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Title: Compendium of the Treatise of the Genera and of the Modes

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[<f.1r>-] Most Eminent and Revered Signor and Most Laudable Patron:

That music is very effective in tempering the passions of the soul is something so accepted and established among those who are wise that there is no space for doubt. Nor this virtuous prerogative belongs only to practical music which operates the sounds and the voices but it belongs also to the more noble and excellent part of that one which unites theory to practice and to it it accompanies the historical part, not to rack one's brains in abstract matters and feed on inane curiosity, but in order to find new styles or renew the old ones and thus bring back to the light this profession which has not returned completely to its ancient splendour. Music was a discipline so esteemed and practised by the Greeks that, according to Plutarch, almost all the Platonist and Peripatetic Philosophers left entire treatise on it. Therefore, since I have been studying it a little for a few months with that smattering which I acquired on it since my first adolescence and some observations [<f.1v>-] which I had annotated here and there in my writings, I know that I have enjoyed a doubly positive effect from it, since it has been useful to me firstly as a notable diversion against the assaults of a domestic and fierce foe – I am referring to the melancholy which installed itself deeply in my soul when I heard of occurrence of the deplorable loss of a brother whom I loved with such heartfelt affection for his qualities. This was a terrible blow for my household, since he was taken away in his budding years by one of the most disastrous and heart-wrenching accidents ever heard of. This was an accident which would have floored me with its unexpected hit, had it not prevented by the benign providence of Your Eminency, who, moved by Your usual humanity, took the bother to inform me through a person who was able to soften this blow for me. – and, secondly, because it befell me to discover certain matters pertaining to ancient music which are as beautiful and useful to the world as desired by for a long time. Therefore, I can state without [<f.2r>-] boasting that I succeeded to accomplish in a few months what entire Academies for a long time have sought and men very accomplished in this profession have not been able to penetrate, especially in the field which concerns Harmonics, which is the most essential and fundamental of all. On this matter I have written a work divided into five books which comprises a very clear and easy to applicable discussion of the three ancient Genera and Modes which have been very poorly understood up to now. However, not being able to complete an enterprise needing so much study without leaving aside other duties pertaining to my official function, I have decided to present to Your Eminency, in the meantime, another work of mine shorter and more inquisitive on music, which I have composed during these last holidays of October. In it, I discuss separately the part which concerns the musical compositions for the stage, which began to be resurrected a few tens of years ago in Florence, and now it is practised successfully in Rome thanks to the royal magnificence [<f.2v>-] of your Eminency and of the Most Excellent Signor Prince Prefect of Rome, your brother (through whose assistance this Court and city has enjoyed during the past four winters of the most sumptuous performances of the Sant' Alessio, Santa Erminia and Santa Teodora) reviving the example of the ancient sumptuous stage machineries and apparatus. The piety and the wisdom of Your Eminency is to be commended most strongly in this, since, pairing what is useful to what is pleasurable, had the desire to demonstrate by having those plays of sacred character and suited to the most elevated rank that you hold in the Ecclesiastic

Hierarchy, that one can enjoy an honest entertainment among the pomp of the Theatre without detriment to the soul and without compromising one's moral standards. These plays were rightfully detested by those most saintly ancient Fathers because of their obscene character to such an extent since the stage was school and receptacle of any lasciviousness and dissolute behaviour in that licentious age, but, while it is honoured by the presence of Your Eminency, nowadays [-<f.3r>-] it will be an useful instrument to learn about Christian teachings and any laudable and virtuous example. Therefore, I believed to have so much greater a chance to contribute something myself to such a generous enterprise by publishing these observations of mine on the way to improve this sort of music by adding also many other useful considerations pertaining to this profession to such an extent that, as your most devout and obliged servant and because of the great benefits which I receive every day from you, I must satisfy every project of yours continuously on every occasion with my weak abilities. So much so, that I can say that this is not a new enterprise, but a continuation of a Discourse which I recited already ten years ago in two lectures in a private meeting honoured by your presence, in which I proved that the Dramatic actions were sung at the time of the ancients in certain parts apart from the Choruses, which is something which up to now has not been heeded, and therefore the practice of performing entirely sung plays has prevailed. Your Eminency, appreciate, I beg you, this small effort of mine, which I present to you as a tribute of my continued [-<f.3v>-] heartfelt devotion, and do me the honour, when it be allowed by your most important occupation, to cast your eye on it, since only then I will believe it to be deserving of the applause of the general public, once it has been approved by your exquisite judgment, by which the author has been approved for so many years and has been received among the servants of your household. To conclude, I kiss your sacred habit wishing that His Divine Majesty may accord you the continuation of all celestial and earthly favours.

Of your Eminency

Most Devout, Most Humble and obliged servant

Giovanni Battista Doni

[-<f.4r>-] Al discreto Lettore

I realise that I have applied myself to an enterprise too much greater than my abilities because, despite not being myself a professional musician, I dared to involve myself in musical Matters. However, since the boundaries of this profession are greater and larger than it is commonly thought, because they comprehend any sort of polished literature, and because I have always had the desire to be useful to humanity with the little talent that God has bestowed on me in a certain field of recondite studies and to find out many aspects of antiquity, I came to the conclusion that you will not disdain, Discerning and virtuous Reader, that I should share with you what little I have observed on the subject of stage and theatrical music borne again at Florence, my homeland, almost around the exact time of my birth there. I forewarn you that I have written this work in sections and as a diversion from other more serious occupations of mine, and in a rush in order to publish it, as I hoped, during the carnival, and to avoid this anxiety. Therefore, should you find, as it is [-<f.4v>-] probable, that some things are wrong, others are badly structured and ordered, and many important ones have been omitted, know that I have had little opportunity to review it and perfect it and to seek out the authors who might have been useful in this matter. Moreover, I had the presumption to show to others the way to perfect this noble profession (which suffers, as many others do, of the damage of the times and of those who are uncivilised) rather than to comprehend in this work everything that could be said. Therefore, let this true and legitimate explanation stand in front of your courtesy in order for me to obtain forgiveness for my presumption, while I pray you to grant me

two more favours: the first one is that you may not want to damn this work as concerning matters which are useless and impossible to put into practice before you have had experience of it as a pedant who is sworn enemy of all the followers of the Muses, who with impudent courage has sought to discredit these efforts of mine [-<f.5r>-] although [-<f.6r>-] Compendium of the Treatise of the Genera and of the Modes

[Which are the parts of Music. Precisely, Harmonia, Harnosmenon Melos. Melodia Melopoeia and Symphoniurgia Chapter 1 in marg.]

In the first chapter it is demonstrated that, of the five most general and principal parts of Music, which are Harmonics, Rhythm, Organology and the study of Interpretation, the most essential and fundamental is Harmonics, according to the account of Aristoxenus in the first book of his Harmonic Elements, to the one of Aristides Quintilianus and of the other Greek authors. Harmonics is the part that deals with Harmony in particular. The true and ancient meaning of this word is very different from the acceptance in which is taken currently nowadays, which is the one of concentus, in Latin, or Symphonia, in Greek, which mean the consonance of many voices together, whichever they are, which sing and play all together. The true meaning of Harmony, according to the best and most ancient authors, is the orderly disposition of intervals that can be heard in actuality in a single melody played either by the human voice or by a flute, a viol or other instrument or in potency in the notes of a tuned Instrument [-<f.6v>-] such as a harp, a harpsichord or another such one. and in the holes of a flute appropriately laid out. I have provided evidence of this with the authority of many good authors, such as Saint Augustin [book 4 de Trinitate, chapter 2 in marg.], who calls cooptatio what the Greeks call [harmonia]. We adopt this meaning ourselves in our study of the suitable terminology, which provides no less clarity than adornment to this field of study. Moreover, it is shown that the word Harnosmenon (a term which is found in Ptolemy) differs from the word Harmonia as the word White from the word Whiteness, and that the term Harmony, in the writings of Plato, Aristotle and the other writers of that Age, means a way or manner of melody, such as the Dorian, the Phrygian et cetera, [Moreover, the Pythagoreans interpret this word also as the Diapason, which is an interval rather than a system in marg.] and that Melos, namely, a vocal or instrumental song or air, in Rhythm or not, is what derives from harmony. Melody, instead, is the application of the Melos itself by the human voice, and Melopoeia is the art to compose airs or composition which does not include Counterpoint, which I call Symphonurgia, is a different matter which later in time compared to that one.

[On the parts of Harmonics chapter 2 in marg.] The parts of harmonics, as Aristoxenus says openly [-<f.7r>-] in the aforesaid passage, are seven. The first one pertains to the Notes [named [phthongoi] in Greek in marg.], the second one deals with the Intervals, named [diastemata] in Greek, the third one with the Systems [systemata], namely the sequences of several intervals, the fourth one with the Diatonic, Chromatic and Enharmonic Genera, the fifth one with the Dorian, Lydian and Phrygian Tones, which are also called Modes, the sixth with the Mutations, which are called [metabolai] in Greek, which are commonly known as Exits, and the seventh with the Melopoeia. The last two of these concern Practice and other five to Theory. Therefore, in order to proceed methodically, we shall deal with the first three parts in as far as it is necessary to understand the subject of the genera and of the modes well, which is our main subject, and, equally, we shall deal with the Mutations, in as far as it is necessary to understand the practice of one and of the other. However, the Melopoeia (which would require a whole treatise by itself) is not discussed in this work. As to the notes, I define those which

are continuous, as the sound of a bell is, and the ones separated by gaps, which are called in Greek [diastematikai] and have their sounds [-<f.7v>-] separated, as it occurs in the musical Instruments. The first type is not considered in music, but the second one is. The [melos hodikon] or true song will be defined later on, as well as the [logikon] or rational, which is the variation of high and low which is heard in the common speech when one does not sing, and we shall discuss if this belongs to the first type of [-<8r>-] notes, as Practical musicians call them. We shall talk about the intervals called Paraphoni [paraphonoi] called by us penaequisoni, such as the Diapente with its compounded intervals and the Ditone, in our opinion, which our contemporaries call full consonances, and we shall discuss the ones which are called just [symphona] or unison intervals, which are all the remaining consonances, which are called beautiful by practical musicians because, since they are used more sparingly than the others, render the performance or a composition more varied and in relief. Equally, it will be shown which ones are the Sensible intervals and which ones are Insensible, which ones are Minor and major, which ones are Compounded and Uncompounded. Moreover, the perfection and the imperfection of the consonances and how the perfect ones are born from the most perfect and simple proportions, and conversely the less perfect from the less perfect and less simple proportions, shall be discussed. After this, there shall be an orderly review of all the smaller musical intervals which have a name, starting from the Schisma up to the larger tone, with the numbers which make up the proportion of each one of them, and further on, in another table, the larger intervals, consonant and dissonant, will be recorded, starting from the tone [-<f.8v>-] and up to the Bisdiapason or fifteenth. [On the part of Harmonics which pertains to the Systems Third Chapter in marg.] As to the Systems, it was stated that the smallest one contains three notes and two intervals (whose number is always one less than the number of the notes which constitute it) and how many kinds the ancients had. These are mostly of four kinds, namely, one of seven notes comprising a minor seventh, which was in use when music was in its infancy, before Terpander and Pythagoras, then one of eight notes, or the full Diapason, devised by Terpander, Pythagoras or whoever codified it, by adding the eighth note, then the System of an eleventh or Diapason Diatessaron, which lasted for some time, as Ptolemy states at chapter , and finally the system of fifteen notes or Disdiapason or of two octaves, which was considered commonly and very appropriately the perfect System, because the human voice (which governs Music) does not usually exceed this interval moving from the low to the high register, since it is known that nobody can sing the notes which lay beyond this span without them sounding forced and unpleasant to the ear, namely, shrill in the high register, and of little resonance in the low one. In fact, few singers can produce fifteen good notes while usually they can master only eleven or twelve. This finds confirmation [-<9r>-] in modern practice, since in the performance of compositions for fewer voices the limit of two octaves is not usually exceeded. It is demonstrated also with many arguments which are derived mostly from Ptolemy that this System is the most useful and easy to practice of all, and that the one which was introduced by Guidone (when music, at least in the West, was almost completely extinct, as well as the other arts) of twenty or twenty-one notes has proved to be more confusing than useful. In fact, as the saying goes, wither it is not sufficient or it is not needed: it is not sufficient for the Instruments and for the compositions for several voices; it is not needed for the Melopeia and melody for a single voice. It is shown how the system started from the note B in the most ancient and more florid times, that, when the Disidiapason was established, it started on A, and that Guido added the [Gamma] underneath, as well as how it grew through various times up to c, as one can see in the keyboard Instruments. Then, the admirable artistry of this System and of its five Tetrachords is explained, one of which is placed on

the side, and why, what is conjunction and Disjunction, and that this order cannot be disturbed [-<f.9v>-] without compromising and muddling the whole of music. Therefore, it is shown that to divide the System into hexachords according to modern practice is redundant, because this increases the obscurity and disorder without any advantage. In fact, since the ancients observed subtly that every type of melos proceeds in its degrees by fourths and fifths in such a way that two fourths but not two fifths can follow one another, hence it follows that they ordered their tetrachords with less artifice adopting that tone of the disjunction which, added to two fourths, completes the octave by dividing them when it is in the middle and uniting them when it is placed at one of the extremes. This disposition has to be observed and to be well understood if we want to acquire a solid and perfect knowledge of musical matters. Therefore we explain what the words pertaining to the perfect System mean, which represent not only the notes that can be sung by the human voice, but the strings of the ancient Lyre, in imitation of which this musical System was introduced.

[On the resemblance that Music bears to painting and on the Largest System in marg.]

We have also demonstrated the similarity which exists between painting and music. In fact, just as that one contains at least two colours, namely, light or shadow, thus melody is not formed from a single sort of intervals, as, for instance, if they were all tones or semitones, but it is necessary that there should be at least of two types, which [-<f.10r>-] in the Diatonic genus are these two mentioned. This is understood in relation to the near and Uncompounded intervals, because the remote and compounded correspond to the various mixtures which are made of the two first and almost fundamental colours. Equally, the Rhythm must have at least two different tempos, one of which is the short one and the other the long one, from the extension and mixture of both of which all the others are derived, as they are not fundamental. One must also maintain this order of the Tetrachords and reject the hexachords because the first Division of the Diapason consists of the Diapente and of the Diatessaron, rather than the Hexachords (as the sixths are called nowadays), Ditones or Semitones. In fact it is reasonable that the first division and the one which is not based on another one should be the fundamental principle of Music. Here I have placed the illustration of the System with its notes and its names, translated into Italian as well as it has been possible, so that the rest may be more clear and easy to understand:

[Doni, Compendio, 10r; text: Sistema Massimo et Perfetto].

[-<f.10v>-] I do not believe that it is necessary to explain the names which appear in this illustration, because this explanation can be seen in Zarlino and others and because we want to be as brief as possible.

[On the three Schools of Musicians, the Pythagorean, the one of Aristoxenus and the one of Ptolemy chapter five in marg.]

However, before entering the explanation of the genera we have judged it appropriate to touch upon some matters which may facilitate the understanding of everything else. These are our observations on the three main Schools of musicians (in fact, of the large number of other schools which existed only the name of some has survived in the Porphyry's Commentary on Ptolemy) which are the Pythagorean, the one of Aristoxenus and the Ptolemaic. These observations were made to show how they differed one from the other

and how mistaken are those who say that Aristoxenus was only concerned with the sense of hearing and not with reason, because this is known clearly to be false from the writings of Porphyry himself who also quotes <aliquid verba omisa sunt>.

[The Peripatetic Adrastus says the same in Proclus' Commentary on Plato's Timaeus in marg.]

However, it is well known that Aristoxenus attributed more importance to the senses than to reason in musical matters and that Ptolemy more to reason than to the senses, just as Pythagoras and his followers, almost all of whom made speculations on music, did not care at all about the senses, as they were interested only in abstract speculation. We showed then that not only Aristoxenus but all of the ancient practical musicians divided the Tone into four equal parts which are called Enharmonic [-<f.11r>-] Dieses on the basis of reason itself, and, consequently, they divided the entire octave into twenty-four of these particles and all the perfect System into forty-eight. Hence, since in those times the Enharmonic genus, which uses that interval and modulates it, was used in practice, as it is known, it was necessary to know how many said large System of two octaves contained of them, and also the other systems and consonances, namely, the octave, the fifth, the fourth et cetera. For instance, the fourth contains ten of them, the fifth contains fourteen and the octave twenty-four, as we have seen. This is why Aristotle stated that the Diesis is like the number one among the numbers, because it was taken as the smallest measurement and one that was common to all the intervals. This turned out to be very useful, as we shall see, and denoted a greater subtlety than the practice of our contemporary practical musicians who use notes and half notes, which is something that has very negative consequences, because to call the distance mi fa is the same as calling it fa sol, although the first one is smaller than half of the second one as to the interval itself, and to say that from a certain sound or key to another one there are so many notes is a very ambiguous manner of speech because from F faut to [sqb] mi there are three distances or intervals, for instance, in the diatonic genus, and from E la mi to A la mi re there are also three, but the distance itself is not the same because in the latter there is [-<f.11v>-] a fourth and there a tritone, which is a semitone wider. I have also pointed out the mistake of those who think the tone and the other intervals cannot be divided into equal parts, because this is only true as far as the harmonic division is concerned, which is based on numbers and proportions, and not in a physical, Geometrical and practical way through proportional lines in different ways, as Zarlino teaches, among others, but which with much greater clarity and ease can be gleaned from my findings, which I will explain further on so that the lovers of music may not be deprived of this invention.

[That Aristoxenus was not the inventor of the equal intervals chapter 6 in marg.]

I have also contrasted the opinion of modern theorists all of whom believe that Aristoxenus was the inventor of this division into equal parts. On the contrary, that famous passage of Aristotle's proves that the opposite is true, because Aristotle was older than Aristoxenus and also his Teacher in the field of philosophy. He made such progress that he was a competitor and adversary of Theophrastus who succeeded Aristotle as leader of that school. Therefore, not only he was not the inventor of this equal division, but this was not even practised by his followers who were almost all expert singers and players. On the contrary, I have proved (and I will show briefly further on) through a considerable amount of evidence that the ancients commonly availed themselves of consonances and of perfect intervals rather than of the participated, which are used today, [But that these

intervals were not used equally divided, especially in the case of semitones (since, as to the Tones, it is known that the Diatonic Diatonaeus, which is older than the others, contains two of them which are equal and Sesquiottavi, and, as to the Diesis, because of their small size it did not matter that they should be equal) it can be gathered from the fact that they are not used in this way even in the lute and in the viol, despite the fact that these modern authors state so, because, as one can see, the neck starts with a larger and diatonic Semitone, to which another smaller one follows and then another small one, although they are not as unequal as those which are found in keyboard instruments. How much more must the ancients have kept themselves to this unequal division, since they were much more precise than we are? Moreover, it is also clear that Ptolemy states this expressly in the ninth chapter of the second book, which these words <aliquid deest>

namely, since this inequality is completely useless in singing, and that Aristoxenus did not use equal numbers [-<f.12r>-] to signify the particular intervals of each division (which he did not discover, as it is believed, but only demonstrated) in the three genera assigning the number XII to the semitone, first interval of the fourth diatonic division, and the number XXIV to each of the two tones which contain it with that semitone, since he did this just for reason of ease and to demonstrate more promptly the difference from an interval to another one. In fact, he would have not been able to show the size of such intervals without relying on the proportions of the double numbers (16/15 or sesquidecimaquinta is the measure of the larger diatonic semitone, 9/8 or sesquiottava is the measure of the larger Tone, 10/9 or sesquinona is the measure of the minor tone) which went against his doctrine and principles. As to the practice, he knew well that singers and players did not play and sing those intervals as equal, but unequal and perfect. In order to shed more light on this matter, I have availed myself of the example of the distance in miles. In fact, although these are unequal, it can be said that there are 130 miles from Rome to Florence, 10 from Rome to Viterbo and 30 from Florence to Siena. These intervals [-<f.12>-] could also be perfect, just as a fifth is composed exactly of two larger tones and a smaller one, and a larger semitone and a fourth are composed of two tones and a semitone. Nobody would find that the fifth contains 14 diesis and the fourth 10, despite dividing the equally and despite adhering to the boundaries of those harmonic intervals, namely, Tones, Semitones and so forth.

[That the genera of Music are not nor can be more than three chapter 7 in marg.]

Once we have considered this, it is appropriate to know that the genera (namely, of the melodies) are three, and they never were nor could be more than three. One of them, the Diatonic, is natural because it was congenital to humanity itself and it was engendered in man before music was reduced to an art form. In fact, it is used without any artistry at all in the chants of every people, but not everywhere with the same intervals, as it is commonly thought and Zarlino states clearly, where he maintains that only Ptolemy's Syntonic is such. On the contrary, I have demonstrated sufficiently that all the nations observe the same intervals although, to tell the truth, with little difference from one to the other, but this does not warrant a change of genus as it is akin to reducing or enlarging the semitone, so that a more intense melody is born of the first operation, to interpret thus what the Greeks call syntonia, and one more relaxed from the second one. However, the second genus (Chromatic) and the third one (Enharmonic) are completely artificial because they were invented in imitation of the first one and based on it [-<f.13r>-] by the industry and subtlety of the ancient Greeks, although, to be more precise, only the Enharmonic is specifically theirs, because not only it was invented by them, but it was not

practised by any other nations, to my knowledge, while the Chromatic was or it is still practised by some other nation as well, albeit in an imperfect fashion. Hence, the first one is very easy, because there are some who will be able to sing some song very beautifully without having learned any music, the second always requires great study in order to be sung in practice, while the third one requires much greater and very extensive effort and application, so much so that Aristoxenus quoted in called it [philotekhnon] because it has intervals which are so small that are hard to tune and difficult for the ear to get accustomed to. These three general can be compared very aptly to the three sorts of living creatures, namely, Plants, Animals and human beings, because just as the second species presumes the existence of the first one, and the third one presumes the existence of both of the other ones, [[since there is not animal which is not also a plant, while man is both of the previous ones]] or, to be more precise, the sensible soul presumes the existence of the vegetative, and the reasonable soul presumes the existence of one and the other, but in such a way that the vegetative soul lingers when matter receives the sensitive one, or that the sensitive should overstays when the reasonable soul arrives (although some philosophers have maintained the opposite). Thus, the chromatic genus [-<f.13v>-] relies on the Diatonic as its foundation and the Enharmonic is based on both, although each of them can be found by itself (although modern authors maintain that the opposite is true, and particularly Salinas, who compares these three genera to what is Good, Better, and the Best). We shall confirm this more clearly further on.

[Why the Diatonic, Chromatic and Enharmonic are called Genera, and why the ancients based the Genera on the Tetrachord chapter 8 in marg.]

These three are called genera because they contain several species under themselves, although it is taught that there is only one in the last one. This produces no difficulty because, as the experts of logic know very well, it is not contradictory that a genus should be also a species. Thus, precisely, the first two of these three species of living beings, namely, Plants, Animals and human beings contain the other others under themselves, but not the third one. Hence, it is not called genus as a rule, but it could be done, not in relation to its individuals but in relation to the other two species which are equal in rank as to the more general genera.

Zarlino, who wants that all of them should be called genera and species indistinctly, should not be followed, because he became entrenched in the thought that all the Diatonic or Chromatic species are useless and empty after the first one. This cannot be true, as we shall demonstrate below. Genus is defined by good and ancient authors as a certain distribution of the fourth or Tetrachord. This definition is as true and apt as it can be. In fact, since it is natural in the orderly sequence [-<f.14r>-] of the notes that are sung or played to subdivide them with the intervals of fourth and fifth as it is known in every Diatonic melody, hence it follows that, if one wants to constitute the two other genera on the example of that one, as it is reasonable, this distribution or division could not be made within another interval than the fourth, because the fifth was not suitable, since it is contained within the octave only once. And since the two semitones which one hears in each octave of the natural and Diatonic melodies and which separate two tones from three prove that the fifth cannot be but a fourth with the addition of a tone. This alternate sequence of the fourth and of the fifth is, so to speak, essential and inseparable from the nature of singing, as the head is connected to the trunk of an animal, so that every other division is accidental and admits separation, as in the case of the hands and the legs. This is the true reason why the ancients have based in the particular division of the genera on the Tetrachord and why they did not believe that the Diatessaron was the last and smallest

consonance (as Salinas says). This doctrine, although it seems that it deemed to be true by the Pythagoreans, nevertheless it was not followed by the other [-<f.14v>-] ancient musicians, especially the practical ones. On the contrary, I have demonstrated with very plausible arguments that they also knew the consonances which are called imperfect and used them, as Ponto of Tiard, Bishop of Macon maintains, albeit they used them in their practical performances probably in a different way.

[How the three genera progress and what is Thick or Dense in music chapter 9 in marg.]
Now let us see how these genera progress. The Diatonic creates the first interval starting from the low register towards the high one (as one has to understand always) with a semitone (I do not specify whether larger or smaller, as it does not matter here) followed by a tone and by another tone. In this way the fourth will be complete, as one can see here:

[Doni, Compendium, 14v, 1; text: Diatessaron, mi, fa, sol, la, S, T].

Here the letter S means semitone and the letter T means tone.

The Chromatic starts also with a Semitone and then it divides the following tone and sounds a semitone. As to the third interval, it jumps by a semitone or trihemitonium, or three un-compounded semitones which amount to a minor third, which is what is left over to reach to the common boundary of the fourth note, as it is shown here below:

[Doni, Compendium, 14v, 2; text: Diatessaron, T, S].

The Enharmonic divides the first interval of the Diatonic, [-<f.15r>-]

namely, the semitone into two parts or dieses, sounding both of them. Hence, its third interval is a ditone or interval of two tones, which is called major third, thus:

[Doni, Compendium, 15r; text: Diatessaron, T, d].

Hence one sees that the intervals of the Diatonic are the most equal with each other, while the ones of the Chromatic are more unequal, and those of the Enharmonic even more so. However, one must note that the ancients called the two small intervals of the Chromatic and of the Enharmonic (namely the two dieses) the dense or thick and these two were also called diesis genera. Therefore, whenever in a genus the first two intervals added to one another are not larger than the third one (since they define it in this way) that genus is called thick, as one can see that it happens in the Chromatic and in the Enharmonic, because two semitones are smaller than a semitone, and two dieses are much smaller than a ditone. But this fundamental notion, albeit completely true and very well established has been rejected by modern writers without reason. In fact Salinas and Zarlino, since they could not imagine how the two genera were realised in practice by themselves and because they were convinced that were discovered only to embellish [-<f.15v>-] and to perfect the Diatonic, so they have placed the matter in different terms, hence Salinas [on the Genesis in marg.] was castigated with reason by Padre Mersenne. Therefore, Salinas maintains that the thick genus is not the one which contains smaller numbers but a larger numbers of intervals. His reasoning is reduced to this point, namely, that the consonances must not be specific and un-compounded intervals of any genus. Hence, since the semitone and ditone are consonances, they cannot be consonances

specific of this two genera [[since it is appropriate that all the consonances should be filled and divided into other intervals]]. Since, if this is not so, these two genera would be less thick than the Diatonic, the name of Diatessaron (which means formed by four notes) causes a problem, hence it appears that it should be constituted only by eight notes, because this must not be understood as applying only to the Diatonic. Therefore, he maintains that the Diatessaron is the interval that characterises and constitutes the Diatonic, since it is the excess or difference between the Diapason and the Diapente, that the Tone is characteristic of the Chromatic because it is the difference between the Diapente and the Diatessaron, and, finally, that the Semitone indicates the Enharmonic, because it is the excess or difference between the Ditone and the Semiditone. [that Modern authors have interpreted the Thick differently from the ancients chapter 10 in marg.]

Truly these reasons are attractive only in appearance, but are frivolous and empty if one looks at the substance. In fact, he believes that the semiditone is not a particular interval of the Chromatic, nor that the Ditone is specific of the Enharmonic, and he is really correct on this point. [f.16r-] This was the very opinion of Lusitano against Vicentino, but it is not true that the Semiditone is not an uncompounded interval of the Chromatic and the Ditone one of the Enharmonic, because the reasons and the authority of good writers state this openly, as Boethius does. I remain surprised that Vicentino did not interpret Boethius correctly. Nor that explanation on the consonances is appropriate to this because, who disagrees that a consonant interval cannot be placed as uncompounded in a particular genus? On the contrary, this is what provides great part of that delicate character that the two genera have, namely, that often one proceeds in them through consonant steps, since the Semitone in the Chromatic genus and the ditone in the Diatonic are really adjacent notes rather than leaps, which is the same as saying compounded or uncompounded intervals. As to the fact that the consonances have to be fulfilled, I do not know how he can avoid criticism. It does not follow at all that the Diatonic is thicker than the other genera, because, if as thick one means that it has more intervals, one genus is as thick as the other, but, if we understand it, according to the intention of those who were in a position of formulating that rule and a name to those matters, as having smaller [f.16v-] intervals, the thickest of all is the Enharmonic, to which the Chromatic follows. However, if we interpret (as it is possible) the one that can thicken the others as thick, in this sense the Chromatic will be thicker than the Diatonic, because the former thickens the latter, as it happens in the mixture of the genera. as we shall see. The Enharmonic will be thicker than both of them because it is used to thicken both of the others. This process was called [katapyknosis] and it is dealt with by an anonymous Greek author whose work is preserved in the Vatican Library. This would suffice, if there were not also another argument against Salinas based on practice, which demonstrates that the diatonic octave, which unites within itself the Disjunction with the conjunction, namely the [sqb] mi and the b fa, contains nine notes, which are E <F> G A b [sqb] c d e, while the Enharmonic, as well as the Chromatic, as ten, at least in the perfect System, as we shall show below. Had Salinas and the others observed this and not believed, together with the common opinion of modern musicians that the melodies which are practised with a mixture of accidentals are chromatic, they would not have had the presumption to correct the ancients in matters which they did not understand fully.

[Authority of Aristoxenus that shows how the Dense should be understood chapter 11 in marg.]

is represented with the sort of colours which, they say, has something of the crude, which can happen both in the colours which are austere and in those which are florid. Vitruvius, the very learned Architect who lived in that most florid century when Augustus was emperor, says himself that the Enharmonic was very suitably ornate because of its gravity. “But the melody of the Enharmonic is conceived as a work of art, while its sound is extremely serious and endowed with the character of distinguished antiquity.” He says of the Chromatic: “It has a pleasing and sweet nature because of its subtle vivacity and the frequency of its elements.” Macrobius says that is disapproved of (or less lauded by the more strict critics) because of its soft and tender nature.

[Why the Enharmonic is more serious and less effeminate than the Chromatic Chapter 13 in marg.]

We must not be surprised that Vitruvius attributes a grave and majestic quality more to the Enharmonic than to the Chromatic, although that one contains the smallest intervals, while For this reason nowadays it is commonly accepted that the Chromatic is softer and more effeminate than the Chromatic. In fact, those two little intervals are almost considered as one because of their proximity, and, therefore, they have little power to render the melody effeminate and soft because of their tenderness. Hence, since the melodies which touch fewer notes and proceed with more leaps are more majestic and virile, this is how this genus sound, where the two notes which divide the thick interval are barely noticeable:

[Doni, Compendium, 18v].

It seems almost as if it [-<f.19r>-] said:

[Doni, Compendium, 19r].

Hence, both for this reason as well as because the interval of the ditone or major third is more magnificent and virile than the semiditone or minor third, the Enharmonic turns out to be also such compared to the Chromatic and to the Diatonic itself, albeit used for too long it would not please, but it would be cloying.

[On the mobile and Stable notes of the System, and on the Mixed genus and Common chapter 14 in marg.]

However, since it is necessary to know which ones are the Mobile Notes, which ones are the Stable ones of the System, and which ones are the Barypicne, Mesopycne and Apycne, in order to gain full understanding of the genera and of the Modes, it will be good to explain them before we move one. First of all, one has to know that the same notes which are used in the musical System were used in the ancient Instruments, as it is the case today as well, hence the notes of the Systems and the signs which represent them, whether they are lines or something else, are called strings just as the actual strings of an Instrument, for instance of an ancient harp or a Lyre, where it is also appropriate to imagine that same sequence of the Tetrachords which occurs in the largest System. Therefore, [-<f.19v>-] the notes which are the extremities of each tetrachord and those which comprise the two tones which are found in the System besides the four Tetrachords

are called stable because, despite the variation of the genera, they stay fixed and unchanged, while from here it follows that the others (which are the two middle ones of each tetrachord) were called Mobile, since moving from one genus to the other in an Instrument of fifteen strings their combination will change, as they will be lowered and raised accordingly, because they change place in a particular way moving through the notes from the low register to the high or vice versa. Therefore in the two low tetrachords the Parhypates and the Lychani are mobile, and in the two high Tetrachords the Trite and the Paranete and the other Mobile ones. It is appropriate to note the difference which occurs between our way to notate and name the notes and the way of the ancients. In fact, when we want to order an Octave Chromatically or Enharmonically, we leave certain notes as the D la sol re and the G sol re ut, while the ancients had the same names and the same notes (albeit not in the same place) in all the three genera, while they added only the Chromatic or Enharmonic note to the mobile notes. We also mark two notes with the same letter, as in the case of the Diatonic and Enharmonic E la mi and in the case of Diatonic and chromatic F fa ut, as we imagine that the lower note rises in sound, while the ancient used to do the opposite. They marked each one with a specific letter (as they did in the System divided into diesis, which will be placed beneath) and imagining that the notes would become lower and would change position downwards. It did not happen to them, as it happens to us that the letters and the stable notes appear to move, while we say that the E la mi with the addition of the Enharmonic sign rises by a diesis, hence these notes which are written in this way according to our habit, namely,

[Doni, Compendium, 20r, 1; text: E, [signum], F, A, [sqb], c, e],

[in the Enharmonic in marg.]

according to the ancient style, they would be noted thus:

[Doni, Compendium, 20r, 2; text: E, F, G, A, [sqb], C, D, e, #, [signum]],

and these chromatic ones thus:

[Doni, Compendium, 20r, 3; text: E, F, A, [sqb], c, #, [signum]]

and thus:

[Doni, Compendium, 20r, 4; text: E, F, G, A, [sqb], C, D, e, [signum]].

One has also to notice that the second notes of the Tetrachords, namely the Parhypate and the Trite, are stable and mobile; they are stable in relation to the Diatonic and chromatic, because, when the Diatonic combination is changed into the Chromatic, or vice versa, they do not move, but they are mobile in relation to the Diatonic and the Enharmonic, because, [-<f.20v>-] when one changes into the other the Parhypate becomes Lychanos or vice versa.

So, the same note which is the Parhypate in the Diatonic and chromatic is Lychanos in the Enharmonic. However, the three Lychanos are always mobile and different in sound and position in the three genera, as Boethius teaches us , Zarlino amply

illustrates and the example below demonstrates [signum]. Hence, one can understand easily which one is the mixed genus and which is the common.

In fact, one has to know that the Greeks mention the Mixt and the Common genus, beside the three above, and they say that the mixt genus is the one which mixes and combines its melodies of two or more genera, while the Common genus is the one that adopts only the notes which are common to all the genera, namely, the stable ones. Hence, if a melody will not move through other notes but these ones, it will be able to be called communal Diatonic, Chromatic and Enharmonic. I will provide some examples of these:

[Doni, Compendium, 20v; text: A proslambanomenos, Comune Stabile, Sistema p<erfetto>].

[-<f.21r>-] [[Let us see now how those who proposed themselves the task to restore the genera have understood their nature wrongly, and in particular Don Nicola Vicentino, who worked so much on this matter and also published many compositions for several voices based on these genera both pure and mixed according to the supposed modes, which]]

[How one has to select the right Enharmonic intervals and on the Vicentino's Division chapter 16 in marg.]

Now, after we have seen that the Enharmonic employs two dieses, there might be someone who believes that, since the diesis is a quarter of a tone, there will not be any difficulty [[in making that division in the instruments]] in establishing the true distance and size of these diesis (on which is based the division of the intervals in the musical Instruments and the correct intonation of the voice in practice). However, almost the entire difficulty and the main issue in this matter consists of this. In fact, were we to seek that equal division of tones, semitones and quarter tones, or dieses, which modern writers believe that was used in practice by the Ancient followers of Aristoxenus and which it used nowadays in the lute, as to the tones and the semitones, we shall realise our aim easily, since it would suffice to divide the semitones of the lute and of the other Instruments with the help of the mesolabium or of those other inventions which Zarlino suggests in order to find the median proportional lines, [-<f.21v>-] or with another and more easier method which will be explained here below, or even with the simple judgement of the ears, and thus we should be able to avail ourselves of those intervals according to our taste. We could do the same, should we decide to use Don Nicola's division, who invented the practice of dividing the tone into five equal parts [[in order to create the unequal semitones which were put into practice in the Instrument which he called Archicembalo, which is a harpsichord with many keyboards and split keys described by him in his book]]. However, since we must proceed by a very different path if we want to reduce music to its perfection as reason and experience teach us, namely, with the true harmonic intervals which were not practised nor understood by Don Nicola, it will be appropriate, so that nobody may think that we speak by hearsay, to discuss his principles and demonstrate with evidence that little advantage one can draw from them, both from them and from his Invention. [[First of all it is necessary to suppose that, albeit every harmonic interval can be divided geometrically]] [[But do let us look at his aim and goal. As to the first one, one can see clearly]] [[We shall look first at his method]] Therefore, Don Nicola had a keyboard instrument made [-<f.22r>-] which he called Archicembalo, which a harpsichord with more strings, keys and subdivided intervals than

the usual. Many others were built in Imitation of it, as the one built by Padre Stella in Naples and the one by Colonna, which was described by him in his *Sambuca Lincea*, which had a smaller number of keyboards. Some of them are built as *sordini* and mostly they are built as ordinary harpsichords with jacks and quills. Those Instruments are called commonly *Enharmonic Harpsichords*, although nor the *Chromatic* or, even less, the *Enharmonic* are ever played on those. However, since Don Nicola was of the opinion that to divide the semitones and the diesis equally was too ordinary, as it really is, and it could not produce a good result in these Instruments, nor does it produce good harmonies. He believed that, by keeping the tones equal (as they are truly in all our current Instruments, and, consequently, represented by an irrational proportion which is either the *sesquottava* or the *sesquinona*), by dividing each of them into five equal parts and assigning three to the larger semitone and two to the minor one, not only we would have semitones endowed with their perfection, but music would derive many other advantages, namely, the capacity to apply those two genera which were lost in antiquity, the possibility of finding every consonance [-<f.22v>-] over and under each note of the System, and, finally, the ability to ‘circulate’ the composition, which consists in proceeding through all the divisions and all the notes of his instrument from the low register to the high one always through consonant intervals and such that are pleasant to the ear, so that one may return to the beginning whence one started, with all the greater magnificence and excellence of music which derives from this. Therefore a certain <aliqua verba omissa sunt>

which Zarlino relates, composed a work on the music of the Spheres. However we shall judge how successfully this turned out to be from what we shall say.

[on the circulation which some have introduced and on its imperfection chapter 17 in marg.]

First of all one must presume (as it is utterly certain, on the basis of reason and experience) that no harmonic interval starting from the multiplex ones (which are the multiple of the octave) can be divided into two or more equal and rational intervals. From this follows that any irrational interval which is subtracted from any consonance or added to it (all the consonances consist of rational proportions and intervals) renders it imperfect. If anyone thinks to reach the Diapason exactly with a precise number of these equal particles added together, as for instance with the 31 dieses which Don Nicola uses to divide the Octave, he will not succeed, because either he will not reach it or he will exceed it. Moreover, one will find that not even the intervening consonances will be composed of an exact number of [-<f.23r>-] consonances or, if they are, they will be extremely imperfect. Salina provides a forensic demonstration of this, and experience itself persuades us. However, if the octave are tuned perfectly (nothing can be done without this foundation) and the intervening consonances are also tuned as perfect and as participated, as we are used to, one will see clearly that their measured divisions will not correspond to any exact number of those particles added together, or, if these participated consonances do so in some place, this will happen very rarely. Therefore, Don Nicola was deceived gravely if he believed that 31 of these Diesis of his corresponded to the Diapason, as many of its smaller semitones to the Disdiapason and as many larger semitones to the Trisdiapason. I am surprised also as to how]] Therefore, I cannot understand why Don Nicola could execute this division of his without some geometric device (I cannot see that he mentions it or that he had any knowledge of it). All the more so, as I understand that Padre Stella admitted of its own accord that he could not tune more than four dieses (although he was a very expert composer and of excellent ear)

because he said that, when he wanted to move on from the four dieses to the fifth one, however minimally he raised the note, it exceeded the boundaries of the [-<f.23v>-] Tuono, while, whenever he lowered that note by the smallest interval, he found that note to be in unison with the next lower one which was the boundary of the fourth diesis. Hence, one has to believe that this division of five dieses cannot be achieved only by ear and that with good reason the ancients maintained that the fourth part of the tone was the smallest interval one could modulate.

[That Vicentino's Doctrine has had scarce following chapter 18 in marg.]

Therefore, it is not surprising if Don Nicola's Doctrine, which rests on such weak foundations, did not take root in the world and it was not embraced. Not only one will find that it is ill-founded but that it is very confuse and unsupported. In fact, which greater inconsistency can be found than to adopt tones based on irrational and unknown proportions and to attribute exact and rational proportion to its integral parts and to other compounded intervals, while assigning an irrational proportion to the parts which make up the semitones, which are the basic elements of all the intervals? I say this, because he maintains that the smaller semitone should be of $21/20$ proportion and the larger one of $13/12$ proportion, but then he then changes the proportion of the larger semitone to $8/7$, which is the next one, by adding a diesis. Moreover, he assigns this proportion to the minor third, although he admits that it is not irrational,

[Doni, Compendium, 23v, 1; text: $5/4$, $1/2$, $1/3$]

namely, $11/9$ and this other one, namely, $9/7$ to the major third, which is also irrational.

[Doni, Compendium, 23v, 2; text: $4/2$, $1/2$]

However, as to the application of those interval of his, let us concede to him the his minor third [-<f.24r>-] augmented by a comma or half a diesis is more vivacious and powerful (to use the same adjective that he used) than ours, and that it can be used as a consonance (in fact, all the intervals contained within the two thirds or the two thirds themselves are considered as consonance, but I do not believe that expert musician will agree with him that the major third augmented itself by a comma is very attractive and can be used as a consonance. The same goes for when it is enlarged by a diesis, but only in fast passages). However, we shall highlight his main mistakes (of which his book is full) in a more appropriate place, not to detract from his reputation, but so that the young and less expert readers who have such great regard for his doctrine may be warned in accepting his opinions and so that they may realise, finally, that he deserved more praise for his intention to bring music to its perfection than for his achievements, although he boasted in those Latin verses that he wrote:

"The origin of ancient Music..."

et cetera, and he attributed the name of Arch-musician to himself or was hailed as such by others. As for the rest, he maintains that the comma is half of his enharmonic diesis, which he calls smaller to distinguish it from the larger one (which is the smaller Chromatic Semitone) and that the larger Tone contains of these commas and the smaller one [-<f.24v>-] eight, so that, according to him, the difference between a tone and the other one is a diesis, although, according to all the other writers, they differ by a single comma, which is of $81/80$ proportion. However, do let us consider how he believes that the Enharmonic genus should be sung. He maintains that the first interval is that small

Diesis of two comma and the second one the smaller or chromatic Diesis of 4 commas into which the larger Semitone is divided. He marks with a dot the note that divides them, which indicates, according to him, that the sound of the Diatonic note is raised by one fifth of a tone, thus:

[Doni, Compendium, 24v; text: diesis minore, maggiore].

Let us consider a little, if you please, how this conforms to good harmony. It is clear that, in order to create the interval suited to singing in any kind of music it is not sufficient that they should be of any interval, however small, but one errs more on the side of making them of appropriate size so that it may be perceived by the ear or, at least, so that one may train the voice to sing it so sweetly that the ear and the imagination may not perceive it as an interval raised at random or as a fault of who sings or plays it, as if it were a badly tuned unison and one which has been very slightly raised, but as a sound essentially distinct [-<f.25r>-] from the others and able to produce harmony, or, rather, as a melodic colouring in itself, otherwise who would not be able to constitute another musical genus more subtle than the Enharmonic, which would have each of the first to intervals of a comma or of an even smaller ratio? But, it is evident that such a interval is barely capable to be perceived by the ear, that it could be tuned with difficulty and it would not be noticeably different from the unison. So, what some say

Therefore, I state that this first Enharmonic Interval of Don Nicola's is too small and it would be barely distinguishable when it is sung since it is nothing but one tenth of a tone, and it is disproportionate in comparison with the interval which follows it, which is twice in size. This goes against what the others who have dealt with this genus have practised, since they do not make their dieses so different in size one from the other. However, this would be of little importance if it produced a good result in practice, which it does not do, since, being so small and difficult to handle, it can be hardly be tuned and the lowest can hardly be distinguished, because the mentioned intervals will appear always as a single one, thus:

[Doni, Compendium, 25r].

[-<f.25v>-] Therefore, it would have been much better to establish each of the two Enharmonic intervals of a comma and one half in size and to build them as equal, because at least they would have been easier to produce and more apt to create an Enhrmonic melody and air.

[That not even the other Modern authors knew the true Enharmonic chapter 20 in marg.] This same reason goes against Salinas, Zarlino and the other mordern music theorists who, in truth, have used harmonic intervals and such that they could be demonstrated with numbers, but have established as the smallest Enharmonic interval the difference between the larger Semitone and the smaller one, which is in proportion 128/125 and it is not very different from Don Nicola's smallest interval and, therefore, they could not be distinguished by the ear. However, these are more justifiable because they did not believe that this genus had any other use but to serve as adornment and perfecting element of the other two. Therefore, this diesis appears to be suited to their aim, since many more consonances can be found on the Instrument thanks to it, that they would otherwise be found. For instance, when one divides the larger semitone which is found between A la

<mi> re and b fa in a minor semitone in the lower part and a diesis in the upper part with the marked note or letter, the majority do it n this way. A [signum] is located a ditone or major third above F fa ut with the diesis #F, which is its distance from this A [signum]. This is why many call Enharmonic the melodies where Alamire and E la mi with <[signum]>, namely marled with this or with this # sign. [[this is completely false]] without considering that such interval between A <la> mi re <and> E la mi is not used without the sign and the same with the [-<f.26r>-] sign, and, if it were used, it would be none other than a smaller semitone, which is a Chromatic rather than an Enharmonic interval. However, I shall show further on that such a sign, as also the D and the G with the #, do not indicate a change of genus, but a change of Tone. I am also surprised that Salinas, a man otherwise of solid judgment and good erudition, wrote that the music with three b flats called by some ficta is the same as the Enharmonic, while any haalf-accomplished musician knows that these b flats, just as the diesis, do nothing but transposing the Tone or the Mode, as it may be, indicating a different species of octave and a different sequence of intervals rather than different intervals, because, in the end, it is nothing but

[Doni, Compendium, 26r; text: T, S]

transposed lower down. In fact, if in some organs one finds the larger semitone between #G and A and #C and D divided by another note into a smaller Semitone and the smallest diesis, such Diesis is played differently, but it is useful only to make the Transpositions easier and to increase the number of the consonances. Hence, everyone can know if it was possible to restore the knowledge of the genera only with the help of these authors, albeit very erudite.

[-<f.26v>-] [On the Enharmonic division by Ptolemy, by Archytas from Tarentum and by Didymus of Alexandria. Chapter 21 in marg.]

It remains for us to examine the Doctrine of Ptolemy, who divided the Enharmonic Tetrachord in this way. He placed the sesquiquarantacinquesima in the first and lowest interval, the sesquiventitreesima in the second and the sesquiquarta, which creates the consonance of the major third, in the third one. Certainly, he did so with good judgment as to the last interval which he places as a consonance, because, although he does not call it as such, nevertheless this happened to him either because he was not dealing with practical music or not to contravene the doctrine generally accepted by the most ancient music Theorists, mostly of Pythagorean school, who, it seems, made their speculation in the Diatonic Diatonia species (which is called currently Diatonic Diatona by modern authors) which has the fourth comprising half a tone, as there is between b and [sqb], and two larger tones, which were the only ones known at the time and neither whose third and sixth were consonant. However, in his division of the sesquiindicesima (which divides the larger tone into the two small intervals) he has not been really successful, because he has relied too much on his principles and because he contrasted the writers who were more ancient than he was for some reason which was more subtle than solid, and more apparent than true, and also because the Enharmonic had been abandoned a long time before him. This is why he preferred this division of the Enharmonic [(as he himself admits in marg.) to the more ancient ones, also considering that that first interval 46/45 is [-<f.27r>-] too small and subtle, and, consequently, impractical to tune and less distinguishable and capable to be sung or played. However, let us see, if you please,

which is the Division of the Enharmonic according to Archytas of Tarentum, a very famous philosopher of the Pythagorean school, who lived when music was most highly valued by the Greeks, and the one by Didymus of Alexandria, who was a most excellent musician in his time, namely, under the empire of Nero. Suida refers that Nero had him in great regard and kept him at his side for a long time. As to the other Divisions, it appears that, for instance, the one of Eratosthenes achieves such perfection and facility of application. This one has the third interval dissonant and placed in this proportion 114/90, which is very far-fetched. However, the one of Archytas is notable because it has the first interval in sesquivalentesima proportion, which is common to all the three genera, after which the sesquitrentacinquesima follows in the Enharmonic (which is the one which composes the sesquiquindicesima, which is the proportion that represents the larger semitone) and finally the sesquiquarta, or the consonant ditone or major third. [[And in the two other genera there follow other intervals]] Now, the ease of use which is the consequence from [-<f.27v>-] having this interval in common with the other two genera is not small, because a smaller number of notes take part in the composition and mixture of the three genera than according to the other divisions. In fact, if in the two first one were contained the two consonant thirds as in the Enharmonic, we have the major one, these divisions of Archytas could be as well regarded as any other more ancient or more modern.

[On the objections raised by Ptolemy to Archytas' division and how they can be resolved. Chapter 22 in marg.]

However, let us see if the objections that Ptolemy raises against Archytas are considerable and of importance or small and insignificant. First of all, he reprehends him because he has placed some intervals in superpartiente rather than superparticular proportion, which is simpler and more perfect. Secondly, he argues that he has made these same intervals too equal between each other, thirdly, that the first Chromatic interval is smaller than that one used to hear in practice, and fourthly, that he placed the same interval in the Enharmonic, where he maintains that the second should be smaller than the first one. However, if we want weigh up these arguments of his accurately, we shall realise that [[good Ptolemy is wrong when he says that they are of very little importance and we can suspect strongly that he set himself to rebuke them being moved more by emulation and by the desire to set up his doctrine by destroying the older ones]] [-<f.28r>-] Ptolemy is completely wrong and sometimes he is too quick in damning the doctrine of more ancient writers, as others have noted from the oppositions which he raises against Aristoxenus. However, we shall leave those aside, because the Divisions of Aristoxenus are not suitable for us, because they do not show us the exact and true harmonic intervals. We shall answer for Archytas, since nobody, as far as I know, has taken his side. As to the fact that he used superpartienti proportions, albeit this does not happen in the Enharmonic, with which we are concerned chiefly, no reason is sufficient to illustrate why this could not be done. In fact, although the most [[simple and]] perfect consonances are born of the most simple and perfect proportions, nevertheless we see that the sixths consist of superpartienti proportion, the major $\frac{5}{4}$, and the minor $\frac{8}{6}$. Therefore, this has to be allowed all the more in the Intervals which have not to be necessarily consonant. Nor the fact that he made the first two intervals very unequal deserves reprehension, on the contrary, it deserves praise because they make the melody more varied because of they are such and experience demonstrates that in the Harpsichord, which has very unequal semitones, the Chromatic sounds much better than on the lute or on the viol, where they are much more similar. Furthermore, Ptolemy himself in his [-<f.28v>-] Enharmonic did

the same, where he places the first two intervals as very unequal, namely, one of sesquiventitreesima proportion and the other of sesquiquarantacinquesima, which is almost half as much. Hence I do not know how he can dare to rebuke Archytas for this. As to the fact that the first Chromatic interval was placed by Archytas smaller than usual, although he did not do this deliberately, not even this has to be reprehended. In fact, since the whole Chromatic is artificial, he, who invents some species out of the ordinary with its artistry and application, as long as it is pleasant and it produces a good result, deserves praise rather than scorn. Nor can I say why the first interval should be necessarily smaller in the Enharmonic than in the other genera, since it is enough that the sesquidecimaquinta should be divided into two intervals as comfortable as it is possible to sing or play, of as perfect and simple proportion, and not too equal or unequal between each other. It seems to me that these conditions are realised very well in this division of Archytas', and perhaps more than in any other. Moreover, it will be comfortable and attractive to have the first interval in common between the three genera and this cannot but produce a good effect in the mutations. Nor the last argument, namely that he should have not placed the second interval smaller than the first one, has more strength than the others, because no reason contradicts it, on the contrary, our current practice supports Archytas, because in our Chromatic genus (whichever it is and however it is applied) the larger semitone is located [-<f.29r>-] in the first place,

[Doni, Compendium, 29r, 1]

while the second one is placed second, thus:

[Doni, Compendium, 29r, 2],

and this produces no ill effect, although perhaps in Ptolemy's time the opposite was common practice, while perhaps in Archytas's time the most common chromatic (I say this because I believe at that time there was a greater variety of singing because the nations had not mixed together quite as much) proceeded first with a smaller interval and then with a larger one. Be this as it may in the Chromatic, it is certainly more reasonable to follow Archytas than Ptolemy in the Enharmonic because of the reason which I was saying and which is so important, namely because it was practised at the time of Archytas and not in those of Ptolemy, when it is possible that his Division were not much better understood, as they are now. In this I am not little surprised with Zarlino and with Salinas who were swayed blindly by the authority of Ptolemy without examining better his arguments. Had Zarlino done so he would not have said [-<f.29v>-] However, this must not be ascribed to lack of judgement in those two great personalities, but, rather, to the fact that they did not build the idea of these genera that they should have formed, because they considered them as useless and empty if they were not mixed with the Diatonic.

[Dydimus' Divisions are examined and it is shown how easy they are to practise together with those of Archytas. Chapter 23 in marg.]

[[but as to the Didymus' doctrine and position]] Didymus positions deserve to be very closely examined as well because he was one of the greatest musicians that Greece ever produced, and, because of his closeness with Nero, one has to believe that he was very

highly regarded not only as a Music Theorist but also as a practical musician. Moreover, one can see that Suida states it clearly, although his works, as those by Archytas and by many others, have been destroyed completely because of the calamities of the worked and by the power of time. Also, although the glory of this art, so highly regarded and practised at the time of Archytas, had faded very much in his time, nevertheless their intellect had been sharpened in many respects with the help of works which had been written and thanks to experience itself. Therefore, if his works were to be found, I am sure that an infinite amount of observations made by modern writers would be found to have been noted by him much earlier. Be this as it may, time has been found to have sided very much with him, because the Chromatic of our day corresponds exactly to the one established by him which is composed by a larger semitone, a smaller one and a minor third. Nor the diatonic is different from the Ptolemy's tone, which is the one used nowadays, or almost the same one, (to avoid discussing the controversy between Zarlino and Gallilei) [-<f.30r>-] except for the order of the Tones, since he places the smaller tone after the larger semitone (which seems to have been his discovery together with the knowledge of the consonant thirds and of sixths) rather than the larger one, as Ptolemy and modern theorists do, hence, he interprets fa sol as a smaller tone, rather than a larger one, as Zarlino demonstrates to perfection, although, since he had been (as Ptolemy admits) very expert in the Canon, I am convinced that he did this not without reason, as I deduce also from other arguments which I collect elsewhere as proof.

Nevertheless, in the Enharmonic he placed the sesquiquarta or consonant major third very judiciously in the last interval, and he had the sesquidecimaquinta to divide into the two other intervals. However, he did not proceed with this Division. This happened because he did not consider it as it was not used at the time, or because he could not decide which division suited him better, since this depended more on the practice of singing and on the judgment of the ear than on any numerical argument. Ptolemy is right when he says that, had he divided this interval, he would have divided into a sesquitrentesima and a sesquitrentesima, but Salinas does not allow this, preferring to divide into a sesquidecimaquarta and into a $128/125$ which are his intervals and of the other modern theorists. However Salinas shows himself to be too bold in this, because, in the end, Ptolemy would have known the principles and the doctrine of Didymus much better [-<f.30v>-] than he did, since he had seen his work, apart from the fact that this division of modern theorists has nothing to do with that one as to the ease of singing or playing in the Enharmonic genus, since it is only used to obtain a larger number of consonances in practical performance, especially in the keyboard instruments which are able to produce them, rather than in the Lyre, the ancient Cithara and on the flutes (on which one has to believe that those melodies were played in their exactness), nor in similar Instruments of several strings which were called [organa polykhorda] and [panarmoniai], of which there was a huge variety, as the air organ, the water organ, the Psaltelry, the Epigonion and other similar ones. Therefore, I consider this division [[of Didymus]] to be extremely useful and perhaps not inferior to the one of Archytas, which seems preferable in variety of intervals, while this one surpasses the other one in ease of use, since a superparticular interval can be divided into two almost equal intervals as are these with the greatest ease in the world on the same string, as I shall demonstrate further on. Hence, just as it seems that Archytas Division is more convenient to the keyboard instruments, the one of Didymus appears to be more convenient on the lute, and similar instruments, and on the viol, and both of these produce a very good result with little conflict.

[On the Divisions of the Chromatic, and which ones are the best ones chapter 24 in marg.]

However, as to the division of the Chromatic, leaving aside those that are devoid of secondary or imperfect consonances for now, it appears that none is comparable to the one of Didymus which has consonant thirds and that with little <aliqua omitta sunt>

[<f.31r>-] That the Division of the Didymus' Tetrachord is the most perfect and comfortable than all the others chapter

Who has some familiarity with the works of Modern Theorists, such as of those by Zarlino and Galilei, will be surprised, I am sure, at this title, taking it as a great paradox. In fact, it appears that those most learned men proved the opposite with the support of vast evidence of arguments and illustrations, so much so that I agreed myself with their opinion for a long time, since I held it as most certain and infallible. But, of truth, how hidden you are, what great effort you require to show yourself to the human mind, and how wisely spoke who calls you daughter of Time! In fact, you show yourself little by little and you let us know every day how fallible is our knowledge. Zarlino and Galliel believed to have proved most clearly that the division of the fourth and of the octave according to Didymus' method, who placed the smaller Tone after the larger Semitone, was very imperfect, especially for our current use, because there were fewer consonances than in Ptolemy's system, where the larger Tone is after the Semitone, namely from F to G and from C to D. moreover, from the mere consideration that there are two adjacent larger Tones from G to A and from a to [sqb], immediately their mind was drawn to think that these intervals were not [<f.31v>-] distributed so well there, and that for these reason there would not be as many combinations of consonances. Because of all this, I was very surprised that Didymus, who not only was an excellent Theorist, as Ptolemy proves when he says that he understood the practice of the Canon perfectly, but also a very expert practical musician, as Suda states and one who lived a long time with Nero when music, not only the simple and chaste one, but also the dissolute, lascivious and full of every delicacy, variety and multiplicity of Instruments, was very highly regarded, I was very surprised, I say, that Didymus did not realise that, since the smaller Tone was in the second position [[his distribution was not capable of such a large number of consonances]] many consonances turned out to be excluded. Then, I wanted to investigate if the same happened if the note of b flat was also added to the System which is used for the conjunction, and equally the Chromatic notes, because they cannot make any difference in respect of the Enharmonic because they do not produce intervals which added to others immediately constitute some consonances. Moreover, it was not in use at the time of Didymus, nor anyone can hope that it is very much embraced in its pure and simple form. Thus I achieved the result that I suspected, namely that not only Didymus Division is not less rich in consonances with the addition of those notes than Ptolemy's one, but that it has a greater number of them, namely two more, as one can see from the illustration below, where I have placed all the smaller consonances, namely, the ones contained within the Octave, as I think it is appropriate to call them, [<f.32r>-] which are found to be enlarged or reduced by a comma in one an in the other Division, in a perfect System divided Diatonically and Chromatically, without adding either the consonances or those dissonances which change name, namely those which are no longer called fifths, fourths, thirds, and sixths, augmented or diminished. To provide more clarity, we added a Comma to both the divisions, as it is encouraged by expert musicians, but under D la sol re in Ptolemy's one, according to Zarlino's and Salinas' intention, and under the [sqb] mi in Didymus one (where it has a much better result). Thus, we have distinguished the false consonances which occur in both these Divisions without using the comma and of the few

ones which are found therein also without the use of the comma. These are marked with a circle drawn with a thicker line. As to the fact that the comma requires to be placed a smaller semitone under the [sqb] mi and above the b fa - since between b and [sqb] there is the proportion 135/128 which corresponds to a smaller semitone enlarged by a comma, as Zarlino shows - this can be learned from the fact that harmonic reason requires it, even without considering the consonances. In fact, if one wants to proceed Diatonically via b flat, it is necessary to form these two semitones a b and b [sqb], namely,

[Doni, Compendium, 32r, 1],

which are the same as the other two of the System [sqb] c and c #c, E F and F #F:

[Doni, Compendium, 32r, 2].

However, this cannot be done without [-<f.32v.-] the help of this comma [sqb] 81 [sqb] 80 cannot be done in the perfect system because the tone between a la mi re and [sqb] mi is larger and because the chromatic Paranete Synemmenon [sqb] and the Paramese [sqb] are of different sound. Hence, it follows that one can see that in the ancient Diagram that will be placed underneath in all the Tones these two notes are represented by a different sign. Therefore, if Didymus division is as rich in consonances as the one of Ptolemy, for this sole reason that it requires the Comma in the Tone of the Disjunction it would deserve to be preferred rather than to take second place after Ptolemy's one, since it is more reasonable to differentiate this Tone from the others (which does is not in common with the Tetrachords with a larger number of intervals or other accidents than the one from C sol fa ut (Trite Diezeugmenon) to D la sol re (Paranete Diezeugmenon) which corresponds to the one from F fa ut (Parhypate Meson) to G sol re ut (Lichanos Meson). I prefer this to avoid the need for a large number of notes, since the one of the [sqb] seems to me to be so necessary, although that other comma is also necessary in the interchangeable use of the disjunction ([sqb] square) and of the conjunction (b flat) in order to separate the Nete Synemmenon (d la sol re) from the Paranete Diezeugmenon (d la sol re) or the sol (which is used as b flat) of d la sol re from the la of the same note which is used as [sqb] square. Therefore, if one is necessary to couple the Conjunction and the Disjunction, the other one is no less necessary to unite the Chromatic with the Diatonic. However, if in some species of the octave without the Chromatic genus in the Trite Synemmenon (b fa) Ptolemy's Division is richer in consonances than the one [-<f.33r->] of Didymus, the complete opposite happens in all of the entire thickened System with all of its necessary notes as it is more convenient to combine them with each other. To make a comparison, if one wanted to compare the Ionic style with the Corinthian in architecture to ascertain which one is more decorative, one should not just compare the architraves and to the capitals of one style with the ones of the other one, but one should compare the entire edifice complete with columns, capitals, architraves et cetera of one with the one of the other, otherwise the comparison would be false, as one can see that it is in this demonstration by Zarlino, which other then inserted in their books without thinking about it. However, there is no man who does not make a mistake and I shall not be offended by a few faults. Therefore, I say this to avoid that anyone should believe that because of this I do not regard Zarlino as a very great man and a very fundamental writer in his profession [[since, in truth, he is, with a few other modern authors, no more than two or three in number, to be compared to those ancient Aristoxeni,

Philolai, Didymi, Dionysii of Halicarnassus, Ptolemys et cetera. And hence]] However, he nor his followers should have been moved so easily by Ptolemy's words to condemn in one fell swoop all the division of those ancient wise men, remembering that not even the great men and the great philosophers are spared from some kind of envy and from too much affection for their own works. Also, as a modern author points out correctly, if those opinion of the ancient philosophers appear to be so strange if they are considered in fragments in Aristotle's writings, [-<f.33v>-] who derides them, they would not appear so far-fetched if we had their writings nowadays and if we could know the continuous development of their doctrine, together with their initial and basic principles. I believe that the same would happen with regard to the musical opinions if if time had not taken away from us the authors who held them.

Didymus division appears to be more perfect than the one of Ptolemy in another respect, namely that when, one moves to the conjunction, the Tone of the disjunction which is found between a la mi re and [sqb] comes to be transported a fourth higher between d la sol re and e la mi. Therefore, it appears to be necessary that, just as that one is larger, this one as well should so, as it happens in Dydimus' system, but not in Ptolemy's.

[-<f.35r>-] or no difference is found in actuality in our modern instruments. One could also use it with the first two intervals inverted, namely, with the smaller semitone in the first place and the larger one in the second place, and thus it would be closer to the ancient ones and it would turn out to be sweeter and softer than that other one, although, because it does not have the first interval in common with the Diatonic, it would be harder to put into practice in the two mixed genera than in the pure Chromatic, nevertheless it would be non no less easy to put into practice than the other one. This is all that I need at the moment, namely the division and the constitution of the genera as to sing or play them and as to realise them according to our intention. It remains for us to see of which intervals those three genera are capable in their pure and original form, because no certain rule can be given on the way one should keep in practising them, if this is not established. Don Nicola considered an infallible principle, following on Franchino's footsteps, that the interval of the Semiditone belongs specifically and particularly to the Chromatic and the Ditone to the Enharmonic, so that it cannot enter the others without compromising their purity. Therefore, since these intervals are often found in our music, he had to say that they are not pure diatonic, but that they are a mixture of the three genera, which doctrine, [-<f.35v>-] although it is so far removed from the truth as the earth is removed from the sky, nevertheless this did not stop it from being embraced by many who were not particularly interest in reaching the bottom of the matter and who considered Don Nicola a great Theorist. Padre Stella was among these, a very expert composer, who has left us many works in these made-up genera, both pure and mixed. Don Nicola was so obstinate in this opinion that although the adjudicators who were elected to judge on a certain bet that he made on this matter ruled against him, nevertheless he wanted to published a written account where his reasons and those of his adversaries are related in short, so that the world may judge the injustice that he maintained that he had been subjected to. One should see what Bottrigari, a Bolognese nobleman, writes on this matter, who, it seems to me, understood the matter of the Genera better than anyone else and who notices very clearly that neither Vicentino nor his adversaries nor the adjudicators themselves understood the topic of the dispute. [[Artusi also dealt with this in his Dialogues, but he did not understand it either.]] One can also look up what Artusi says in his Dialogues, but with little foundation and doctrine.

[That all the Genera admit the Ditone and the Semiditone chapter 25 in marg.]

Therefore, Don Nicola believes, from seeing that the semitone is included in the Chromatic tetrachord as a specific interval and the Ditone is included within the Enharmonic, that neither of them belongs to the other genus, Chromatic or Enharmonic, and that both of them are [-<f.36r>-] excluded from the Diatonic. I prove that this is not true in the following way. The Diatonic Genus has existed before the other two and it is shared by all the nations, even those that have no variety of Chromatic and Enharmonic genera. Nevertheless, such intervals belong naturally to their melodies and they were found without fail also in the most ancient Diatonic songs which were popular before the invention of the other two genera. Hence, they are not particular and specific of those two but they are common to all of them. To say that they began to be excluded from the Diatonic after these two genera were introduced and after the rules of each genus were codified makes does not matter at all; firstly, because it is a chimera without foundation and not based on any witness account of any approved author, nor it is possible to believe that such an empty tradition and such an impertinent law would have been ever accepted universally, since this would be exactly the same as a poor harpist was ordered not to pluck this or that note after that or that other one after he tuned his Harp diatonically or with the natural intervals and notes of this genus, which can be heard in our small harp, as, for instance, never to [-<f.36v>-] leap from E la mi to g sol re ut, nor from G sol re ut to [sqb] mi, nor from F fa ut to A la mi re, nor from A la mi re to C solfa ut, nor from [sqb] mi to D la sol re nor from C sol fa ut to a la mi re, nor from D la sol re to F fa ut towards the high register and, conversely, towards the low register. In other words, this would be tantamount to tying his hands and not allowing him to do half of what he might want to do, and, if one breaks this rule, he would be deemed not to be using the simple genus any longer. Therefore, if it were true, as Artusi maintains, that mixed music cannot have a good effect, but only the simple one, this sort of Diatonic so strangely constrained would have been extraordinarily effective. Hence, one must hold as certain and indubitable that in any disposition of notes of any genus it always was and always will be allowed to use all the intervals which it is humanly possible to make from one note to the other, and that this does not alter the nature of the genera, but the enlargement or the restriction of the intervals which is made by changing the composition of the mobile notes and by interposing new notes and intervals, which constitutes the mixture of the genera. Therefore, it will be also allowed to leap from the first to the third note of the Tetrachord in the Chromatic and to produce a tone, and to leap from the second to the fourth one and produce a Ditone. Equally, it will be allowed in the Enharmonic to leap from the first to the second note producing a semitone, which must not be excluded from this genus more than the Semiditone or the Ditone from the Diatonic. I could also, to provide evidence of what [-<f.37r>-] I say, avail myself of Boethius' authority, who says at chapter 23 of the first book <aliqua verba omissa sunt>

But perhaps someone will say, if, for instance, I leap from the first to the third note in the Chromatic, namely, moving from E to #F, that they will no longer be two uncompounded semitones, such as those that the Chromatic seeks out, but an Uncompounded Tone. I reply that the act of moving by the aforesaid leap occasionally or when it suits the singer or the player does not make said leap and interval uncompounded, because uncompounded is the one which can be divided in that genus, as it will be necessary in the Diatonic, as it is clearly expressed by Boethius/ But those who interpreted it otherwise <aliqua verba omissa sunt>

However, it will not be allowed nevertheless to move by two adjacent semitones in the diatonic and in the enharmonic nor to split the interval of that Semiditone which is found in the second place of the Chromatic tetrachord into two leaps as well as the Ditone which is in the same place of the Enharmonic. Therefore, observing the genera does not mean to seek out all the four[-<f.37v>-] notes of each Tetrachord one after the other or to start always from their first notes without moving from the first to the third one, but in not interposing other intervals or altering the shape of those of each Tetrachord. I shall not extend myself any further because said opinion has been rebuked sufficiently by Zarlino [chapter 15, third part in marg.] in the Institutioni as well as in the Dimostrationsi. I add only this, namely, that, if the Tritone, which some exclude from the Diatonic and is a very harsh interval, can be used in the Chromatic and in the Enharmonic, all the more reasonably both of those intervals, which are sweet and consonant, are suited to the other two genera, which are sweet and delicate. In fact if in any way the Semiditone has to be set as a specific interval of the Chromatic and the Ditone of the Enharmonic, in my opinion this difference should be made in the concerto or composition for several parts rather than in the unwinding of a single melody, so, rather in what we call Symphoniu<gia> than in the Melopoeia, because I would deem not improbable that at least in the beginning, when the diatonia species, which has only octaves and consonant fifths and fourths, was used in the Diatonic, the semiditone was used as a consonance only in the Chromatic and, consequently also the major sixth, while in the Enharmonic only the ditone was used as well as the minor sixth. The reason for this is that because it seems that these consonances came to light through the use of these two genera and that each genus refers to one of the sixth divisions in which the Diapason is divided, namely, the Diatonic at the fifth and fourth, the Chromatic at the semiditone [-<f.38r>-] and at the major Hexachord and the Enharmonic at the Ditone and at the minor Hexachord, since it is also probable that the ancient enacted this practice, since they were more mindful of the rules than we are and took fewer liberties, and it is believed that, as they used few notes and consonances at least in serious compositions, thus they also realised that they achieved greater variety by assigning to each type of composition some individual feature. However, since we can have little certainty of this, let us allow each to have one's own opinion.

[That the Tritone and the semidiapente must not be excluded from the Diatonic chapter 26 in marg.]

Some writers, such as Glareanus, were convinced that the Tritone, nowadays commonly called false fourth, which is placed between F and [sqb] ascending and the Semidiapente called false Fifth and called pseudodiapente by us in our Latin writings with more appropriate name, which contains two semitones or minor third, such as between [sqb] and F fa ut, are not diatonic intervals. They were drawn to this, in my opinion, from seeing that intervals of this kind are not found in the Ecclesiastical chants, which are very ancient for the most part. However, they did not realise that, since they are harsh and difficult to tune, they did not suit so tranquil and simple a music as the one of the plainchant, and that, for this reason, they were not accepted into it. Nevertheless, they are used with good judgment by modern composers in their settings of Italian poems [-<f.38v>-] to express some harsh feelings and particular emotions, since nature seems to have placed them in the System between the mentioned notes specifically to express those feelings. It is very true that Contrapuntists (who imagine that the whole of Music consists in counterpoint) are convinced for the most part that the power and the effectiveness of

music derives much more from the strength of the consonances than from the progress and from the movement of the air or of the Melody considered in itself. However, I just say this in passing. Therefore, if one were able to conclude that they are not diatonic because they are used rarely because of their harshness and their difficulty, one might say the same of the sevenths, which are almost never used, and of the sixths which are not used very often, especially in plainsong. These have also been deceived from seeing that, while three tones follow each other by stepwise motion in a continuous sequence of notes called *Agoge* by Guido, it one starts from the extreme note of that progression and comes back, the *Mi* is changed into *fa* producing a semitone instead of a Tone, as here below,

[Doni, *Compendium*, f.38v]

in order to avoid the harshness produced by those three Tones. It seems to me that a great mistake is committed here, which consists not in making this mutation where the subject requires it and where music aims more to please than to produce emotions, but [-<f.39r>-] in not marking with the *b* flat the note which takes the *fa*, thus avoiding any confusion when it has to be sung or played as it is. Therefore, not only the Tritone and the Semidiapente must not be excluded from the Diatonic. On the contrary, they are more suited to this genus than to the other ones, which are soft and less hard. To sum up, it is a sign of inexperience to consider an interval, which is born from the natural notes of a genus, alien to that genus.

[That all the Genera admit a Tone in every octave chapter 27 in marg.]

Now it is necessary to solve another difficulty which concerns the Tone of the Disjunction, which is the one found between *A la mi re* and [sqb] *mi*, whether it can, and should, be admitted in the Chromatic and in the Enharmonic as well as in the Diatonic. There is no shortage of those who say that it should not be admitted, as the aforesaid Don Nicola, who has kept to this rule very scrupulously in his Chromatic and Enharmonic compositions, believing that no tone could intervene in them. Bottrigari, as someone who had greater familiarity with the good authors than Don Nicola and shows himself to be of firmer judgment, disagreed. Moreover, he demonstrates that the opposite is true with several arguments. Equally, Gallilei, who was endowed with higher intellect, inclined for the opposite opinion, but he did not state any of his views on this matter in a definite manner, “although (he said) I have very strong doubts (albeit against the prevailing opinion) that it was allowed to any harmonic genus to progress within its System by the tone [-<f.39v>-] of the Disjunction, because it was common to any species of each genus and not subject, together with the lowest (namely, the one from *A re* to *B mi*) to the alteration als all the others which are not contained in the Stable notes of the Tetrachords.” Zarlino, although in his *Division of the Monochord* according to the genera he places this Tone in its place in each of them, nevertheless he appears to have embraced the same view as Don Nicola, convinced perhaps that it was not used in those two genera. [Institutioni, chapter 75, part 3 in marg.] In fact, he maintained that the larger tone is a expressly Diatonic. Therefore, since this tone is always of sesquiottava proportion and larger, since it completes the octave with two fourths, from this one realises that he excludes it from the other two genera. However, he was really mistaken in this, because, if the Diatonic, which he believes it is sung nowadays, has a tone which is particular and specific of it, that would be the smaller one (which does not intervene in the other two genera) rather than the larger one, as Gallilei himself pointed out. Therefore, the smaller

Tone would be specific of the Diatonic, at least in the Syntonic species, the smaller Semitone of the Chromatic and the Diesis of the Enharmonic. Now, since this is a very important question in music, it will be good to resolve it not only with arguments but also with irrefragable authorities and witness accounts. [~<f.40r>-] Aristoxenus, whose authority must not be regarded as less important in music than the one Aristotle's, his Teacher in the field of philosophy, says it openly in many passages of the third book of his Harmonics. To be brief, I shall adduce only two of those. He says: [ean goun dekhthe to idion tes diazeuxeos me kinoumenon en tais ton genon diaforais; delon hoti leipetai en autois tois tou diatessaron meresi ten kinesin einai]. This translates: "Therefore, it is shown that the particular interval of the Disjunction does not move within the variations of the genera, it will be evident that the alteration must be done in the same parts of the fourth or Tetrachord." Further on he says that [en harmonia kai khromati duo toniaia exes ou tethestai], which means: In the Enharmonic and in the Chromatic two intervals of a Tone will not be placed one after the other," which is a way of saying indirectly that one is allowed in said two genera. The same Aristoxenus repeats this shortly after, where he says: [hoste delon hoti en harmonia kai khromati hou tethestai duo toinaia exes. en diatono de tria toniaia exes tethestai pleio d' ou], which means: "Therefore, it is manifest that in the Enharmonic and in the Chromatic one will not place two tones one after the other, but in the Diatonic one will be allowed to place three, but no more." A little further on, he adds: [en to auto de [-<f.40v>-] genei touto duo hemitonia exes ou tethestai], which means: "In this very genus (Diatonic) one will not be able to place two intervals of a semitone." However, so that nobody may think that I am avoiding the difficulty, although Aristoxenus provides no other reason to support this rule of his, if not to say that the notes of the other intervals that may be added "as the one of the fourth Tone to the three of the Diatonic, or the second Semitone under the first one in the same genus) would not have their correspondence of fourth and fifths, just because of this one is allowed to say that this rule is not valid also in our time when we have the consonant thirds, because, apart from the fact that one must believe, as I mentioned above that they were also known at the time of Aristoxenus, more, he himself states it where <aliqua verba ommissa sunt>

Also, it seems to me that one might take as a certain rule that that System of four consecutive tones would not be viable because of its harshness, but not only that it is not natural (because the Chromatic and Enharmonic tetrachord are also not natural) but also destructive of the song and of the melody. Thus, [~<f.41r>-] to place three Semitones under three tones, although, if the #D is placed under the E thus #D E F G a, namely,

[Doni, Compendium, 41r],

the Tritone will be contained between the first and the fifth note, which also is found in the natural System between F faut and [sqb] mi, nevertheless here the situation is different, because, although the F does not have the fourth above, at least it has the fifth, and this is sufficient. The same reason is valid in the case of the Semidiapente between [sqb] and F, but in this example the #D would have neither the fourth above nor the fifth. To say that above the a there is the b flat is which would respond in fifth with the #D is not relevant because there would follow a very great inconvenience in that said note #D could not be adopted if not via the conjunct System. Moreover, the division of the

Tetrachords would be subverted through the division of the Tones of the disjunction, which are ordered so well, and all the genera and all the harmony would be in disarray. If Aristoxenus availed himself of other reasons apart from the intention that each tone had its correspondent by fifth or by fourth, he did so because that was sufficient to its purpose. However, if we suppose, although we do not allow, that in the ancient System there was no correspondence between the thirds among the notes, I do not believe that because of this Vicentino's practice will prevail over Aristoxenus' doctrine and that of all the ancient writers. Therefore, [-<f.41v>-] one must believe that, had he read and understood Aristoxenus and the others (as it seems that he read no other author from Boethius onwards) he would have not committed such a solemn mistake to create a Tetrachord mixed of Chromatic and Enharmonic, as he has done.

[Si proua questa massima con altre autorità e ragioni capitolo 28 in marg.]

There is almost no ancient author who wrote about music from whom one cannot extract conclusively the truth of this proposition. I will be satisfied with naming just a few ones to avoid extending myself unduly. Firstly, as to Ptolemy, one can see that wherever he explains the System of any genus with their species and of any mode in every octave he places a tone beyond the two particular tetrachords, as it is easy to understand from the proportions contained in the numbers which indicate this or that note and string of the Systems. Moreover, Bacchius, Cleonides (an Introduction by whom is widely available, which is attributed in some texts to Euclid) and the other authors of similar summaries, which are concise as to their words but full of notable observations taken from good authors, are unanimous on this same matter. Therefore, where Cleonides discusses the seven species of the Diapason, which each belong to one of the seven modes, says explicitly that one has the tone in the first place, another one in the second, and similarly the others one after the other. He talks first about the Chromatic and Enharmonic, and then separately about the Diatonic, which, although [-<f.42r>-] it also has other tones, nevertheless it follows the same Illustration, namely, in that it has the Tone (which has to be understood as the Tone of the Disjunction) in one of the seven intervals. Bacchius says the same things with slightly different words in his Isagoge. As to the reasons of this, there are many. Bottrigari adduces other reasons as well, which one will be able to read in his writings, since I was never keen to copy others work. Therefore, I state that, if one took away this Tone, the order of the Tetrachords, of the pentachords and also of all the melodies would be in disarray because all the Modes would be mixed together (these followers of Vicentino do not deal with this issue) and an octave would not be formed by only eight notes in these two genera, because, for instance, in the Chromatic, once two conjoined Tetrachords have been put in place, seven notes will be put into place from which a tone is created to complete the octave, and, since it is necessary to divide that tone, two other notes will be required. However, we shall find ourselves much more trapped in the Enharmonic, because, if we put two dieses which divided the first Semitone after the two fourths, another Semitone is needed to complete the octave, but this is not allowed. Therefore, we shall have to place the ditone there, which will follow the two dieses, so that many notes will not have their correspondent ones at the distance of an octave, [-<f.42v>-] as one can see here, which is too great a mistake.

[[Doni, Compendium, 42v, 1]]

[Doni, Compendium, 42v, 2; text: Progressione Enarmonica [[di Don Nicola]] senza Tuoni]

Also, this inconvenient would follow, namely, that, truly, the difference between [sqb] square and b flat and that beautiful variety which the Modes create in all the genera, as we shall illustrate at the appropriate time would be abolished. Moreover, these Chromatic and Enharmonic melodies would turn out to be so silly and mawkish (as it is necessary that those of Don Nicola and of his followers should turn out to be) that it would be impossible to listen to them, since the tone, which provides them with much of their grace and liveliness. In fact, as in painting, from which I am happy to draw my comparisons because of the admirable resonance that this one has with Melody, a Portrait made up only with extreme colours, such as black or Red, or devoid of any mixture of grey, would produce a very poor result, the same would happen in our case, since those large intervals (Ditone and Semiditone) are not divided from the small ones (Semitone and diesis) by a middle one, which is the Tone. One has to know that the ancient painters used said word to mean that middle colour which is midway between light and shadow, [-<f.43r>-] which is that natural and pure colour of cinnabar without mixture of white lead or colour black, in my opinion, in a red garment, for instance, the same colour as cinnabar. This metaphor is adopted with admirable success by music, especially if formed of two genera, because that tone has the precise role of natural and diatonic foundation in those as well to connect the extremes and perfect the natural voice rather than to destroy it as these modern Chromatists and Enharmonists do. Moreover, those ancient painters called harmoge [harmoge], a word understood in the same meaning by musicians, which means agreement, that sweet and union of two adjacent colours, which can be seen in the colours of the rainbow and in the well realised paintings, which, without this turn out to be too crude, as it is music which lacks those ornaments which are called accenti nowadays and used to be called plasma, and consist of semitones. However, on this matter one can see what the most erudite Montioso writes in his pamphlet De pictura. As to the objection raised by Bottrigari against Vicentino, which is taken from the ancient tablature of certain Greek Hymns or Nomoi by a very ancient musician called Dionysius which are found added as a rule to the text of Aristides and have been published in part by Gallilei, by Patrizi and by others, one should not hold them in too great a regard because said notes are found to be very corrupted and lacking nowadays because of their great antiquity [-<f.43v>-] and of the negligence of the copyists, since not only all the notes of the instruments, which were called at the time [krousis], namely sound or percussion, are missing, and those of the bars ([of which the ancient had their own version and I found them in a certain manuscript]) which they had all divided, although it is believed commonly that they did not had other way to distinguish the tempi than those that are derived from pronunciation and from the rhythm of the verse) but the notes of the melody itself are seen to be very incorrect and reduced in number and also lacking all the specific signs of the Enharmonic, in which genus those compositions were or were said to be, as I have demonstrated more articulately elsewhere. However, if someone with a desire to play the pedant wanted to say that, although the tone of the disjunction had a place in music Theory, nevertheless it was not used in practical singing, apart from the fact that this would be said freely and without any evidence, the ancient did not distinguish, as we do nowadays, between practice and Theory. In fact they dealt with the sciences theoretically and with the Arts practically and they taught nothing in these which was deemed not to be useful to the practice and the profession. Moreover, since the above-mentioned Greek Authors mixed many practical matters connected to melody [-<f.44r>-] in their writings, it would be too grave a mistake if, when they mentioned the disposition of the System according to Theory, they did not also hint to the variations enacted by performing in practice. However, the entire matter is thus, namely, that everything that these writers discuss was practised by musicians, and, although a player did not use the

Canon and the Compass every time that a player wanted to tune an Instrument, as Salinas points out that Glareano believed, nevertheless they approached in practice the right size of those very intervals which are described by the authors according to the modes and the genera, as much as they could.

[What is the Spondiasmus, the Ecbole and the Eclysis chapter 29 in marg.]

However, let us see a little if some other special interval is found in these genera, which has to be observed to master them and realise them well. I have found mention of three, which were used in the Enharmonic rather than in the other genera, as one can extract from Aristides and from Bacchius. They were the Spondaeus or Spondiasmus, the Ecbole and the Eclysis. The spondaeus, apart from the other two meanings which entail a type of metric foot and certain air which was used in the Phrygian rites, denotes also a interval of three dieses, namely three quarters of a tone. It was called thus, in my opinion, because it was used principally in those spondaic airs discovered by Olympus, the inventor of the Enharmonic genus, as Plutarch shows where he discusses the manner kept by him in this Invention and which I have explained diligently in my entire work. [-<f.44v>-] And, since this interval is hard to tune, hence it was not used if not in music full of gravity and slow tempi, such as the one of Olympus' were, in which the Spondaic Rhythm was used as well, which contains long and heavy notes. This interval is specific and naturally suited to the species of Diatonic which they called soft, whose tetrachord progressed through two dieses or a Semitone, three dieses or a Spondaeus and five dieses, which, in all, add up to ten, which are as many as make up a Diatessaron. Although it appears as if this interval is irrational, as the other two, as the Enharmonic dieses simple and mixed, nevertheless it matches that Semitone which Zarlino says of largest proportion $27/25$, namely a larger semitone enlarged by a comma, which is found naturally between the chromatic #C and the D la sol re, between the chromatic #F and the G sol re ut and the #A with the diesis and [sqb] mi, as it is evident, but more specifically in the examples which I provide here, which contain a c<omma.>

[[Doni, Compendium, 44v, 1; text: Spondaismo, Enarmonia] in marg.].

As to the Ecbole, Bacchio explains to us what it is where he says that it is obtained by ascending five dieses with this example from [signum] which is the sign of the Trite Diezeugmenon (but in the Enharmonic genus, of which the sign is lacking) [[namely [signum] a [signum] a]], which I mark thus [Enharmonic [sqb] mi in marg.] [signum] to [signum], sign of the Diatonic Paranete Diezeugmenon, namely D la sol re, in this way:

[Doni, Compendium, 44v, 2; text: Ecbo<le>].

However, the same author explains that the Eclysis is a lowering of three dieses as from the same not to the Diatonic Trite Synemmenon marked thus [signum] (as it has to be, and it is not in the [-<f.45r>-] French translation by Padre Mersenne) or b fa, thus:

[Doni, Compendium, 45r, 3; text: Eclysi].

Plutarch, in his very learned book on Music, teaches us that Polymnastus enlarged these two intervals very considerably [[this, I believe, means that he began to enlarge them as]], namely, how he introduced them, I believe, and how they were used later on. Therefore, the spondaeus had the value of three dieses, considered both descending and ascending, the Eclysis represented the same three dieses in descending and the Ecbole five in ascending. But, someone will say, why another two terms corresponding to these are not mentioned, namely, one which signifies three dieses tuned in ascending and the other five in descending? I myself would believe that the Spondaism or Spondaeus might have filled in for the first one and that the second one does not have a name because it was not used in practice, since it was possibly too difficult to tune five dieses in descending. It has to be noted, however, that these intervals are more suited to the mixed Enharmonic (which, I believe, was the one which was used ordinarily) than to the pure one, as the fact that it is found between two notes, which are one Enharmonic and the other Diatonic, demonstrates.

[On some extravagant intervals which can occur in the two Genera chapter 30 in marg.] I do not believe that no other extravagant intervals were practiced in the Enharmonic, [-<f.45v>-] as it would be the one of seven dieses, thus,

[Doni, Compendium, 45v, 1]

or of nine, thus,

[Doni, Compendium, 45v, 2]

or of thirteen, thus,

[Doni, Compendium, 45v, 3],

which would turn out to be too difficult and little necessary. Hence, the Enharmonic intervals which do not occur within other genera will be these, namely of one diesis, of three and of five.

[Doni, Compendium, 45v, 4; text: ottava Enarmonica per [sqb] quadro, b molle, t, d]

However, in order that they may be known better, I shall place first an octave divided Enharmonically [signum] without the specific Diatonic notes

[Doni, Compendium, 45v, 5; text: T, d].

Hence, one can see that the Diapason in every pure genus, without mixing the [sqb] square with the b flat, contains eight notes, while, when two genera are mixed, it contains 10, and 12 when all three of the genera are united as in this

[Doni, Compendium, 45v, 6; text: Diapente ne 3 generi per [sqb], tre, b]

[-<f.46r>-] It is also worth noting in the Enharmonic the intervals of the Diapason reduced by a diesis and enlarged by the same interval. These can be encountered often in the compositions for two voices. They are these:

[Doni, Compendium, 46r, 1; text: 8. diminuita, accresciuta].

However, in order to consider the particular intervals which occur in the Chromatic genus, it is worth noting that the smallest and uncompounded is the smaller Semitone, as

[Doni, Compendium, 46r, 2],

while the one which consists of a Semitone and a larger tone added together, as one can see here, is worthy of consideration among the compounded ones:

e tra i composti è notabile quello che consiste in un [[Semituono mi]] Semitono et un' tuono maggiore insieme uniti come qui si uede

[Doni, Compendium, 46r, 3],

which is a Ditone with added the amount by which the larger Semitone exceeds the minor, which is the Enharmonic diesis described by modern theorists.

However, the entire System of the pure Chromatic octave is this one:

[Doni, Compendium, 46r, 4; text: per [sqb] quadro, b molle],

while, if the Chromatic is mixed with the Diatonic, it contains these two notes in both ways, namely through the Disjunction and through the Conjunction.

[Doni, Compendium, 46r, 5; text: S, T]

Here, it is worth noting in particular in this mixture of Chromatic and Diatonic notes that, if one wants to modulate all of them, one finds three consecutive semitones and

two semitones. And if one wants to observe the perfect harmony the first and the third semitone are found to be larger, while the middle one is smaller, and of the two tones the lower is larger and the smaller is higher.

[-<f.46v>-] Equally, in the mixture of two genera, Chromatic and Enharmonic, as one sees here

[Doni, Compendium, f.46v; text: d. S. T.],

one encounters ten notes.

However, before we move further on, it is worth noting that, the two tetrachords of the octaves meet between E and [sqb] and between [sqb] and e, it follows necessarily that the Enharmonic signs fall only on to E and [sqb] in the case of the disjunction, while in the case of the conjunction they fall on E and A. The Chromatic ones, instead, in the case of

the disjunction fall on to F and C, and in the case of the conjunction only on F, while the b is placed in the second position instead of the [signum] C, as one can see from the above placed examples. However, because there is a comma more than a smaller semitone between b and [sqb] (namely a middle size semitone of proportion) it is worth investigating how this could be and what a perfect and participated System is.

[What Participation is in the System of the Instruments chapter 31 in marg.]

Therefore, the participation (word used still nowadays by makers of keyboard Instruments) is nothing but the division of a comma into the intervals of the System which is sung and played and practically in the Instruments used. This participation is born of the property and Disposition of the Syntonic Diatonic, to which modern music is closer than to any other species, and which is the most perfect of all. It is attributed to Ptolemy, not because he is its inventor, as it is believed commonly, but because he is the first to mention it among the authors whose works have survived until our time. I said that our music is closer to it rather than it conforms exactly because, although the [-<f.47r>-] most learned Zarlino proved with excellent arguments that Diatonic Diatoniaeus is not used in practice, as it was believed until his time and as Gallilei wanted to argue against Zarlino himself (hence he took the chance to answer him by writing the two books of the Supplimenti Harmonici, which is the most beautiful work that he wrote) nevertheless he does not demonstrate fully that this Syntonic is played and sung in its perfection. I say that it is not played because in the instruments there is no difference of larger and smaller tone and no interval is in its true proportion, from the octaves onwards, but, that it is not even used in singing, this can be seen. In fact, although Zarlino says that if this were so, the potency would not be reduced to actuality and that is reason are very inconclusive, nevertheless it is necessary that it is so. In fact, as to our performances which take place nowadays regularly accompanied by Instruments, especially the ones with a keyboard, which are even less perfect in this respect than viols and lutes, it has to be admitted that the voices have developed the habit to adopt those same intervals which they have heard played in the Instruments, and that the Masters of the chapels, when they teach children, they cannot teach them to hold the voice correctly because they are used to sing accompanied by harpsichords and organs or they have learned from those who had adopted the wrong intonation from these very instruments. It is of no use to say that, since [-<f.47v>-] nature always seeks to approach perfection and since very fine ears cannot stand intervals which are not right, when they sing without the accompaniment of Instruments, they voices themselves return naturally to produce the correct intervals. In fact, although we can allow that this might happen in certain long notes when the singers have time to think and to chew over, so to speak, the consonances that they produce, nevertheless they will not be able to do this in other cases, hence it follows, as Zarlino himself admits that sometimes one can hear <aliqua verba omissa sunt>

On the contrary, I have heard from Signor Giovanni Girolamo Kapsberger, a person of very good taste, that nowadays singers do not sing very correctly. He attributes this correctly to the application of the keyboard instruments, which is so widespread. Galillei says very well of these which they approach Ptolemys Syntonic, since their tuning is non other than the tempered Syntonic System, while the instruments with a neck, such as lutes, viols et cetera, are much closer to the Diatonic Diatoniaeus, while the voices approach more this or that one according to the Instruments which accompany them. Talking in general, it is inevitable that they partake more of the Syntonic than the Diatoniaeus, as Zarlino thinks with good reason, since the keyboard instruments are the most used in music, and especially the organ, which appear that they were the only

predominant instrument for many centuries, during which no other sung music was used than the Ecclesiastical one, as it is nowadays among the Greeks, not taking into account the songs of the peasants and of the shepherds and some guitar or cithara which might have been used [-<f.48r>-] in those days and without any artistry.

The points out very correctly that the first consonances, called perfect by Zarlino, namely, the fourth and the fifth, are more perfect on the lutes and viols than on the keyboard instruments, although I believe that there could be little difference as to the major thirds, while there should be a great difference in the minor thirds, which are much more perfect on the keyboard instruments. Hence, although both these type of instruments are participated, they do not have the same participation. In order to explain more fully how this participation or division of the Comma must be done, one must be aware that the Harmony of the Syntonic Diatonic contains three larger tones, two smaller ones and two larger Semitones, as one can see here:

[Doni, Compendium, 48r; text: Tuono, Semituono, maggiore, minore].

It flows from this that the fourth which is found between A la mi re and D la sol re is not consonant, but enlarged by a comma by being made up of two larger tones and a larger Semitone and, equally, the fifth which is found from D la sol re and e la mi is dissonant because is reduced by a comma, since it contains two smaller Tones and one larger one instead of containing two larger ones and a smaller one, as it should. Also, the minor third between D la sol re and F fa ut is dissonant because it has the smaller tone instead of the larger one. One remedies to these drawbacks by subdividing that comma [-<f.48v>-] of the Tone of the Division, which is the one which produces all of these difficulties, among the other intervals. Thus, all the consonances from the Diapason onwards are altered and removed from their proportion, but not so much that they would turn out to be unpleasant to the ear, as one can see in practice. Hence, the fifths are left 'blunted', as they say, and the fourths enlarged, and, equally, the major thirds are enlarged and the minor ones are reduced, and, consequently, the sixths are altered as well. Here one should note that, although the fourth is altered as much as the fifth, albeit one is enlarged and the other is reduced, nevertheless the fourth is much more damaged by this, because, since this consonance is really very imperfect (so, it is greatly vituperated by ancient and modern musicians, and mostly not Italian, against the authority of the ancients and experience, although to place it among the perfect consonances, as Zarlino does, seems to me to attribute to it too much) and so fleeting that if it is not absolutely perfect it appears dissonant. Therefore, it is not used as a consonance by itself, but only when accompanied and in the compositions for many voices [[as it is one which has something of the feminine]]. As to the fifth, instead, because it is very perfect and full, it tolerates that alteration, as one can gather from experience. Hence, it is not true what some say that the more perfect the consonance are, the less they suffer alteration, if it is true that what happens is the complete opposite of this, namely, that the ones, [-<f.49r>-] which are more perfect, can be altered more without damaging them than the others, just as a Rich man becomes less poor if one takes away from him the same quantity of riches that is subtracted from a poor man. However, it is true that, since the fifth and the fourth are correlated to each other, it is much better that the larger should be reduced and the smaller should be enlarged than the other way round, because it appears that, in this way, they become closer together, as their nature requires them to be. For the same reason, the larger of the two thirds withstands to be reduced better, while the smaller one is more

suited to be enlarged. Moreover, these two intervals tolerate to be altered in this way much more than the first two, namely, the fifth and the fourth. To this follows that every interval placed between these two, namely, sesquiquarto and sesquiquinto, appear to be consonant, and thus the middle thirds (and also the sixths) which are not simple consonants but composed of one of those and of the fourth.

[That the fifth and the fourth are not altered because of the acquisition of the thirds, but for other reasons chapter 32 in marg.]

One must note that it is not true, as many think, that the fifth and the fourth are altered in order to acquire the thirds, since the complete opposite occurs, namely, when those are perfect, these are also perfect, as one can gather from assigning to every consonance its numbers and proportions. However, this participation occurs in order to acquire many consonances by subdividing that comma in such a way that those three mentioned non become no smaller than the other of the System. This is something which turns out to be very suited to the modern practice of combining many melodies together, since modern composers prefer

[-<f.49v>-] to have the largest possible number of consonances, rather than for the consonances that they have to be more perfect, while the ancient, aware that a large number always has as a consequence many imperfection, were contented with compositions using fewer notes, and thus Plato, who was very knowledgeable in the field of music

I am very surprised by Gallilei, namely, that he believed that the fifths, moved as they are used nowadays, are sweeter and more intense than the perfect ones, since he could have been learned that the opposite is true with the aid of the canon, or, rather, from the tuning itself that is done on the harpsichord and on other Instrument by ear. In fact, if the fifths are tuned to the point that the ear judges them to be the best and sweetest, it is then necessary to alter them to find the other corresponding to them, nor the consideration of the numbers and of the proportions, which is very clear, implies otherwise. It is true that one could remedy this drawbacks by adding some extra notes to the System, as the more discerning musicians have done, especially another D la sol re removed from the one marked above by a comma towards the low register. In fact, this comma would remain between the two tones C D and D E, according to whether it was added to one or the other, it would become larger or smaller according to the need because, [-<f.50r>-] if one for instance wants to build a perfect fourth above A la mi re, the D la sol re would be taken a bit lower, while, if one wanted to build a perfect semiditone on the [sqb], one would take the other one which is a larger tone higher than the C. Thus, we shall have the same number of consonances in the perfect Instrument as in the participated, and they would be perfect. This was not practised so far not because it is very difficult in itself, but because of the added difficulty of the Canon which one should use, since such small intervals, consisting of Commas and Enharmonic diesis, cannot be tuned) because of so many numbers and subdivisions which one must do with great tedium and effort. However, since we have found a new and very easy way to find all the consonances and the perfect intervals geometrically with the aid of the proportional Compass, which is called nowadays with the Latin name of Instrumentum partium and which I call Circinus analogicus, I hope that from now on this invention may be introduced as music would

derive great utility from it. However, nobody should think that this participation is achieved through rules or compasses, because the artists and the musicians make it only on the basis of the judgement of their ear. One could say that they feel their way around gropingly in looking for an adjustment among the intervals which may satisfy everyone. Moreover, they do not know, for the most part, that there is another way to tune up which is more perfect and exact. Hence, it seems redundant to me to investigate [-<f.50v>-] who invented this participation, or why it was introduced, because, although one might say that the final aim was the acquisition of many consonances, [[nevertheless, given that one hundred years ago, namely before Fogliano, nobody talked about this, and that a few years before there was widespread ignorance of good and well-thought out Music Theory (which, despite these arguments against it, has given life, so to speak, and almost improved the practice of music in our time almost twice as much). One can believe, and, consequently, they could not dream, since even nowadays few imagine this, one can also say that from the true knowledge, and being able to know the true and perfect music which, speculative, comprehends also the Theory, which (and let the supporters of ignorance say what they want) is the leader of music and cause of what is beautiful in it and without it music would not have arrived to this level (and let these supporters of ignorance say what they want)] nevertheless one can also say that a good opportunity for it had also been the ignorance of good and perfect music, which necessarily requires music Theory as well, which was widespread at the time of our great-grandfathers. In fact, although the consonances which are fuller and less perfect seem to suit better the keyboard instruments where one uses so many fingers, nevertheless in the fretted instruments, especially bowed ones, it seems that a composition based on a smaller number of notes and with perfect consonances was not to be spurned, had they had in those times such knowledge of Geometry that they could make the frets of the necks unequal and in the right proportion. [-<f.51r>] This is not so trivial that it would not be worth the effort to put it back into practice, instead to comply to the many corrupt habits of this age, as often Zarlino does by repeating every now and then that these divisions, Genera and modes cannot be used. However, should we want one day to resolve ourselves, I do not say to abandon this practice and style of composing (which itself has its place), but to try also that perfect and exquisite music, although composed of a smaller number of parts, we shall recognise the gain which we shall make.

[That the ancients used the perfect System and non-participated in their melodies chapter 33 in marg.]

However, since one shall not be convinced so readily that the ancient had a better harmony than we have (be aware that I do not use this term in the acceptation in which Zarlino intends it, namely, as an attractive disposition of consonances) it will be appropriate to provide some evidence. It seems that Ptolemy confesses this very clearly where he discusses, albeit succinctly, of several types of harmony that the Citharoedi of his time still used on the Cithara and on the Lyre, and, especially, in the last chapter of the second book where he illustrates to which proportions, of the ones which he assigns with their numbers in certain tables of the various species mixed with each other, the various harmonies which they used corresponded, moving sometimes from one to the other, such as those which he calls [sterea], [hypiotropa], [[iastioliaia], [malaka], [lydia] et cetera. In fact, since the intervals of those harmonies corresponded to the numbers and proportions which he provides, they consisted necessarily in perfect and known proportions, rather than in irrational ones, as ours are. Moreover in the first chapter of the second book he says that the proportion of a Diatessaron according to the Diatonic Diatonaeus genus

which consists in two larger Tones and a limma corresponded to the [-<f.51v>-] intervals of the Iastieaeolian modes (I have explained what they are elsewhere) since one can recognise there the said two sesquiottavi tones and the limma, although the instrumentalists, according to the habit of the Practical musicians and following Aristoxenus doctrine, they regarded it as a Semitone. Nevertheless, Didymus had discovered the sesquinono tone and put into practice the sesquiquarta proportion which contains a larger and a smaller tone. Hence one can see that Ptolemy, not because he did not know the Syntonic, but because of the difficulty of those mutations and exits, hints at the fact that they tuned in some strings the

It seems that it can be also proved sufficiently from the fact that one does not see that the ancient musicians mention this participation, hence one may believe that either it was not put into practice or that it was not highly regarded. I say this because it is possible that although it was not used on the Lyra, on the Cithara and in the most perfect sorts of flutes which were used in the accompaniment of those attractive and excellent melodies, nevertheless they practised in the Instrumental performances for many voices and in the Instruments with many strings called organa polychorda. Moreover, the argument adduced by Salinas to prove that the ancient Instruments had their consonances altered as ours are (I prefer to use this term rather than Imperfect, so that they may not be confused with the thirds and the sixths) is very weak and ineffective. In fact, in order to prove his point Salinas relates a passage of Galenus (who lived almost a contemporary of Ptolemy) where he says that health and good temperament receives flexibility just as the consonances normally used in the Instruments, since it is often necessary that after a musician has tuned a Lyre perfectly according to his judgment, some other musician comes along who changes the tuning [-<f.52r>-] in some way. Who cannot see that this can also take place also in the perfect tuning, especially in the less excellent consonances, such as the minor thirds and the fourths, which cannot be judged so easily by the ear? However, who wanted to know the ways at our disposal to enact our this participation according to rule and artistry rather than simply by ear, they should see what Zarlino, Salinas, and Gallilei write with great diligence, apart from Fogliano who seems to have been the first among modern writers [[to illustrate this part of the Harmonics]] to deal with this topic and to illustrate thoroughly this part of the Harmonics of music.

[That the notes of D la sol re and G sol re ut marked with the diesis are not Chromatic, and whether chromatic compositions and such that they belong to the Common, Mixed and Combined genus can be found chapter 35 in marg.]

However, to go back to the Intervals and notes belonging to each genus, I know that many will never have heard of that the D la sol re and the G sol re ut with the Diesis are not Chromatic notes, nevertheless this is absolutely true and it was observed before me by Zarlino and Bottrigari, although, since they did not understand the nature of the Tones, they were not able to know what notes they were, while Bottrigari himself said that they were neither Diatonic, Chromatic or Enharmonic. However, the fact remains that they are notes which belong to several tones, or to two mixed together and that they are as Diatonic as the other ones, as it will be explained further on. Nevertheless, we shall not bother with mentioning some unusual intervals here (such as the Semidiatessaron or Pseudodiatessaron) which are born of the mixture of these four notes, since this belongs more to the doctrine of the modes than to the one of the genera. From what it has been said so far one can know very clearly that not only nowadays there are no Enharmonic melodies but also no Chromatic ones, because who has composed some ex professo, has

made a mistake *toto coelo*, as they say, and who has believed to mix the Chromatic [-<f.52v>-] with the accidental notes in the Diatonic, has not succeeded either, despite the fact that some composers have added the adjective 'Chromatic' on the first-page of their published compositions, as Festa has done. As to those of Cipriano which are entitled Chromatic because they often use those notes, I believe that this is a mistake of the printer than of the composer himself, as I believe that he was not so ignorant. It is very true that in the the madrigals of the Prince of Venosa (especially in the last books) there are many Chromatic passages, but one can believe that he included them in writing moved by that admirable aptitude towards any sort of music and not because he was distinctly aware of the progress and of the properties of these genera. In fact, should he have possessed them thoroughly and had he understood the difference between the ancient modes and ours he would have reduced music to its initial and ancient splendour. It is appropriate to distinguish between a chromatic interval and a chromatic passage, because, where one sees, in the same melodic line, two different notes one next to the other, as, for instance a [sqb] quadro next to a b flat, that is a Chromatic passage, or a smaller semitone, as this one is:

[-<f.53r>-] However, in order for it to be called a Chromatic passage, three notes or more shall be needed, as in this case

Among the other Madrigals, the one entitled *Resta di darmi noia*, is has a very Chromatic character and it can be called absolutely mixed of Diatonic and Chromatic. However, if one has to keep to the precise terminology, the melody that contains now one and now more Diatonic passages and other Chromatic and Enharmonic ones with their distinct and specific cadences in all the singing parts will have to be called Mixed, whereas in those compositions where there is only one voice, the solo voice will determine the name, rather than the Instrumental parts. Of this I cannot provide any example, because there is none. However, in those compositions where there is, here and there, some Chromatic interval or short Chromatic or Enharmonic brief passage, of or more than one genus which cannot be easily distinguished with their boundaries and cadences, they will have to be defined as belonging to a 'fused-into-one' genus rather than to a mixed one, so that, if there are the Common, the Mixed and the Fused-into-one besides the three pure genera, and if compositions can be classified according different Combinations of two and three genera, several different species will be created, which I leave to describe to those who have more time than I have. To sum up, nowadays there are some Diatonic melodies, rendered Chromatic or mixed with some Chromatic passages and intervals, but without a rigorous observance of the mode and of the species, but none of them is pure according to the true and ancient Chromatic. A different kind of union of two genera can be obtained by coupling a tetrachord of one sort with one of an other one within the same Diapason, such as a Diatonic and Chromatic one. In fact, if two species or two colours of one and the same genus can be linked together as one can see in Ptolemy, who discusses it as something which was received traditionally and practised, rather than introduced by him, why should it not be possible do the same with two genera? In fact, if in the practice of counterpoint one will found few consonances, the same also happens in Ptolemy's mixtures, which can be used, at least in some composition for two voices, as these, which can be called compounded genus to distinguish them from the Mixed, Fused-into-one and Common genus, just as the architects call Compounded order the one which unites the ornaments of the Ionic and of the Corinthian. [-<f.53v>-] No melody can be found in the

Enharmonic which participates of it even a little, since the notes A la mi re and E la mi with the diesis are not Enharmonic in another way, but notes of another Tone or Metabolic, as the ancient used to call them, no less than the D la so re and the G sol re ut, as we shall demonstrate further one.

[On the variety produced by the Three genera with regard to counterpoint 36 in marg.]

However, as to the counterpoint or Symphoniurgia one must know that the same consonances are found in all the genera, except for the fact that in some species there are no thirds or sixths, since it is not possible to find any more than those found so-far, as somebody perhaps is convinced. Hence, even if some new one came to light, this would not cause notable variety in the combinations or sounds or Harmonies, as they call them. If someone likes this variety so much, one must be aware that it can be obtained from three elements and not otherwise: either from some Instrument of different sound, or from intervals which are different from the usual ones which are produced with the aid of those different species which the ancients used, or, finally, from not using all the consonances indistinctly, as they do nowadays, in every note and in every kind of melody, which could be done if one held in higher consideration than they are held the compositions made from few notes, on condition that they were perfect in any other respect, as I discussed elsewhere. However, it will be difficult to persuade people of this nowadays, when people believe that the most beautiful pieces of music are the ones which contain the largest number of notes and that are full of any kind of consonances. The greatest addition realised by the genera in the Symphoniurgia consists of two elements: the first one consists in the fact that in the Enharmonic mixed with the Chromatic those thirds mentioned above, which are neither major nor minor, are needed, as from [signum] F fa ut Chromatic to A la mi re Enharmonic, thus:

[<f.54r>-] [Doni, Compendium, 54r, 1].

This third, which is composed of the sesquisepta and of the sesquivalentesima proportion, which is the interval of the first Enharmonic according to Archytas' division, is found to be in the proportion 56/45. Therefore, if I hold the note beneath while I touch these three notes diatonic E la mi, chromatic A la mi re and F fa ut in succession on the same note, I will produce three consecutive thirds of different species which produce a very suave passage, as this one is:

[Doni, Compendium, 54r, 2].

The other notable addition realised just with the Chromatic consists in the ability to produce two consecutive thirds, one minor and the other major, or two similar sixths above the same low note, and this confers great charm and delicacy to the counterpoint, as in this case:

[Doni, Compendium, 54r, 3; text: terza minore, quinta, [[sesta]], quarta, sesta, maggiore].

[<f.54v>-] We can also note that the dissonances with suspensions, syncope and other similar artifices were used principally in the Enharmonic, and that perhaps they originated

from the practice of that genus. In fact, since sometimes instrumentalists used to play also the Diatonic notes when playing Enharmonic compositions, as it was seen on the basis of Plutarch's authority, often the singer had to tune an interval of two notes produced by leap with sounds more frequent and faster than those produced by the instruments.

[-<f.55r>-] [On the use of the three genera and what Zarlino made of it chapter 37 in marg.]

As to the use of the three genera, it seems to me that I can say that the first one, as it is natural, easiest and perhaps the most beautiful of all, can and must be used, so to speak, as the bread and the food with which it is eaten, and that one should feed of it as much as one can without it becoming tiresome, as the others one would be, should they be used for too long. The Chromatic is like fruit and similar sweet and light foods, which harm and weaken one's constitution, if they are used too often, and, finally, the Enharmonic is like the spices and similar condiments which we do not use as food but to improve and provide taste to the other foods, and to stimulate the appetite. Nor should one believe that these three genera were used by the ancients any differently, since they cannot provide much pleasure when they are pure, and if somebody does not believe it, he can find evidence of this in practice. If it is true that Timotheus, who invented the Chromatic did not add but a single string to the ancient Lyre, it is too much of a coincidence that he could not use the pure Chromatic, nor those Enharmonic songs composed by Olympus which were used in the sacrifices of the Greeks belonged to that pure and neat genus, as Plutarch demonstrates in that passage which I explained more amply elsewhere, as one recognises clearly that the Enharmonic intervals (which are also different from the Common ones) were not sung in it but in a single fourth of the octave. Therefore, it is tantamount to naivety to believe that the pure genera are more [-<f.55v>-] effective than the mixed one and of the compounded ones, as Artusi states without producing any motivation and without the authority of any writer. In fact, the compositions characterised by a variety of intervals, if they are well disposed within them, will always please more and will always affect our souls than the simple ones and poorer of intervals. Iamblicus states that this is true in that very learned book of his on the life of Pythagoras. In fact, that great philosopher, who was also very expert in music, which had not reached its highest point, nevertheless, discovered certain mixtures of melodies in the three genera, which were very effective in correcting the disorderly passions, especially the ones that had just upset the souls of men. Iamblicus states this with these words, which I relate, as he is not an author found too commonly

[hoti tois men]

Namely that he (Pythagoras) invented and ordered for his followers those compositions which they called Preparations [-<f.56r>-] e Findings – these appear to me to be the meanings of the words [epartyseis] and [epaphas]) – having composed divinely certain mixtures of Diatonic, Chromatic and Enharmonic airs through which he could manage and direct the passions of the soul, which had just surged within them and went beyond the boundaries of reason, such as the feeling of sadness, Ire, pity, unreasonable envy, fear, greed, and any rancour and desire, idleness and any strange and powerful feeling, by turning them into their opposite and correcting each of them by reducing them within the boundaries of virtue with melodies which were suitable and proportionate which acted almost as life-saving medicaments. Nor should we believe that these melodies were devoid of the human voices and of meaningful words, because the instrumental

Symphonies without these were not highly regarded by the ancients. Moreover, Iamblicus himself says it openly at chapter 21, thus

This translates: “Since he believed that Music could greatly improve health, as long as it was used appropriately, for this reason he used [-<f.56v>-] to avail himself of this form of purification with great dedication. He called this ‘the cure’ and he realised it with music. He used to practise such melodies at dawn, by having someone who played the lyre sit in the middle, while other expert singers sat around him. So, while he played, they sang certain Paeans in consonance (they were a kind of cheerful and spirited jokes) which appeared to make them cheerful and which rendered their souls more measured and harmonious.” I know very well that certain important personalities have had a low opinion of these, such as Zarlino who wrote a chapter specifically against the Chromatists, but this man to whom music is truly indebted was partly right and partly wrong. In fact, on one hand, seeing that those who professed the Chromatic composed melodies so harsh and full of mistakes, as those of Don Nicola, or very harsh and of unsteady intervals such as the ones of many others who use so many accidental signs without any order, he was right in censure them. On the other hand, however, he should have considered better if this Chromatic of theirs was the true one and whether it was the same as the one used by the ancients before condemningly outright and saying that it cannot produce good effect by itself and that it cannot be used pure and neat. Bottrigari was right in reprehending him on this, although he admits in some passage that it could be used according to the ancient style, but it is not very true that the number and the words beside Harmony contribute to the composition of the genera. It is also incorrect and ambiguous this manner of speaking [Third Part chapter 76 in marg.] where he says that there can be no difference of genus in those compositions where [-<f.57r>-] there is no difference of Harmony. In fact, if one takes this word in its true and ancient meaning as a certain and specific disposition of intervals in the melodies, there can be no greater variety of Harmony than the one which the genera have with each other. However, if he interprets the word as meaning ‘variety of consonances’ according to its modern meaning, the difference of the genera does not consist in this, since each of them has the same consonances. As to the reason, which he mentions, namely that the Tactus has to be proportionate to its parts, namely, the Composition of the entire piece to the notes and melodies which compose it, which means that the same intervals, which are heard in the consonances of the parts, have to be heard also in the progress of each individual part, as he wants that it should happen in the Diatonic, but not in the other genera, I say that, if we are referring to the true Chromatic and Enharmonic, in this they do not differ almost in nothing as to the genus, as some dissonant and consonant intervals are found in each of them. In fact, without talking about the Diatonic Toniaeus and of the other species which have unusual and dissonant intervals, the intervals of the larger Semitone and of the tone, which are dissonant, are sung and played also in the Syntonic. In fact, if on one side the Enharmonic dieses and the minor Semitones are more dissonant than these or also ecmeli, on the other side the ditone and the Semiditone are used often instead of the interval of Tone in the Diatonic. As to the larger dissonant intervals, such as Tritones, False Fourths, Sevenths et cetera, it is true that they are used rarely in the Diatonic, but perhaps they occur even more rarely in the other two. [-<f.57v>-] However, the good Zarlino was more concerned, and rightly so, with some harsh and extravagant intervals which occur in the thick melodies of many accidental signs which produce a mutation of Tone, but not of genus.

[That the Rhythm and the Meter are considered in the constitution of the Genera chapter 38 in marg.]

However, do let us see on which basis Zarlino set himself to say that not only harmony was involved in the composition of the genera, but also the Rhythm and their mEter and certain forms of speech. He funds his observations on the place of Plutarch quoted above, where the Spondaeus is mentioned, which he interpreted as some sort of metric foot, not being aware of the other meaning of this word explained by Aristides, and from another passage a little further on from the previous one where he mentions the Peon and the Trohaeus in relation to the Enharmonic of Olympus, not realising that there Plutarch (or rather Aristoxenus) does not mention the Enharmonic of Olympus in abstract, but he talks about those Enharmonic Songs which he was the first to compose, mentioning not only their Harmony and their intervals, but also the Rhythm and the beat under which they where sung and played, and also to their Tone. However, from this one cannot deduce that the genera had particular Rhythms and Meters. As to what he says at chapter 80 against the Chromatists, who maintain that we can use any sort of intervals however extravagant to express better the concepts, in imitation of the common speech which uses very different intervals, I agree with him, because it is true that one hears [-<f.58r>-] few different intervals in the cadence of the spoken word, as perhaps I shall explain more clearly, and even if they are heard as very distinct and unusual, the same argument is not valid in the context of the singing voice, which sometimes can avail itself of some unusual and harsh interval to express some particular meaning, nevertheless it has to use easy and sweet intervals for the most part. And when those unusual intervals are used, such as those which are used frequently in those divisions of the ancient species, one must move stepwise, because in the end, when the ear gets used to it and to its ways and it is not <repelled> by them, not only they will not displease, but they shall produce much pleasure. However, one shall not jump now to these now to those as one can see them leap randomly, or 'from pole to branch', as we say. Therefore, I believe that it is appropriate to take the middle road between the extremes of Zarlino and of those Chromatists whom he attacks. We must not allow him the argument that he puts forward against the two genera, namely, that, if they contained anything good, at least one of them would have been restored, after so many years since music has been used after they were abandoned and after the efforts of so many who have worked on them. In fact, there is another stronger argument that gose aganist him, namely, that these genera could not be restored without the help of the good authors which not only were not read at the time of Zarlino, but lay buried [-<f.58v>-] in libraries for the most part even nowadays.

Moreover, years were needed to reduce the arts from their origins to their perfections, since, according to the Varro's account, as many were needed for them to be born, grow and achieve perfection in ancient Greece. Instead, one can say that in our society music has been re-born only for two hundred years, hence one cannot believe that we can achieve in a shorter time what the ancient managed to achieve in a longer time, who, perhaps did not have many of the obstacles which are encountered today. Moreover, it is perhaps easier to construct a building anew and from scratch than to reduce one or more old half ruined buildings into a single perfect Palace. Now, let us see what sort of compositions and pieces of music are suited to these genera and their names.

[Where one Genus should be preferred to the other and what should be their name chapter 39 in marg.]

Firstly, I hold as infallible that the Chromatic Genus is not very well suited to polyphonic compositions, either vocal or Instrumental, and even the Enharmonic even less. The reason of this is obvious, since the progress of all the parts with large intervals cannot produce a good effect. However, I do not say at all that it could not be used for a few bars to produce some variety, but it should not be used for entire compositions. Therefore, their appropriate application will be in compositions for solo voice which sings in Recitative style, or in any other. In this way, the composition will please admirably, especially if another Instrumental part will present the same melody by way of Fugue or Imitation. Now, we have a question, namely, if a composition for a single voice

[<f.59r>-] On certain varieties of Melody

which suite more a genus

than another one chapter 39

The entire difference which the three genera have between each other consists in the fact that not all the ornaments and melodic passages which are suited to one can be applied conveniently to the other one. For instance, *passaggi* seem to be suited only to the Diatonic and that they are its specific ornament, because this sort of melodic feature is not suited to intervals that are either too large or too small, but to those that are of middle size and natural, and it requires a certain fluidity that is not found in the progress of the other Genera, and even less in the Enharmonic than in the Chromatic. It appears that *accenti* and sliding passages [*strascini*] which have a very tender and delicate character (qualities very specific of this genus) suit the latter of those perfectly. The Enharmonic, instead, which has a simpler and drier character, displaying a certain ancient austerity, does not require either of the above effects, although some light *accento* adopted by the ditone or by some larger interval is not unsuited to it, and also the occasional slide in languid and relaxed matters, as when one sings of topics related to love or sadness, because these are always unsuitable to grave and manly matters. When these ornaments are used in the Enharmonic, they must occur within the notes of the dense, as one would exceed the genus if one went beyond these notes. [<f.59v>-] However, this cannot be done if one wants to use the simple genus [*signum*] [*signum*]. However, trills are very specific of this genus and very appropriate and convenient to it, because it appears that they are commonly produced by lowering and raising the voice by the interval of an Enharmonic diesis. For this reason, their specific place is in the Dense, and especially in the middle note; and since this is the cadential note of the Lydian modes, trills appear to be eminently apt to this genus. Also, it appears that one should make some distinction with regard the tempo and the Rhythm, and that swifter tempi and movements are more suited to the Diatonic and that its ordinary notes should be these [*MvMb*], and these in the cadences [*Sv*]. A considerably slower and calmer sort of notes appear to be suited to the chromatic, for instance, a third slower, although it seems that its specific notes might be these [*MvSv*], and these in the cadences, but everything can be adapted with the length of the bar. It seems that the Enharmonic may be allowed to be even more slow, namely, twice as slow which goes [*SvBv*] [*towards the Chromatic*], although these notes are assigned to it comfortably, and these, as its cadences, namely, [*Lvs*] [*Lvd*]. [*Nor this would be done without reasonable proportion and conformity of the Rhythm with their Harmony.*]

All this considered, not only the trills (which are always performed at top speed) but also all the other graces and accents which are sung or played appear to require greater speed than they do in the other two genera, not only so that they may attract less attention to themselves and the genus might appear more simple and pure, but also because this is proportionate to its Harmony. In fact, since its Harmony is composed of very small and very large intervals, thus it seems appropriate [<f.60r>-] that Rhythm should embrace

very swift and very slow moments. <aliqua verba omisa sunt>

[-<f.61r>-] than the pure Chromatic or Enharmonic genus sings, and with the composition of several Instrumental voices in the Diatonic genus it can and must be called Chromatic or Enharmonic absolutely. I would answer yes, because the Names derive from its most fundamental part, which is certainly the voice part rather the Instrumental part. Moreover, one can gather that the ancient were of the same opinion, as from this passage taken from Plutarch, which I want to insert in its entirety, since it is very important: [hoti de hoi]

This is its translation:

“As to the fact that the ancients were aware of the use of the Trite (C sol fa ut) in the Spondaic manner or style, can be known from the fact that it was used as an actual sound. In fact, they would not have used it in consonance with the Parhypate if they did not know its use. However, it is evident that the gracefulness which is derived to the Spondaic Style from exceeding the Trite was what gave them the inspiration to leap moving their melody to the Paranete (D la sol re). The same reason stands in the case of the Nete (E la mi) because [-<f.61v>-] they make use of it in the consonant combination with the Paraneete [[(creating the consonance of a fourth with the Mese (a la mi re) as it is found from e la mi to a la mi re)]. However, as to singing, it did not appear to them to be suited to the Spondaic style. Many used not only these, but also the Nete Synemmenon (D la sol re) [[which is the same [[or a note in unison add. supra lin.]] with the Paranete Diezeugmenon]] in this form. In fact, in singing and playing, they used it as a dissonance with the Paramese (C sol fa ut) [[which is the same as the Trite Diezeugmenon]] and with the Paramese ([sqb] mi) [at the time the thirds had become dissonant corr. supra lin.] and with the Lichanos (G sol re ut). However, they would have used it in singing not without embarrassment, since [[this would have been done against common practice]] this was not practised in that place.” I wanted to report this passage as it stands, firstly, because in such a small passage there are many both in the Greek text and in the Latin translation, and, secondly, because one can gather many important details from it. In the first place, one learns that they were freer in the instrumental sound than in the sung voice in those very ancient times when the Enharmonic was used. In fact, they played certain notes on the Instrument which were left aside in the voice part; secondly, that in that sort of Enharmonic, which was not ordered as it was later one, they leaped by a minor third from the [sqb] mi to the D la sol re; thirdly, that the grace and majesty of the enharmonic derives from leaping (by third) and not from those small intervals which provide only its delicate character; fourth, that to use two notes in a consonant way means to play them together when they were consonant, and to play them as a dissonance meant to play them one after the other, whether they be consonant or dissonant. In fact, since there is a fifth from G sol re ut to D la sol re, there is no other way [-<f.63r>-] to play them as a dissonance; fifth, therefore one learns that the ancients played few notes together when they sang and played the lyre, namely, two notes at the mose, which, together with the sung line, added up to three sounds. Therefore, it is necessary that their performances, at least those of that sort, were similar to ours and that they did not play the same melody on the instrument as the one sung by the voice, as some believed; sixth, one can observe the exquisite diligence and modesty of those most ancient melodies, in which they abstained deliberately from using several voices to maintain the ancient tradition and that graceful simplicity, rather than producing performances fuller in sound. However, see on this matter what Plutarch discusses on this subject a little further on, where he, or rather Aristoxenus, says [[among other things]] that even in his time the Chromatic was used in Tragedies, although the Cithara, which was invented many centuries before, had used it,

and that the Chromatic, in as much as it had been used by men, was more ancient than the Enharmonic, but as to its nature itself they were both as old as each other. He also says that Aeschylus, the very ancient Tragic Poet a few of whose Tragedies are still extant, and the poet Phrynichus abstained from it deliberately and that the poet Pancrates abstained from it as well, as someone who imitated the style which was considered ancient in his time (namely of Aristoxenus) of his own accord, such as the style of Pindar, Simonides and similar poets. He also tells of others who abstained from the Chromatic, from exiting the Tones, from using several notes and different types of Harmonies, Rhythms, modulations and expressions deliberately, although they had knowledge of them, and that the ones who belonged to Dorion's school did not use the style of Antigenides, nor the followers of the latter the style of the former. Equally, the Citharoedi avoided Timotheus' style. He also says that the most ancient held the variety of rhythm in the highest regard, and that they surpassed his contemporaries in the variety of the tempi and of the movements, since his contemporaries were more fond of the variety of the [-<f.63v>-] Melos, since I believe that one should read [philomeleis] instead [philomatheis], a reading that provides no sense in this respect. Plutarch also provides us with many other details, from which judicious readers can gather easily how music-making was varied and flourishing in those days.

[That a part may use a genus and another one a different one in compositions for several voices and to which topic each genera is suited chapter 40 in marg.]

From this passage, and from other considerations, I am drawn easily to believe that it would produce a very good effect to assign a genus to one voice and another one to another one, as, for instance, if we assigned the Enharmonic to the Bass, the Chromatic to the Tenor and the Diatonic to the Soprano in a composition for three voices, with this warning, that the slower and more comfortable movements and tempi suit the Enharmonic genus, the moderately fast ones suit the Chromatic, and the fastest of all suit the Diatonic. Therefore, such a piece would sound very well, because the faster tempi are more suited to the highest parts and the slowest to the lowest parts. A very good result would be produced as well if one assigns a melody composed of the three genera mixed together to the Soprano, a melody based on the Chromatic mixed with the Diatonic to the Tenor and the simple Diatonic to the Bass. Also, note that each genus is capable of different and contrary affects, since the Chromatic is not less suited to cheerful situations but also to sad ones, as some believe, as well as the Diatonic. However, the Diatonic is not similar to the Chromatic, as the former expresses a virile and magnificent ethos, and for this reason the ancients avoided the Chromatic in the Tragedy. However, in order to say something regarding the current use, the Enharmonic would be eminently suitable in the immaculate sacrifice of us Christians, if some beautiful voice is made to sing it in a short but heartfelt and graceful motet accompanied by the organ at the moment of the Consecration, as certainly this would have great power to elevate the mind to celestial meditation and to fill the hearts of those in the proximity with celestial and divine jubilation. In short, one would be able to adopt it, should one decide [-<f.64r>-] to sing a Hymn or some Praise to God or to the Saints in Latin or Italian verses, as well as in a section of a short Heroic poem, if one wanted to sing it or recite it by a schola cantorum accompanied by a harp or a few string instruments in an Academy or in any other formal meeting, as I said in my Musical Discourses that it would be suitable in some part of a Madrigal of serious style which contained the praises of some virtue or of some virtuous actions, rather than these empty words about love which our contemporary musicians cannot leave alone. To sum up, the Enharmonic is suited to some serious subject with the

accompaniment of few voices and notes and where the words have profound and sublime meaning and require a very exact expression. The Chromatic belongs particularly to tender and emotional subjects, such as amorous laments, especially when sung by women, and to express the placid and cheerful joy which occurs, for instance, in banquets, at weddings and other similar occasions. It is also admirably effective to move the tears and to produce pain. Therefore, although it is not suitable in any way in the ordinary parts of the tragedy, nevertheless, it could be admitted in the part of that Aristotle calls *Commos* and would be called *Deploration* in our language. Here, one of the main actors together with those of the Chorus laments and deplores with sad words some calamity or misfortune, especially when Women intervene, as I discussed in my treatise on Music for the Stage. Equally, it might be allowed in those Choruses that contain tearful sentiments. [-<f.64v>-] However, it would not be appropriate to use it in sacred feast days, either during the Holy Week or at other times, because its character is too soft and effeminate and it would jar too strongly with the ancient Ecclesiastical discipline and to the rules of its Canons. I wanted to warn you against this, to avoid that this should happen because of the temerity and carelessness of some Master of the Chapel, namely, now that so many traditions are born again or are resurrected, that something worthy of disapproval and reformation were introduced. In fact, in every age one has to pay very close attention to modesty and Christian gravitas, although one may use some sad and devout melody without any mixture of modes and a too tender and soft a style which tends more towards lasciviousness than interval and virtuous compunction.

[What Vicentino believed as to the use of the three Genera and of many mistakes which are found in his books chapter 41 in marg.]

From what has been said so far everyone will be able to know how true is what the Vicentino says without providing any evidence, either secure or circumstantial, namely that the Diatonic was used in public festivals and in public venues to be heard by the ears of the populace, while the Chromatic and the Enharmonic were employed for the private entertainment of the Nobility and were reserved for the discerning ears to praise great personalities, Heroes, and so on. All of these are pipe-dreams and figments of his imaginations, and these statements, as he presents them, are not supported by any other writer. However, to point out some of his mistakes so that everyone may see how far he departed from the good path in his desire to rediscover these [-<f.65r>-] genera will do nothing but good as a warning of the young and of those who are inexperienced. Firstly, he explains the Uncompounded interval in a silly way and against the intention of Boethius and of all the ancient writers. He believes that Boethius understands as species of the Chromatic Genus all the intervals added by the Chromatic genus to the Diatonic fourth. Thus, he calls Chromatic Species all the intervals that have one of the notes marked by an accidental sign, thus:

[Doni, *Compendium*, 65r]

He interprets the Enharmonic species in the same way. Moreover, he does not interpret the different division of the Tetrachords in each genus as species, but the same intervals transposed in different ways, such as the species of fifth and of fourth, and thus he confuses the species of the genera with the species [[and forms add. supra lin.]] of the consonances. Also, since he believes that the word Chromatic means ‘a different step from the Chromatic’, hence he orders the species of the consonances the wrong way

round, as, for instance, he places the one which is the first of the Diatonic as the third of the Chromatic. In short, he orders the three species of Chromatic fourth in the opposite way to the Diatonic, because, since the first Diatonic species, according to modern writers, has a Tone, a Semitone and a tone, in the first Chromatic one he places first a larger Semitone, then a Semitone and then a smaller semitone. He maintains the same order in the Enharmonic fourths and fifths, namely, he places their larger interval where the small one is, namely the Semitone in the Diatonic. [signum] [[signum] It follows from this that he distinguishes the mixed genera from the genera, the species from the species, and the genera from the species, which is something which does not conform very well with the rules of Logic.

He places five intervals and six notes in the four species of the fifth to avoid the tone of the Disjunction, which he divides, and, consequently, he composes the Chromatic octaves of nine notes and the Enharmonic fifths of seven notes and six intervals.

He admits any sort extravagant of intervals [-<f.65v>-] in the Chromatic and in the Enharmonic [[except for the Tones and the major fourth]], which is what Zarlino criticises him so much for, although he excludes all the tones from both of them and one of the thirds, as I said above. He says that the fifth would be reduced if the thirds were added, and because of this he appears to be a very good expert of harmony.

As to certain distinctions that he makes between natural and accidental Tones and semitones and natural and accidental fourths and fifths, and with regard to his placing a smallest third, namely reduced by a smaller diesis, and a more than larger third, namely augmented by a comma, and with regard to call the third, fourth and fifth close or closest, when they are reduced or enlarged by a Comma or Two, these are matters which perhaps are not unsuited to that bastardised music of his, but they are full of confusion and impropriety.

Equally, as to the fact that he uses certain signs which are of little significance and clarity, such as the b [signum] to demonstrate the lowering by a small diesis, and as to marking the diesis thus, when it is intended to be in the first part of the note

[Doni, Compendium, 65v, 1],

thus in the second part

[Doni, Compendium, 65v, 2],

and thus throughout the whole note

[Doni, Compendium, 65v, 3],

these are matters which have no great importance in substance, but they have not been understood well.

Then, when he says that the smaller Semitone sounds cheerful in ascending and sad in descending, contrary to the larger Semitone, which he regards as sad in ascending and cheerful in descending, I do not know how musicians of good judgment will let this pass. As to the mistakes which he incurred because of lack of knowledge, they can be easily pardoned, as, for instance, his belief that the ancients divided the fourth according to the

three genera, because it was very fashionable to believe it, as well as the belief that the other consonances [-<f.66r>-] were derived from it, because Pontio said it. Equally, the fact that he ascribed the effects that music produced in antiquity to the fact that it was new and not frequently used, and his opinion that those effects are not produced nowadays because of its being so widespread, these matters can be easily forgiven, as well as the attribution the disposition of the entire perfect System to Pythagoras, the invention of the Proslambanomenos to Ptolemy and calling Giovanni de Muris a very eminent philosopher.

As to whether it is true that this man invented all the notes, namely, [MXvd] [Lvd] [Bv] [Sv] and the others up to the Semicroma, and that he derived them from the [sqb] and the b, I refer to those who are more familiar than I am with the Margarita, the Recaneto and the Scintille, and similar authors of that ilk. I omit many other improprieties and inaccuracies to avoid criticising him too strictly, because everyone will be able to gather from what has been said what good effect may produce his musical writings.

Nevertheless, in order not to detract from him his due, he deserves much praise for having attempted such a difficult enterprise, to have offered many the chance to improve what he had started and for having made some beautiful observations, such as the fact that the minor third, when it rises slowly expresses the feeling of a certain tiredness and sluggishness, that, when one moves from the minor sixth to the octave ascending by a Tone, the composition becomes melancholic and harsh, that two consecutive minor sixths produce a better effect descending than ascending, that, when one places an undivided octave under another divided octave with a third and a sixth, it is better that the third should be under the sixth, that, when one writes for several voices, the words can prove difficult to understand, that the downward and upward leaps provoke a change [-<f.66v>-] of accent in all the vowels except the u, that it is pleasing to hear the parts enter one after the other with the same timings, movements and with the same sequence of longer and shorter rests, and other observations which are disseminated in his work. From here one can gather that he was rather lacking in knowledge than intellect and that he had read only a few other authors besides Boethius, from which one can derive many useful pieces of information as far as Theory is concerned, but almost nothing with regard to practice.

[Summary of some other topics contained in the work of the Genera and Modes chapter 42 in marg.]

In that entire book I have discussed many other matters which, since they belong more to History than Theory and practice, which I have aimed to improve, if it is possible, since I have no time to extend myself, it will be sufficient just to hint at them here. As to the invention of the two genera, I show how Timotheus was the creator of the Chromatic and that he was not the one from Miletus (rather than from Melos or Milos, as Gallilei says) who moved Alexander the Great to take arms, and that Suda's text is not corrupted as Zarlino suspected. I also show how he discovered this genus and how it was practised after the Enharmonic, although it is later than that one, by nature. Equally, I illustrate how Olympus invented the Enharmonic by adducing the entire passage of Plutarch, which I translated, and by explaining it clearly. I explain how many where the Olympus celebrated in this profession, which is a matter no less complex than the one concerning Timotheus, and I discuss the notes added by him. On this matter, I review which is the most probable opinion, since the opinions of the commentators differ on this point, [-<f.67r>-] and how the Chromatic began to become much more prominent at the time of Aristoxenus and of Alexander the Great, when the Greeks abandoned themselves very much to the Asiatic delights and lasciviousness.

As to the duration of these genera, I provide many strong conjectures that the Enharmonic

was abandoned at the beginning of the Greek monarchy, while the Chromatic disappeared at the end of the Roman Empire, by explaining that passage of Plutarch where he shows that even the theorists of his age believed that the Enharmonic was an invention of the learned writers and that it had never been used in practice and that the Enharmonic Diesis could not be sung or played, with the reason that he takes from some music theorist against their great ignorance. I also demonstrate how these genera were lost not only because of the disasters of the world, but also because the honours and the prizes which were conferred upon musicians, and how, according to an account by Damascius reported by Photius, a certain Asclepiodotus, an ingenious philosopher and very expert in musical matters who lived under the Emperor Anthemius, managed to restore the Enharmonic, but with little success, despite availing himself of 220 magades or bridges or as many divisions of the strings, which is the number which appears in the Greek text, albeit the translator places the amount of them at just twenty-two. Then, I observe some common features and similarities that the three genera have with human nature and with other matters, which are not far-fetched, as some contemporary authors produce. After I have related in order and according to various points all the divisions and species of the [-<f.67v>-] three genera, expressing my opinion as to the most useful and best ones, I move on to describe the manner in which Ptolemy produces his Division, which Salinas explained so felicitously, and I investigate whether it is possible to find some new ones, showing that it is possible, adding some of the ones which I invented on top of those. However, I do not want to compare those to the ones of the ancients, as indeed they left to be added in this respect. Then I discuss the famous controversy which exists between Zarlino and Gallilei as to whether the Syntonic Diatonic or another species is sung nowadays and if only this has to be called natural. Then, I discuss the mixtures devised by Ptolemy in the species which he mentions and of some others which could be decided and put into practice in the Instrument. These will be dealt with in the second book. I will discuss Salinas verdict on the Didymus' and Ptolemy's Divisions. It remains for us to say something on the way to practise this genus and to tune their intervals correctly, which to some will appear as the greatest difficulty. As to the Chromatic, one will be able to practise it with a medium amount of application, because the expert singers of our age can tune its intervals (although not [[mostly]] with fast notes). However, the Enharmonic is truly extremely difficult, although some modern writer strives to show that it is no harder than the Chromatic with this beautiful argument. <aliqua verba omitta sunt>

[-<f.68r>-] [signum] As to the Melopeia, one may doubt whether in a Genus, by employing some passaggio, one can touch on the notes of another genus, but not in the extreme notes of the passaggi, but in the middle ones, as here below.

Personally, I would reply that, since no law forces us to use a pure genus, thus in any given genus one is allowed to use also the notes and intervals of another one. However, should someone reply that in that case that genus shall not be pure, I will reply that in truth that melody will not belong to such a pure genus as it would be if those notes will not be intermingled in the passaggi. Nevertheless, it shall be pure and simple even if the notes of another mode are interposed, not only as belonging to a passaggio, but also are repeated notes and pronouncing on it some syllable. Should someone ask me what we should call the melody in the first case, I would say that its name is not very important, but that, in any case, it shall be better to name it absolutely after the genus on whose notes

the syllable which are essential to the melody are pronounced, rather than those on which the passaggi are pronounced. However, if one wanted to call it Chromatised or Enharmonic (albeit they are harsh-sounding words) he shall be able to do it. In fact, if we are wondering how it is probable that these genera were used in practice, I would reply that the notes belonging to another genus were used rendering it more or less pure according to the songs which were sung, and that in the most ancient times, [-<f.68v>-] when the Enharmonic was highly regarded, it was sung pure and neat in the sacred song of those ancient musicians such as Olympus, Terpander and other, to avoid corrupting and altering them, as they were observant, or rather, superstitious in this matter. However, I believe that, in other times and on other occasions, the singers used to sing any type of melody would have found it difficult to abstain from using any sort of interval, small and thick, in their passaggi, dividing, for instance the semitone mi fa into two parts even in the Diatonic and Chromatic melodies, and also the tone fa sol, which follows the two Diatonic semitones into two Semitones Chromatically, at least where the quality did not divide that thick and delicate type of melody. I believe that this is the meaning of that term certainly used by Roman musicians and remembered by Gellius, although normally it is interpreted as a kind of diminution in the Instruments or in fast movements which the French call fredors. I believe that this term expresses what the Greeks called [katapyknoseis], and perhaps also [katapyknomata]; and that he himself interprets it as such where he says that Nero, that madman, asked for a drink while he was singing, and apologising to the audience and saying “after he had taken a sip”. [-<f.69r>-] [signum] One may doubt if a melody composed of many adjacent semitones, for instance of twelve, and spanning an entire octave, as one can see in a Madrigal by Cipriano and in a Pavana and Gagliarda by Cornelio Schuyt, is Chromatic. Personally, albeit common opinion is different, I believe that that melody belongs to no particular genus, although it is closer to the Chromatic than to others, but that it is a mongrel melody, with no grace whatsoever and outside of any rule and reason. I believe that it cannot more pleasant than a painting made of a single colour without any difference of light and shadow, as I have seen some brought back from the West Indies. Equally, it a melody which progresses through six adjacent tones would not be a Diatonic, although it partakes more of this genus than of the others, nor a melody that progresses with a very large number of adjacent dieses could be Enharmonic, although it would be closer to this genus than to the others

[signum] where I placed this sign [signum] to signify the Enharmonic diesis, this sign [signum] to indicate the larger semitone, and this sign [signum] to signify the larger tone, which, placed under those notes or voices, denote the interval by which they are lowered, since it is the same thing to lower the G sol re ut and the D la sol re by a larger semitone and to rise the F fa ut and C sol fa ut by a smaller semitone.

Thus, it is the same to lower the F fa ut and the C sol fa ut by a diesis in the Enharmonic, as to rise the E la mi and the [sqb] mi by the same interval in the Enharmonic, although the G sol re ut and the D la sol re are lowered more often by a major tone in this genus, so that they may be in unison with the Diatonic D and C, [-<f.69v>-] as one can see that the Diatonic Parhypates and the Enharmonic Lichani are in the System. In this form no note or letter is repeated twice or any other one is excluded. Perhaps this will be better understood with the aid of lines.

[Doni, Compendium, 69v; text: Ottava Cromatica con tutte le otto lettere e corde, 8, Enarmonica, E, F, G, A, [sqb], c, d, e]