other two notes) will be the same as the distance between one whole System and the other, as we can understand from two equal span one wider than the other, because the distance that has the middle measurements or the extremes of two lengths will be the same as the distance between the two lengths. However, the method of looking at the middle of the other span is not so accurate, because, if the fifteen notes of each System are laid out according to the sequence of the species, in a Proslambanomenos System the second notes will be at the distance of a smaller Semitone from the first one, and in another System it will be at the distance of a larger tone. Therefore the interval that is contained between the first note (Proslambanomenos) of a System to the first of another one will not occur between the second note of the former one and the second of the latter one, as one can see here, where the Proslambanomenos of the Dorian is in unison with the Hypate Meson of the Hypodorian

[Doni, Treatise on the Genera and on the Modes, second book, 286; text: a, f, F, E, D, C, A, g, d, c, Proslambanomenos, Hypodorio]

[-<287>-] and at the distance of a Diatessaron from the Proslambanomenos of the Hypodorian Mode, which is the real distance between these two modes. However, the Hypate Hypaton of the Dorian is separated from the one of the Hypodorian by a just a Ditone, as one can see, and for this reason one must believe that the ancients used to place the Systems with the same disposition of intervals of the Hypodorian Mode, which is, so to speak, the basis of all of them and it is the one which has the same species as the Immobile System which is the foundation of the others because the notes are placed on it in the various ways that I have described above. For this reason, said Hypodorian mode had to be called also common, although I believe that the tension of the voice of the Dorian mode (which is the one that occurs in the middle and therefore more apt to connect with the other mobile systems, higher or lower) is ascribed more correctly to the stable System. This is what Ptolemy does in the table the follows after the eleventh chapter of the second book. I have based the following illustration, in which I adjust to the Immobile Dorian the other six Modes, on this table. I have marked the Mese of each of them as well as the first species of the Diapason, but I have avoided distinguishing the Tones and semitones in individual boxes, as Gallilei does, because the Mese are not represented at the extremities with the due distance which pertains to one and the there. In fact, Ptolemy did not intend to show the precise distances in this table, but he aimed instead to illustrate the variety of the seven species placed in a System through one that was equidistant and in unison with the ones in the middle of the Dorian and between them. Perhaps he did not have much consideration for the fact that only the part of the six modes which corresponded to the Dorian was sung. For instance in the Hypodorian one started from D sol re (lichanos Hypate) as it is in unison with the Proslambanomenos of the Dorian, and continued up to the Nete Hyperboleon of the same Hypodorian, while in

the Myxolydian one started from A re Proslambanomenos, which is also marked a a la mi re in this connection, up to E Nete diezeugmenon:

[<288>] [Doni, Treatise on the Genera and on the Modes, second book, 289; text: Connessione de Sette Modi, Hypodorio, Hypophrygio, Hypolydio, Dorio Stabile, Phrygio. Lydio. Missolydio, D, C, B, a a. A, g, f, e d, c, [sqb], a, G, F, E, D, Nete Hyperboleon, Paranete, Trite, Diezeugmenon, Paramese Mese, Lichanos Meson, Parhypate, Hhypate, Proslambanomenos, [signum]],

[<289>] as Greek anonymous theorist says in a work preserved in the Vatican Library, whose precise words I quote here:

However, it is true that this has to be understood (as I shall demonstrate elsewhere) as referring to the common notes. Therefore, a deep Bass was able to sing the entire Hypodorian System appropriately as well as, possibly, a few lower notes besides. Conversely, a very high voice was able to sing the entire Myxolydian tone and a few more notes. This is how we must interpret Aristides Quintilianus where he says that nobody can sing the entire System of two Diapasons, except than in the Dorian Tone.

However, if we have to make some considerations based on this illustration, we can say that we can see here all the seven species placed in a similar tension of voice, as I said. Of these, the one of the lowest Tone has the Mese in the same position, the second one in second place and the seventh in seventh place. The eighth tone would have it in the eighth place, but we shall discuss it later on.

However, the following illustration seems to me very appropriate in order to understand the structure and order of the ancient modes, because one can find in it the complete sequence of the fifteen notes of each mode with the appropriate distances of Tones and Semitones and with the equivalence to the notes that would be used in each of them according to modern practice. The sixth modes are adjusted to the Hypodorian rather than to the Dorian, as we believe that it was the case commonly, because of the above stated reasons, although everyone will be free to imagine in this case that all the notes are mobile, so that the first of each is the Proslambanomenos, the second the Hypate et cetera or

[<290>] [Doni, Treatise on the Genera and on the Modes, second book, 291; text: Sistema Immobile, Modo Ipodorio, Ipofrigio, Ipolidio, aa., g, f, e, d, [sqb], a, G, F, E, D, C, B, la, sol, fa, mi, re]

That the Mobile System starts from the Proslambanomenos, the Hypodorian from the Mese, the Hypophrygian from the Lichanos Mese, the Hypolydian from the Parhypate Mese and similarly the others from the note which is marked from the initial letters of each. [[One learns from here to which notes of the Dorian the Mese of each of the others corresponds or is in unison with, noting that the Mese of the Hypodorian corresponds to the Hypate meson E la mi quella D.]]

However, if one wants to know to which notes of the Dorian the Mese of each of the six tones corresponds or is in unison with, it will be necessary to connect them

according to the degrees of tension, as the ancients were used to doing and according to the lay-out of Boethius' illustration. Therefore, we shall find that the Mese of the Hypodorian corresponds to the Hypate Meson E la mi of the Dorian, and the one of the Hypophrygian to the Parypte Meson F fa ut, the one of the Hypolydian <aliqua desunt>.

[-<291>-] of the

[-<292>-] [Doni, Treatise on the Genera and on the Modes, second book, 292; text: Tauola de gli otto modi secondo Manuel Brienni, Hypomisolydio, Misolydio, lydio, Phrygio, Dorio, Hypolydio, Hypophrygio, Hypodorio, Hypate, Proslambanomenos, Nete Hyperboleon, Paranete, Trite, Diazeugmenon, Paramese, Mese, Lichanos, Parhypate, Tono, Semitono, stabile, Mobile, Sistema Immobile de la Diapason]

[-<293>-] SYSTEM OF THE MODES according to the tension of the voice.

[-<294>-] How wrongly modern musicians have understood the lay-out of the ancient Modes

One cannot believe the variety of contrasting opinions and the confusion found in the writings of modern theorists about the order and lay-out of the ancient modes. In fact, since they supposed that those were connected together within a single system as ours are, since they did not understand the meaning of those words of Boethius that begin "Therefore, these constitutions, and being influenced also by the fact that Boethius locates the Hypodorian indifferently between A re and a la mi re as well as between a la mi re and a a la mi re, which is the lowest one and the first of all the modes, they have convinced themselves that the following mode, which is the Hypophrygian has its species between B and [sqb], and, equally, the Hypolydian between F and f, the Dorian between E and e, the Phrygian between D and d, the Lydian between C and c and the Myxolydian between G and g, considering that these notes follow the same sequence after A r towards the high register. On the other hand, since they realised that this did not agree with the distance that Boethius, Ptolemy and the other greeks place between each two them, because, for instance, they believe that there is a Semitone between the B, which they consider the starting note of the Hypophrygian and C, which they ascribe to the Hypolydian, rather than a tone, as there should be between those two modes, they [-<295>-] have wondered and asked themselves, producing the most strange explanations in the world, such as that Boethius' text is corrupted, that there is a great contradiction between him and Ptolemy, and that Cleonides or Euclid does not agree with him che se lo dichiara and other similarly silly statements of this sort. Gaffurio (who then was followed in this by Glareano, a man himself believed by many but not very versed in Greek texts) among these, seeing that the distance ascribed to the interval between the tones did not correspond to the order according to which he laid them out, convinced himself that Boethius' text was incorrect. Glareano himself, noting that Cleonides account did not agree at all with his foundations and principles, had no problem in rejecting it openly. In short, as our Mei states, since they started to read the ancient authors worrying in his heart because he believed and wanted to believe that our Modes corresponded to ones of the ancients, they have disrupted everything and they made this subject, which was already obscure, utterly impossible to understand and completely unfathomable, to

such an extent that one can barely find anyone who has enough patience to read the long and baffling discourses that they write on this matter. Moreover, although they have worked hard on this and they have racked their brains for a long time, nevertheless they have admitted that they still have many doubts and that they did not understand these modes. This drove Glareano to say that the disposition of the Modes was almost something arbitrary: “However, we shall not discuss these matters employing all our strength arguing with anyone because it is something almost [-<296>-] arbitrary.” In the following chapter he states: “The opposing views of modern writers are a very obnoxious question, and one that it is fruitless to investigate, in my opinion.” Therefore, Maillard came to state that he appears to be the most indecisive man in the world, and that, therefore, it is a miracle that he has so many followers. However, this has to be ascribed to the times when he lived, that so much less refined were they than ours, so much more cultured men were regarded and so much less envious were they of each other. Maillard, a man otherwise of sound judgment and culture, reprehends Boethius because he started from the Hypodorian, saying that this and the other two, Hypophrygian and Hypolydian, since they are subordinate and inferior, should not have been preferred to the others, as it would have been a good lay-out had he started from one in the middle and then moved on to the ones at each end. Glareano himself, who had taken Boethius as his lead and guiding start in the order of the species was forced to abandon him, explaining himself with these words: “And now, the last person whom I thought that would do this, Boethius himself comes back to me, our Helice and our Cynosura, and, having pushed our ship almost backwards, prevented me from continuing on the route on which I set off. In fact, at chapter thirteen of the fourth book, he lays out the species of the diatessaron and of the diapente in a completely different way from the sequence in which I ordered them, since I set the first one as sol re, the second one as mi la, the third as ut fa, while he ordered the species of the diatessaron in this way, namely, mi la, ut fa and re sol, and this is the way followed by most of the ancients. Similarly we place the Diapente et cetera.” Then he states: “But, what upsets me the most and stopped me from continuing on my route almost as if my sails were directed towards the opposite direction, is the fact that in the same book, in the chapter straight after this one, he says of the starting points of the Modes that the Hypolydian is a tone higher than the Hypophrygian, while we only placed a semitone higher. But, if [-<297>-] my statements are false and Bouethius’ text is correct, we must abandon any dithering, turn our pen and re-write most of this commentary which we have constructed with great effort.” Also, in order to solve that difficulty regarding the ordering of the species, he states that Boethius put as first species Mi la, since it occurs between stable notes, as if starting from stable or mobile ones made a big difference. You shall see what interesting Dilemma he adduces to justify that both the Hypophrygian, which he places on B and the Hypolydian, which he places on C, must be at the distance of a semitone instead of a tone, as Boethius says. “In fact, in this place either Boethius text is wrong or he called proslambanomene the lowest string of the Cithara and then he ordered the strings in the way that one can see that they are ordered still nowadays, from C to c or from F to f in the Synemmena, as one can see.” Then he states without any foundation of sorts that Boethius’ division of the Monochord in the Lydian mode makes more sense if applied to the Hypolydian or Hyporodorian, and for this reason he considers it suspect because of the copyists’ mistakes or incomplete. Then, he states: “All this aims at showing us plainly that this change occurred also at the time of the ancients, but that the majesty of the seven species of the diapason remained always unchanged, regardless of the way the others fell. The right of giving

something a name changes easily and Cleonides, who starts his modes from the Hypate Hypaton and places the Mixolydian from that note to the paramese, can testify to this effect.” This should have made Glareano realise his mistake, had he disposed himself to believe what the ancients were teaching him unanimously, instead of adjusting the authorities of the ancients to his statements, as the Heretics of our day do by interpreting the Sacred Scripture in their own way. Had he done so, he would never have had the idea of criticising Poliziano, who had an intellect very different from his, as “a [-<298>-] collector of facts that he does not understand” and he would have strived to read Aristoxenus, Briennius and the other authors quoted by Giorgio Valla, instead of mocking him by stating that he quoted authors that he or nobody else ever saw in order to increase the reputation of his own works. Even Zarlino himself, although he treats the matter soundly and with good foundations for the most part, he is wrong when he hazards these conclusions from his noticing that Cleonides (or Euclid, [Institutioni, part four, chapter seven in marg.] as he calls him) and Gaudentius besides Boethius place the first species called Mixolydian from Hypate Hypaton to Paramese: “One can see the reason for this openly, and it consists in the fact that he does one of two things, namely, either he places the Mixolydian mode in the lower part of His Monochord (where it is really) and the Hypodorian and the Locrian in the higher part, or he places the strings on that Instrument in a way which is different from the practice of the other ancient theorists.” In this conjecture of his he agrees with Glareano, whom, however, he names on very few occasions.

[-<299>-] That one sees no less uncertainty of opinion in authors more recent than Glareano with regard to the Ancient modes.

From what has been told, one learns that Glareano must have had a really good stomach to be able to digest his opinions on the modes against so many objections and doubts that were raised against him. Therefore, Salinas, as someone extremely clever and intelligent, realised easily that the matter could not stand in that way and he said at chapter thirteen of his fourth book. “Hence one can easily understand how mistaken are those who believe the Dorian to be the first tone of the ancient ones or rather one more recent, and the Phrygian the third one, the Lydian the fourth one and the Myxolydian the seventh. In fact, according to Ptolemy’s doctrine it was said that the Lydian is a tone higher than the Phrygian and the Myxolydian a semitone higher than the Lydian, while it is necessary for the opposite to be true in the disposition of the Tones. In fact, the fifth of them, which spans from F to f, is a Semitone removed from the third one which spans from E to e and the seventh, from G to g, is a tone removed from the fifth which spans from F to f, as every one knows, even practical musicians. Therefore the Mixolydian mode cannot be the seventh of the more recent ones, but, either the Dorian has to be located between C and c and the Phrygian and Lydian on C and E, which species is removed by a tone, and the Myxolydian on F, which is at the distance of a semitone from E, or they could not have had anything to do with them.” He opposed this particular position but not the rest. Zarlino, although he mostly discusses the matter sensibly and judiciously, nevertheless he blunders a lot on this matter of [-<300>-] [Institutioni, part 4, chapter 7 in marg.] the ancient Modes, for instance when he points out that Cleonides (or Euclid, as he calls him) and Gaudentius, beside Boethius, place the first species called Mixolydian from Hypate Hypaton to Paramese and draws these conclusions: “One can see the reason for this openly, and it consists in the fact that he does one of two things, namely, either he places the Mixolydian mode in the lower part of His Monochord (where it is really)

and the Hypodorian and the Locrian in the higher part, or he places the strings on that Instrument in a way which is different from the practice of the other ancient theorists.” Here I point out two things: firstly, that he agrees with Glareano in this conjecture, although he names him on very few occasions; secondly, that I cannot see how one may gather from this that Cleonides lays out the strings on his Instrument (namely, in his System<sup>0</sup> in a different way from the one adopted by the other ancient theorists, because he states that Boethius and Gaudentius agree [Demostationi Harmoniche, Ragionamento 5. Institutioni, book 6, chapter 3 in marg.] and he could have seen that in Ptolemy’s work there is no contradiction with what these authors state. Zarlino himself, seeing that he could not adjust the distances of the tones by placing them within the notes in which the authors place them because he had not understood this transposition of the whole System (since one who has got it into his head that the ancient modes correspond to ours and that each does not exceed the distance of a Diapason can hardly imagine it) in order to preserve their distances bases some on notes which are different from those on which the ancients placed them. Therefore, he places the Hypodorian on G, the Hypophrygian on A, the Hypolydian on B, the Dorian on C, the Phrygian on D (which is the only one which turns out correctly) the Lydian on E and the Myxolydian on F, which is its exact opposite. He seems to concur in this with Salinas’ opinion and with the one of Ponto di Tiard in his Solitario. [-<301>-] [[If these, who have been the most learned and judicious thinkers in the field of music understood the subject of the ancient modes so badly, we should not be surprised]]

Now we shall say something about Gallilei, who, partly because of his beautiful mind, partly because of his strict connection with Mei (who worked on this matter more than anyone else) and also because of his familiar relationship with Signor Giovanni de Bardi of the Counts of Vernio, a most gifted Nobleman and promoter and learned scholar of the music of the ancients, achieved a greater understanding than anyone else and he was able to distinguish correctly what is false from what is true, as he did when he recognised that the sequence of the consonances according to the ancient Greek and the Latin writers is not different, but the same. Nevertheless, he made several mistakes, such as when he states that the first species of the Diapason which occurs between [sqb] mi and [sqb] mi, which is taken by the Greeks as the first one and which is used in the Myxolydian tone, corresponds to the one which was applied to the Dorian by Latin theorists, without considering the difference that occurs in the position of the second Semitone, or when he says that the reason why the Greeks did not accept as first species of the Diapason and of the other consonances the one that start in the lowest note, Proslambanomenos, was because this note is outside the tetrachords and it is the last one and was added on after the others, or that the lowest note of the Diapason can be used in the high Tone, or, equally where he believes it was more probable that the second species of the Diapente was placed between Hypate Hypaton B and that it should respond with the Trite Synemmenon or b fa, because there is no true Diapente between B and F, not realising that that he and the ancients place it more readily between low F fa ut and high [sqb] both to avoid that obstacle of the false Diapente which occurs on B mi, as well as to place the basis of the three Species of the Diatessaron in the three notes from B to E exclusive and the basis of the four species of the Diapente on four other notes from E to e inclusive, which is a very beautiful order. Thus, placing the figures of the Tones as they must be raised one above the other according to the Boethius’ thought, he lets himself be swayed by the current of common blundering when he lays out the Tones according to Ptolemy’s thought, although he marks the species correctly in the middle of the

Systems and places them also between the cardinal notes of the Modes, as we shall illustrate further on. Nevertheless, this Description of his does not correspond to Ptolemy's intention, but he is justified greatly because [-302-] Ptolemy is an writer very difficult to understand, especially because of the inaccurate translation at chapter five of the second book where he wants to show how

Therefore, Zarlino, who translates his words into Italian, does this in a way that one can see well that he translates the words, but not their meaning, which he only understood in a confused way, since it is abundantly clear that the modes must be connected in one of the three ways mentioned above, if they have to be laid out well. Nevertheless, this way adopted by Gallilei should not have been discarded, had correspondence between the distances from a tone and another been preserved, which he tries to salvage with intellectual device similar to the one which he adopts by ordering all the modes from A re to a la mi re. In fact, had this been done, that simple connection would have been more successful, although in this disposition by Gallilei their distance is not preserved without mental transportation and the proper species does not appear between the lowest notes of the Systems

[-<303>] Ordine de Tuoni come gli pone il Gallilei secondo la mente di Tolomeo

[Doni, Treatise on the Genera and on the Modes, second book, 303; text: Hypodorio, Hypofrigio, Settima Specie del Diapason, Sesta, Media, D. d, c, [sqb], a, g, f, e, d, A, G, F, E, c c, C]

[-<304>-] Therefore, if these were the most subtle and intelligent writers of musical matters and they have explained the subject of the ancient modes so badly, it will not come as a great surprise that Artuso and the other second-rate writers, who follow mainly the lead of the former, found themselves deviating from the straight path. Hence it follows that poor Artuso blunders and believes that the Modes of Euclid and Cleonides proceed in inverted order compared to those of Ptolemy from the Phrygian onwards and accomodates the seven modes in their notes well according to Cleonides, but not according to their order, because his Mixolydian is lower and the Hypodorian is higher. As to Ptolemy's order, he agrees with Zarlino, basing the Hypodorian on G, the Hypophrygian on A and so on the others one after the other, and he makes him say that it is not possible to observe the order of the Modes and the one of the Species. However, I shall stop listing all the contradictions of opinion and the blunders of modern writers on the seven species in their adjustment to the modes, since perhaps I have said too much, let us see now what is the consequence of the addition of the eighth Mode, which has given so much to say and write to Music theorists and was the second reason of malpractice on the subject of the modes.

[-<305>-] On the Hypermixolydian, the eighth mode mentioned but not accepted by Ptolemy.

The fact that Ptolemy mentioned another tone, called Hypermyxolydian by those who added it, besides the original seven, because it follows the Myxolydian in highness of pitch, has been the cause of several clamorous blunders and confusions in music, or, to put it better, this has proceeded from the fact that Boethius believed that Ptolemy

accepted it, or rather, from the fact that Boethius was interpreted in a way which was different from what was appropriate. Therefore, since we want to erase any doubt from the mind of the reader, we shall tell briefly how this occurred. Some considered that the seven modes do not complete the diapason, or, to be more precise, that the Disdiapason or the whole System, and that either its lowest or its highest note could not be included in it. They considered this a fault and for this reason they added another tone, the eighth, which, for the reason mentioned above, was called Hypermyxolydian, which corresponds to the Hypodorian, as they used to say, to the Hypodorian. However, this opinion is refuted openly with excellent arguments by Ptolemy. In fact he says that, since the highest and lowest sounds of the Diapason are considered as one sound and, therefore, the consonances added to the Diapason are the same as if they were simple, because, for instance a Tenth is equivalent to a third, an eleventh to a fourth, a twelfth to an fifth, thus, equally, the melody of a single voice can start from an octave [-<306>-] higher or lower, but it will produce always the same air and melody. Hence, since the eighth note corresponds to the first one, thus the eighth mode will differ from the first one. Therefore, just one cannot ascribe more or less than eight notes to a mode, conversely one can only lay out seven tones if they have to be all different, as, if it is the first tone is allowed to have its correspondent at the octave once, why should the second, the third and the others not be allowed? Thus, one would continue ad infinitum. Hence, for this reason one must not define the number of the Tones or the terms of the octave, but the intervals, which, being only seven, and since the species or varieties that can be produced by starting from the first, second note et cetera are also only seven, as many components of the octave must be established. This is what Ptolemy says in substance against those who introduced the eighth mode. Nevertheless, one can see that, although these reasons are very plausible and adequate, the prevalent practice of both modern and ancient theorist headed towards the opposite direction, since they not only reached the octave, but they exceeded it by a tone, since it is possible that this eighth mode was somehow the invention of practical musicians, who believed that one could produce some variety by maintaining the same species, albeit it is more probable that it was introduced through malpractice and that it had no difference from the first one, except for its pitch. In fact, Athenaeus, of its own initiative or on the basis of some more ancient writer and music professor, berates the invention of the eighth tone, and for the same reason modern theorists have enclosed the circle of their Modes within an octave, if they refer to the bases or terms of each system, and of two octaves, if they meant the whole Systems. Therefore, it appears that Boethius believed that Ptolemy was the author of this eighth Tone where he says: "And this is the eighth Tone which Ptolemy superannexuit," although it seems to me that [-<307>-] one may interpret this word in this way: "And this is the eighth Tone which Ptolemy added to them on top," namely, "that he mentioned after the others," rather than "that he considered among the legitimate and reasonable ones." This seems to me to be more probable than to believe that a great scholar such as Severinus Boethius was, to which that title of last of the Romans, which ascribed to him, was well suited and which cost him his life, and who was endowed with such great knowledge and judgment, had been responsible for a blunder of such kind, since Ptolemy's words in this passage are so clear and precise that no doubt arises. Moreover, Ptolemy does not let himself be understood in any other passage better than in this one. It is also possible that some musician who lived after Ptolemy (acting like someone who goes and commit a sin having learned of it from a book of moral dilemmas) took the chance to introduce the eighth mode from the fact that Ptolemy mentioned (although he disapproved of it in

effect) thus he wrote something about it ascribing to it some individual feature to distinguish it from the others, called Hypermixolydian and in some way he attributed it to Ptolemy. Boethius might have remembered this and attributed it to Ptolemy, not on the basis of Ptolemy's own words, who did not accept it, but rejected it. It is known widely, in fact, that even great men are not exempt from memory lapses, and that those who read widely are more subject to them. This seems to me so much more probable since before Ptolemy the fifteen or at least thirteen tones of Aristoxenus were accepted and practised commonly, but the Hypermixolydian is not one of them.