GAFFURIUS'S *PRACTICA MUSICA*: ORIGIN AND CONTENTS

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Recent studies of the life and works of Franchinus Gaffurius state that his *Practica Musicae*, consisting of four books, was written at Monticelli and Bergamo between 1481 and 1483, although the work was not published until 1496. There are two principal reasons for this belief, one of which is the fact that Gaffurius's biographer, Panteleone Meleguli, informs us that Gaffurius began the *Practica* at Monticelli. The other is based on a manuscript of the *Practica*, dated 1487, which was apparently a copy of an autograph manuscript of the *Practica* left at the Basilica of Santa Maria Maggiore in Bergamo. Gaffurius was chapel master at this church during 1483, but the following year he assumed the same position at the Cathedral in Milan. The 1487 manuscript copy of his *Practica* is the only handwritten copy that is still extant.

Examination of the manuscript supports Meleguli's statement concerning the inception of *Practica Musicae*, but it does not uphold the modern view that it was completed in 1483. In fact, it indicates quite clearly that some of the *Practica* was written at Milan, and that the four books of the printed edition did not originally form a single treatise but were only later to assume this form.

The manuscript copy of 1487 was made by a Carmelite friar, Alexander Assolari. On fol. 106r he wrote: *Hoc opusculum scriptum et notatum fuit per Fratrem Alexandrum de Assolariis ... in conventu nostro bergamico ... 1487.* The manuscript begins with Book I of *Practica Musicae*, which ends in this way on fol. 20r: *Franchini Gaffuri laudensis musices*

* Editor's note: A translation (and transcription) of the *Practica Musicae* by Dr. Miller is in press as *Musicological Studies and Documents* 20.

1 Luigi Cremascoli, "Note Storiche sulla Vita di F. Gaffurio", in *Franchino Gaffurio* (Lodi, 1951), 89; Claudio Sartori, "Gaffurio", in *MGG IV*, 1237; *Franchino Gaffurio Theorica Musicae*, ed. by Gaetano Cesari (Rome, 1934), 25.

2 Meleguli’s biographical sketch, which was probably inspired by Gaffurius, appears at the end of his *De harmonia musicorum instrumentorum opus*, published in 1518 at Milan.

3 Cremascoli, *op. cit.*, 69.

4 Ibid. It is in the Biblioteca Civica di Bergamo, whose director kindly sent me a microfilm of the manuscript.

5 Meleguli was careful to say that at Monticelli Gaffurius *practicam scribere accept.*
professoris liber primus musices practicabilis explicit foeliciter. Immediately following on the same folio is a discussion of the division of a monochord which does not appear in the Practica. The remainder of the manuscript, which is completed on fol. 108, includes a treatise by Frater Alexander and Libellus Cantus Menurabilis by Johannes de Muris, but it does not contain any more text or music of the Practica.

Not only are Books II, III, and IV of Practica Musicae missing from this manuscript, but a comparison of its version of Book I with the printed edition of 1496 reveals significant differences. Although both have similar content and follow the same arrangement of chapters, the textual style of the manuscript version recalls a typical late medieval treatise, while the printed edition reflects the humanistic qualities which Gaffurius later cultivated so assiduously at Milan. In the manuscript, authoritative writers cited include Boethius, Marchettus of Padua, Guido d'Arezzo, and Isidore of Seville. The latter is missing in the printed edition, but a host of new names appear, both ancient and modern. The citation in the printed Book I of Baccheus, Martinus Capella, Anselmi, Petrus Apponnensis, and Bryennius, indicates the author's broadening interests and his desire to study musical sources of all periods.

The manuscript copy also shows a relationship to Gaffurius's early life and works. In a discussion of intervals (fol. 2v), it mentions their treatment in vulgaris micrologo cantus plani ad paulum grecum sacerdotem laudensem virum siguidem moribus et litteris ornatisimum. Although a treatise by Gaffurius with this title is not mentioned by Cremascoli 7 in his list of works by that writer, it is found in a catalog of the musical library of Padre Martini under the heading: Micrologus vulgaris cantus plani F. Gaffori lauden. The work was dedicated to Paolo de Greci, a priest and member of a noble Lodi family. Since Gaffurius also dedicated (c. 1474) a manuscript to him entitled Tractatus Brevis Cantus Plani, it is most likely that these manuscripts are the same. Neither Paolo de Greci nor the manuscripts are mentioned in the printed edition of 1496.

The most significant difference between the versions, however, and one which makes Book I of the printed edition truly valuable, is Gaffurius's treatment of the relationship and interpenetration of the Gregorian and Ambrosian liturgies. None of the textual and musical material relevant to the Ambrosian rite (which will be discussed later), is found in the manuscript, which does not appear in the Practica. The difference resulting from the absence of this material in the manuscript, combined with the other changes in content and the absence of Books II, III, and IV, justify the statement that the manuscript copy of 1487 is only a prototype of Book I of the printed edition, and that Gaffurius made extensive changes and additions in Book I after coming to Milan.

Cesari 10 points out that in Theorica opus, published in 1480, the Practica was already mentioned in several places. This agrees with Meligul's statement regarding the inception of the work, since Gaffurius was at Monticelli between 1480 and 1483 11. Three citations in Theorica relate to the Practica or at least to practical music. In Book V, ch. 6, after treating hexachords and mutation, Gaffurius states that many things have not been included since they will be treated in greater detail in other books on the practise of musical discipline 12. In Book V, ch. 8, on modes, he also speaks of other books which will be called practice music. Later on in the same chapter, still discussing modes, he again mentions a treatise that will be called practice 14.

These comments have two points in common: they relate to musical material found only in Book I; they use the future tense only, and do not specify where the material will be found. In contrast to this are analogous places in the enlarged edition of Theorica, the Theorica Musicae of 1492. In Book V, ch. 7 of this latter work, in a treatment of musical fundamentals, Gaffurius remarks that these elements have been given more detailed treatment in Book I of Practica, which deals with cantus planus. And in ch. 8 he ends the Theorica by stating that the melodic formulas of the modes have been described more fully in Book I of his Practica. The lack of precision in references to practical music in the Theorica of 1480 has been supplanted by definite statements in the Theorica of 1492. Their comparison tends to support the theory that Practica Musicae was not originally an entity of four books, but that it developed from individual treatises.

The material on mensural notation which became Book II of Practica was probably begun about the same time as Book I, although lack of a manuscript copy such as exists for Book I makes this supposition rather

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11 Cremascoli, op. cit., 133.
12 ... in alis voluminibus du musice discipline pratica prolixius tractari contingent.
13 ... in alis voluminibus que prateice musice ascribuntur.
14 ... qui prateice ascribunt.
15 Ac de his multa in prima prateice qui cantibus planis ascriptus est: diffusius horum progressiones et formulas in prima praticae disposuimus.
conjectural. It is known, however, that a prototype for Book II existed many years before the 1496 imprint. In 1492 a Tractato vulgare del canto figurato by Francesco Caza was published in Milan. This treatise was written under Gaffurius's direction by his pupil Caza, and is actually a vernacular condensation of Book II of Practica. Gaffurius wrote the letter of dedication (in Latin, of course), remarking that the treatise came from a compendium of mensural notation he had written years before. Caza was more explicit and stated that he had followed the teaching and order of the second part of his teacher's work on practical music.

A comparison of Book II of Practica and Caza's Tractato vulgare reveals the accuracy of the latter's comments. The 15 chapters of Practica become 13 in the Tractato; otherwise chapter headings of both works are nearly identical. Textual material in the Tractato is similar to Book II of Practica but is shortened, and the Tractato does not contain any of the polyphonic examples in which Book II of Practica abounds. It is clear from Gaffurius's statement that a prototype for Book II of Practica existed many years before the printed edition. There seems to be more likelihood, however, that it originated as an independent treatise rather than as Book II of Practica. Gaffurius called it a compendium, and Caza relates it to Practica Musicae. But the latter was writing in 1492, at a time when the final form of Practica Musicae must have been very similar to its imprint in 1496.

Although a manuscript of Book III on counterpoint does not appear to exist, Book IV on proportions was originally written by Gaffurius as an independent treatise. Between 1481 and 1483 he wrote Proportioni practicabili and dedicated it to the patrician Corrado Stanga of Cremona. In the dedicatory letter to Stanga he states that he decided to treat the problem of proportions, a subject which nearly all highly skilled musicians left untouched. He hoped that their less lucid dicta would be made clearer through his more expeditious and thorough study, which he illustrated with musical examples of his own compositions. No reference is made to Proportioni practicabili as being a part of another work, although it later became Book IV of Practica, but Gaffurius expressed the hope that it would be readily helpful to perceptive youths, and would not be considered a useless display of his ingenuity.

From the evidence shown it appears that the printed version of Practica Musicae differed considerably from its original state. Instead of being a homogeneous work representing varied aspects of practical music, it appears to have been a collection of treatises which eventually formed a single unit. It is known that the Practica Musicae manuscript was begun c. 1481 and Proportioni practicabili was written between 1481 and 1483. The latter became Book IV of the 1496 edition of Practica, while the Practica manuscript underwent much revision before assuming its final form as Book I of the printed edition. Much of this change in the manuscript could only have taken place after Gaffurius had established himself in Milan. Although the date of inception of Books II and III is not known, the Italian condensation of Book II, printed in 1492, indicates that a Latin prototype existed some years before. Since Gaffurius referred to this Latin version only as a compendium of mensural notation, it is doubtful that he had originally conceived it as a part of Practica Musicae.

Practica Musicae has been called part of a Trilogia Gaffuriana, the other two parts being Theorica Musicae (1492), and De Harmonia Musicae Instrumentorum Opus (1518). Taken together the three works constitute "a complete theoretical and practical course in composition." Gaffurius must have considered these three printed treatises in this way. As a frontispiece of his Angelicum ac divinum opus (1508) and De Harmonia, a woodcut represents Gaffurius teaching in the cathedral. The border of the woodcut bears a short text linking the three treatises. In addition, the treatises frequently refer to each other. For example, in Practica Gaffurius often mentions Theorica Musicae, and in one place tells the reader that if he should become fatigued in reading his book on theory, then the Practica, like acidulous food, will refresh and restore his digestion. The other member of the Trilogia, De Harmonia, is cited more frequently in Practica than any other single entry.

The 1496 edition of Practica reflects to a considerable degree the impact of humanistic thought on Gaffurius. During his thirty-eight years of activity in Milan he developed a fine library of literary and musical works. He was not only concerned with the content of books but was also a true bibliophile who derived aesthetic satisfaction from beauty of design and

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22 Proportionum difficulatatem, (id quod &e omnes artis musicae periti testimini inuentum requirunt) ingeniolum et virtutum arduam praebet.
23 id minus lucide eorum dicta aptius explorata longaque expeditiora domesticis quibusdam exemplis lucubratione mea facilius redderentur.
24 Luigi Salamina, "La Trilogia Gaffuriana", in Franchino Gaffurio (Lodi, 1951), 197.
25 Ibid.
26 Book IV, ch. 15.
format. His well known remark in *De Harmonia* (1512) that he had Greek musical treatises translated into Latin is also applicable to the *Practica* of 1496. In 1494 Francesco Burana of Verona had translated for him several Greek musical works which he used in the *Practica*.

Gaffurius was not the kind of humanist who appreciated only ancient culture and who scorned medieval concepts. He displayed a remarkable catholicity of taste and discernment in his studies, and this quality is reflected in the writers he cited in *Practica*. The following list of authors and references to their works which are contained in his *Practica* indicate his wide acquaintance with writings of ancient, early Christian, medieval, and Renaissance authors.

Leone Battista Alberti De Re Adificatore
Girgio Anselmi Musica (1434)
Aristides Quisquilianus De Musica (trans. for Gaffurius by Francesco Burana, 1494)
Arioste Categories; Posterior Analytics; Problems (trans. by Petrus Apollinis)
St. Augustine De Musica
Austonius Grifus ternarii
Bacchius Introductorio Artis Musicae (compendium, trans. c. 1474)
Venerable Bede De Arte Metrica
Boethius De Musica
Brevis musice tractatus (anon. Greek treatise trans. for Gaffurius by Francesco Burana, 1494)
Manuel Bryennius Harmonica (trans. c. 1494)
Martianus Capella De Musica
Cicero Tusculan Disputations
Diodores De Arbis Grammatica
Esclid Elements (trans. by Johannes Campanus)
Franco Ars Cantus Mensurabilis
Gaffurius De Harmonia Musicorum Instrumentorum Opus; Theoria
St. Gregory Moralía
Guido d'Arezzo De Ignoto Cantu; Micrologus; Regulae Rhythmicae
Johnannes de Muris Libelli cantus mensurabilis; Musica Practica (team *Ars nova musicae*)
Marchetus of Padua Lucidorium
Giovanni Marliani De Algebra
Persius Satires
Plato Laus Timaeus
Pliny Natural History
Prosdocimus de Beldemandis Tractatu Practice de Musica Mensurabili ad modum Isicorum

In considering the above list it is important to understand its relationship to the text of Gaffurius's *Practica*. It does not appear to wish to include an imposing array of names merely to dazzle the reader with his erudition, but he uses them in connection with his avowed purpose in writing *Practica Musicae*. In its preface he tells us that the book was written not only for the advancement of the studious but also to present in a single work an orderly compilation of material assembled from the writings of various authors. Thus in each of the four books he uses a historical approach in dealing with the subject matter, and introduces the writers of the preceding list as they are relevant to the subject under discussion. In following this method he sometimes presents material which is unique among theory books of his time, as for example, the Greek rhythmical signs taken from an anonymous treatise, and the unusual note shapes from Anselmi's treatise, both of which are found in Book II of *Practica*. Since the majority of the authors named above were quoted by Gaffurius in relation to specific subjects, references to them will be made in the following discussion of each book of *Practica Musicae*.

Book I consists of 15 chapters, the first 7 of which are devoted to elements of music, and the succeeding 8 to the 8 Tones, a term Gaffurius uses much more frequently than "modes". Both parts of Book I are profusely illustrated with plainsong examples.

Although Gaffurius's presentation of this material is basically conventional, his comments about two related aspects have particular significance. These concern the performance of plainsong, especially in relation to rhythm, and the music for the Ambrosian liturgy as practised in Milan.

It is apparent that Gaffurius was well aware of the conflicting performance practises of plainsong in his day, and also of the opposing statements made concerning it by various music theorists. Tinctoris, for example, in discussing notes of indefinite value, cites the opening phrase of two plainsong Introits, *Gaudeamus omnes sancte parens*, saying that "such notes are sometimes measured, sometimes unmeasured, sometimes in perfect mensuration, sometimes in imperfect mensuration, according to the rite of churches and the wishes of singers". In his *Diffinitionum* he states that
cantus simplex planus "is composed of notes of indefinite value, as in Gregorian chant" 20. In a similar comment on plainsong rhythm the Dutch humanist Erasmus of Rotterdam remarks that in cases where notes of unequal duration occur in chant it is done arbitrarily and not according to the length of the syllables in a text. He advocated the latter practice for the performance of Ambrosian hymns, stating that in his opinion they were undoubtedly sung metrically in Ambrose's time. 30.

On the other hand, among the many theorists who believed that all plainsong should observe an even rhythm, Gaffurius was one of the most prominent. In addition to stating that chant should be sung in notes of equal value 31, he illustrates the principle in both polyphonic and monophonic examples. The polyphonic compositions 32 are two-voices pieces in which a plainsong tenor is written in various combinations of puncta and virgae, and an upper voice demonstrates either contrapunctus planus or fractus. In both types, plain and florid, each note of the plainsong tenor is equal to a semibreve value in the upper part.

In showing examples of simple and compound neumes Gaffurius discusses diamond-shaped neumes, or puncta inclinata, which he calls middle notes 33. These are illustrated by a dimanum consisting of a virga and three descending puncta inclinata. Such middle notes should be sung in the same way and at the same rate of speed as other notes, although he acknowledges that some singers make them twice as fast, a practice which, however, is the arbitrary decision of a singer and done without good reason. He further observes that certain countries, especially France, use mensural values as longs, breves, and semibreves to write and sing the cantus simplex planus 34, as well as some prosas and hymns 34. It is significant that in 1558 Zarlino makes very similar statements when he writes that cantus simplex planus in unum Deum, which they call the Credo cardinale 34. The music of this Creed dates from the fifteenth century and received its name because it was used on more important feast days 34.

It is also apparent that Gaffurius considered the rhythmic alterations made in some plainsongs to be the fault of singers and to have no historical validity. His own experience as a singer in the cathedral of Lodi and later for thirty-eight years as magister phonascus at the Milan Cathedral 37 must have given him ample opportunity for first-hand experience in this regard.

He comments that many singers want to control the manner of enunciation as well as the rhythm of chant 38, and reluctantly repeats Guido's well known dictum that "of all men in our own time singers are the most fatuous" 39. On the other hand, although not approving changes in rhythm, he allows a variation in tempi, for he says that ferial and lesser psalm-tones are sung faster, but sollemnis Tones move more slowly 40.

Chapter 8-15 of Book I, devoted to a study of the eight Tones, contain plainsong examples of each Tone. Examination of these melodies shows that Gaffurius had a definite method of presentation in mind, and in fact has combined elements of the Ambrosian and Gregorian rites, a procedure which undoubtedly reflects the performance practices current during his tenure at the Milan cathedral.

The beginning, ambitus, and final of each Tone is shown by means of an Ambrosian antiphon, a Gregorian psalm-tone 41 with several E u o u a e, and Gregorian melodies for Gloria patri et filio et spiritui sancto. The latter are derived from the fixed melodies of verses belonging to Responsories sung at Matins 42. The antiphons, which are the typical short chants associated with office psalmody, have the following texts:

**Tone 1:** *Aime pater Ambrosi, nostras preces audi, Christe exaudi nos.*

**Tone 2:** *In Hono rem apostolorum fabricavit Basianus Domino templum numinum.*

**Tone 3:** *Baptizat Augustinum sacerdos Ambrosius ambo statim modulantur et Deum laudamus.*

**Tone 4:** *Marcellus sacerdos et Petrus exercitae martyres Christi intercedant pro nobis.*

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20 Notis incerti valoris simpliciter constatris, cuius modi est gregorianus, in Cousemaker, op. cit., IV, 179.


22 Practica Musicae, II, 2.

23 Exx. 30-33 in my edition.

24 It is significant that he discusses these notes, for they are a characteristic mark of Ambrosian plainsong notation. Cf. P. Raphael Molliton, *Die Nach-Tridentinische Choral-Reform zu Rom* (Leipzig, 1901), 101.


27 The article "Credo" in *MGG*, II, col. 1770.

28 Cremascoli, op. cit., 73.

29 I, 2.

30 III, 15.

31 I, 15.

32 Gaffurius's psalm-tones are very similar to those found in LU 113-117.

33 The same Gloria Patri text and melodies for the eight Tones are contained in AM 1228-1230. See also W. Apel, *Gregorian Chants* (London, 1958), p. 236, wherein there are several Responsory verses of Tone I which are the basis for the Gloria Patri of Tone I in *Practica Musicae*. 
It is evident that Gaffurius chose the antiphons with considerable care. Not only is each melody a perfect textbook example of the ambitus and final of the Tone it illustrates, but the collective texts have so many points in common that their selections could hardly have been accidental. They all relate to saints and martyrs who lived not later than A.D. 400, and most are connected in some way either to St. Ambrose or to Milan and its cathedral. It is as though the author wished to use truly representative Ambrosian examples in his presentation of Ambrosian and Gregorian practices.

The text of the first antiphon, an example of Tone I, very fittingly is a petition to St. Ambrose, the father of Milanese liturgy. According to Gaffurius, in the psalm tone which follows this antiphon Ambrosians use a solemn Tone for incipit and mediation; however, he does not give a musical example of this usage, but cites the Gregorian psalm tone.

The antiphon for Tone 2 relates to St. Bassian, a close friend of St. Ambrose and Bishop of nearby Lodi, who built the Church of the Apostles mentioned in the text. He was interred in the Church and was named patron saint of Lodi.

The famous legend of the origin of the Te Deum is the subject of the text for Tone 3. Although the chant is not a joint composition of St. Ambrose and St. Augustine, its author is still not known. That Gaffurius's antiphon is based on it is known by the fact that the opening notes of the Te Deum melody are found on the words Baptizat and te deum. Gaffurius remarks that, contrary to Gregorian practice, the E u o u a e of the Ambrosian psalm tone begins on b, just as in other authentic Tones, and in a more harmonious relationship to the final than c', the other dominant.

The text of the fourth antiphon for Tone 4 commemorates the martyrdom of the priest, St. Marcellinus, and the exorcist, St. Peter, who were prominent Christians at the beginning of the fourth century, and who are mentioned in the Canon of the Mass. Melodies of this Tone, according to Gaffurius, often are transposed a fourth higher, employ a B flat, and have a final on a. This usage seems to be related to the Ambrosian method of grouping Antiphons and psalm tones into four familia or series according to the finals d, e, f, g, or their transpositions, a, b, c', d'. Such transposed finals indicate a much higher range than that found in Gregorian melodies, and the use of these finals has been called "a most characteristic trait of Ambrosian chant."

One of the most popular saints in the Middle Ages, St. Blaise, Bishop of Sebaste in Armenia, is commemorated in the antiphon for Tone 5. Martyred in 316 during the reign of Licinius, the saint's intercession was thereupon petitioned for deliverance from physical ills, especially from diseases of the throat. The text of Gaffurius's antiphon, with its reference to malo guturis ['sic], is clearly based on the blessing given on the feast of St. Blaise: Per intercessionem S. Blasii liberet te Deus a male guteris et a quovis alio modo.

There are apparently two saints with the name Erasmus who could be the saint referred to in the text for Tone 6, although Gaffurius probably meant Bishop Erasmus of Syria, who came to Antioch during the persecution under Diocletian. He died near Gaeta, where a cathedral bearing his name (St. Erasmus or Elmo) was consecrated in 1106. It is possible that the inclusion of anthiphons to St. Erasmus of Syria and St. Blaise of Armenia is a reflection of Gaffurius's belief in the traditional connection of Ambrosian liturgy to the Eastern Church, a tradition confirmed by St. Augustine in his statement that in the Church of Milan "it was instituted that, after the manner of the Eastern Church, hymns and psalms should be sung."

St. Augustine is also a source of information about St. Gervase and St. Protase, brothers who suffered martyrdom in Milan in the second century, and who are the subjects of the antiphon for Tone 7. He relates that their
bodies were discovered by St. Ambrose and interred in the Ambrosian Basilica. The importance of these saints in Ambrosian liturgy is confirmed by the fact that they are named in the Ambrosian Mass and Litany. The text of the antiphon is found in the Ambrosian Vesperal, occurring in Oratio IV, sung on June 19th, the feast day of the saints.

Between Tones 7 and 8 Gaffurius treats at considerable length the melodies for the Antiphon Nos qui vivimus, which he attributes to St. Ambrose, and for Psalm 113, In exitu Israel, affording a striking example of contrasting practice in Ambrosian and Gregorian chant. Although this antiphon and psalm are generally considered to belong to the tonus peregrinus, in which the psalm tone has two tenors, a for the first half of the verse and g for the second half, it is noteworthy that Gaffurius considered the antiphon to belong to Tone 7. This is similar to practices in early treatises and manuscripts, in which the melody of the antiphon was generally assigned to Tone 7 or 4. In order to demonstrate his theory and also to show differences between Gregorian and Ambrosian psalm tones, Gaffurius presents three versions of both antiphon and psalm.

The first version, consisting of the antiphon and the first complete verse of the psalm, follows Gregorian usage. The antiphon has an ambitus of c - b flat, with a final on g. Gaffurius states that this version of the antiphon, ending on c, is simply a transposition of its position within Tone 7. The Gregorian psalm tone of the first version follows the normal tonus peregrinus formula with two exceptions. Gaffurius's psalm tone melody for In exitu Israel begins with a g a instead of the customary a b-flat a, and the second half of the verse begins a b-flat b before settling on g, the toner of the second half.

In his second version the author uses the same antiphon on the same transposed pitches, but presents an Ambrosian psalm tone. He makes the significant statement that Ambrosians of his day used the Gregorian antiphon but their own psalm tone, a comment which emphasizes the close interrelationship of the two rites, and especially the influence exerted by Gregorian chant. His Ambrosian psalm tone consists of only two pitches, a tenor g for all syllables of the psalm text except the final, which descends to f.

The third version comes from a very old antiphon, the author had seen. The antiphon is notated on the untransposed pitches of Tone 7, and is the original form in his opinion. The ambitus is g - f', ending on d', the final of Tone 7. The psalm tone is the same Ambrosian melody used in the second version, but now notated on a tenor d' and a final c'. It is worth noting that the modern Ambrosian Liber Vesperal prints both antiphon and psalm tone melodies on the same pitches as those in the third version. Since the Liber Vesperal is based on modern research by Solesmes monks of the earliest sources, it confirms Gaffurius's statement that his third version was based on an old antiphonary. Moreover, he comments that at Sunday Vespers Ambrosians alternate between the antiphon Nos qui vivimus and Nonini tuo da gloriam, Domine, both employing the psalm In exitu Israel but each antiphon occurring on alternate Sundays. The identical practice still obtains in Liber Vesperal.

The antiphon O virgo virginum, an example of Tone 8, may have been chosen by Gaffurius to end his modal presentation as a mark of respect to the Virgin Mary, the patroness of the Milan Cathedral. After citing the Gregorian psalm tone for Tone 8 he then turns to the Ambrosian rite and concludes his treatment of the Tones with Ambrosian Euouae for each of the 8 Tones. These Euouae are syllabic cadence formulas, each beginning with repeated pitches indicating the tenor of the Tone. With two exceptions the tenors are the same as Gregorian psalm-tone tenors: the tenor of Tone 2 is g and of Tone 3 is b. Gaffurius mentioned singing b instead of c in his discussion of Tone 3, while the use of g as a tenor for Tone 2 is a further indication of the lack of standardization of Ambrosian psalm tone formulas in comparison with the highly organized Gregorian system. The simplicity of his Ambrosian Euouae examples and the "Ambrosian moderation" of the antiphons were so pleasing to Glarean that he printed both in his Dodécahedron.

Gaffurius's treatment of the eight Tones is particularly significant because it clearly demonstrates two facts concerning the relationship of Ambrosian musical repertory, see Apel, op. cit., 508; "Choral", in MGG., II, col. 1265; New Oxford History of Music, I, 61; The Catholic Encyclopedia, I, 394.

67 Op. cit., 7. The only difference between the modern form of the melodies and Gaffurius's version occurs on the incipit of the modern psalm tone, which begins with b c' before coming to the toner d'. Since this incipit is used only for the first verse, the remainder of the psalm verses proceed exactly as in Gaffurius's version.


61 During Gaffurius's time the Cathedral was the greater, or summer church; the lesser, or winter church was situated at the opposite end of the Piazza del Duomo, and was destroyed in 1543. Cf. The Catholic Encyclopedia, I, 400.

60 This is pointed out in Liber Vesperal, 819. In this book Gaffurius's Ambrosian Euouae terminations are found on pages 826-837, among other possible terminations.

Ambrosian and Gregorian chant during the Renaissance. On the one hand, the inroads made by the Gregorian modal system is evident in his acceptance of the latter and his willingness to apply it to Ambrosian chant, although it is most probable that he was acquainted with early manuscripts in which Ambrosian chant had its own method of classification which was independent of the Gregorian system. Jesson cites a handbook on Ambrosian chant, written by C. Perego and published in 1622, in which the infiltration of Gregorian methods was evident. Gaffurius's examples offer testimony that this practice was already well established in the fifteenth century.

On the other hand, the many deviations from the Gregorian norm, both in antiphons and in psalm tone formulas, indicate that Ambrosian liturgy and chant was very much alive during Gaffurius's lifetime. The Practica Musicæ does not contain Mass music, the Gaffurius codices of the Milan Cathedral substantiate this view. Very frequently the polyphonic Masses in the codices lack both Kyrie and Agnus Dei. Since the Ordinary of an Ambrosian Mass does not begin with Kyrie eleison and also does not include an Agnus Dei section, it is evident that these sections were missing because they were not needed in liturgical practice. Thus both the Masses of these codices and the Office chants in Practica Musicæ testify to the vitality of Ambrosian liturgy and chant at that time. Book II, devoted to poetic feet, rhythm, notation, and mensuration, demonstrates Gaffurius's use of the historical approach, and confirms the comment in his preface that the Practica was a compilation of principles enunciated by others.

In the material on poetic feet Gaffurius shows his humanistic leanings, his personal interest in poetry, and his conception of the relation of poetry to music. He presents an imposing list of metrical feet together with a definition and illustration of each type. Authorities cited include Aristides Quintilianus, St. Augustine, and Diomedes. He then concludes with his own observations about poetic meters, and what should be observed or avoided.

After relating poetic feet to musical meter and rhythm, he discusses rhythm, citing opinions of several Greek writers, as well as Quintilian and Venerable Bede. Most interesting is his presentation of Greek rhythmic symbols taken from a treatise which was published in modern times until 1841. Five rhythmic signs are discussed. A breve of one tempus is a short horizontal line, —; a long of less than two tempora is a combination of the short line with a wavy line written directly above it; a long of three tempora is similar in shape to an L ; a long of four tempora is [ ] ; and a long of five tempora is [ ] . A dot after a sign indicates an anis, and the lack of a dot means a thesis.

As the next step in his historical presentation, Gaffurius illustrates note shapes of black notation, remarking that posterity later made them white. He cites Franco, Philip of Caserta, Johannes de Muris, Anselmi, Prosdocimus de Beldemands, and Tintorius as writers whose treatises he had consulted. As a result the Practica is a compendium of varied and unusual note shapes in addition to standard types. Among them is a minin with the tip of its stem "bent back to the right in the shape of a figure two," which has the same shape as a note shown by Prosdocimus. Also listed are some unique note shapes found in Anselmi. Included are greater, lesser, and median breves and semibreves. A greater semibreve, for example, is a square note with stems or plica strokes ascending and descending from...
GAFFURIUS'S PRACTICA MUSICA E

120 MUSICA DISCIPLINA

the right side; a lesser semibreve has the same stems on the left side; in a median semibreve they bisect the square. 77

The remainder of Book II deals with mensuration. Since this aspect of Gaffurius's treatise has been treated in various studies 78, it is not pertinent to discuss it here. Worth noting, however, is the fact that Gaffurius also adheres to the historical approach in this subject. In speaking about modus 79, for example, he cites the relation of its note values to poetic feet, and observes that early musicians had one modus for a maxima and a long. No single note is worth more than nine perfect breves, and that is also the longest note value a singer can hold in one breath and still maintain a good tone. He accepts the definition of Anselmi for imperfection of notes 80, and quotes Johannes de Muris on alteration 81.

Two comments in Book II and one in Book III relative to tactus are found in Practica 82, although its author does not use that term. The substance of his remarks indicates that he must have discussed the idea of a regular temporal unit with physicians with whom he was acquainted 83. In his first comment he states that physicians believe that the accurate measurement of a short time span conforms to even pulse beats by establishing an equal arsis and thesis, which they call diastole and systole, in one pulse beat. But he notes that a pulse rate is uneven in persons with a fever.

His second comment affirms a semibreve as the unit of measurement. It contains diastole and systole, or arsis and thesis, and equals a single tempus or pulse beat divided into two equal parts. To each part of the semibreves a minimal length of tone has been given, and thus each part is called a minim. In his third comment he equates the tempo of a semibreve to the pulse beat of a man breathing evenly. Somewhat this widely quoted statement is translated as "the pulse beat of a quietly breathing man." 84

The context of Gaffurius's remarks would indicate that the latter translation is not what Gaffurius really meant. His comments all refer to the idea of "even breathing", not "quiet breathing". He emphasizes the equality of the two parts of the pulse or beat, not its tempo. Although it might be argued that there is a similarity between the two ideas, this is not necessarily the case, and the phrase "quietly breathing" contains an implication which Gaffurius's statements do not seem to substantiate.

His Angelicam ac divinum opus musicæ of 1508 85 supports and amplifies his statements on tactus in Practica. In this vernacular treatise he relates that a pulse beat has two movements, a rise and a fall, which are called systole and diastole by physicians and arsis and thesis by musicians. A semibreve beat is equated to a pulse beat and is divided into two equal movements, each of which has the value of a minim. Gaffurius's emphasis on the pulse of a healthy person is echoed by Lanfranco, who defines tactus as "un certo segno formato e imitazione del polo ben sano per elevazione e deposizione." 86

Book III is devoted to a study of counterpoint. Since certain parts of its fifteen chapters are widely known, this discussion will be limited to an attempt to shed fresh light on Gaffurius's approach to counterpoint. He begins with a systematic study of consonant intervals, from the union to the twentieth. Almost immediately, however, he introduces the consonant intermediate tones which can be used between the outer notes of an interval, so that he also discusses chordal formations. The perfect fifth, for example, is composed of a minor and major third meeting on a common tone.

In a section on four-part writing 87 he also discusses vertical structures and their harmonious combinations. It is clear that Gaffurius was keenly interested in the harmony of concords. The stress he put on the proper construction of chords, both three-part and four-part, and the amount of space

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77 Anselmi also formed three types of longs and minimus, Gaffurius summarized his note shapes by drawing three in the margin (pp. 84-85) of his copy of Anselmi's manuscript.
79 II, 7.
80 II, 11.
81 II, 13.
82 III, 1, 3, and III, 4.
83 Possibly with Nicolò Leoncino, professor of medicine at the University of Ferrara, who translated Ptolemy's Harmonicon for Gaffurius (Gallo, op. cit., 174); or with Antonius Couxus and Hypereinamirus Segazonus, two physicians whose poems appear in Gaffurius's Angelicam ac divinum opus musicæ, Milan, 1508.
85 Tactus III, ch. 4. Although this treatise has been called a modified Italian translation of chapters II and III of Practica (C. Sarroli, MGG IV, 1740), it contains material from the entire Practica, but in a condensed and varied form. It has five Tractatus instead of four books and contains 1 polyphonic example instead of the more than 150 polyphonic examples in Practica. In addition, it includes considerable new textual material.
86 Pretorius, op. cit., 60.
87 In III, 7.
88 III, 11.
in Bock III that he devoted to this aspect of counterpoint, indicate how 
vitaly he was concerned with it.

In regard to the famous eight rules of counterpoint in Practica 96, it 
should be pointed out that these rules are not his, as he states in his opening 
sentence 96, but a compilation from other musicians. Thus he does not 
hesitate to depart from them, a fact which is not always recognized. The 
first rule is a case in point. After stating that according to the first rule every 
song should begin with a perfect consonance, he calls the rule arbitrary, not 
essential, and says that many songs begin with imperfect consonances. His 
two-voice musical illustration of this rule begins with a major third 97. Here 
he appears more advanced than Tintorēs, who allows a composition to 
begin on an imperfect consonance only if it is an upbeat 98.

The rule that two identical perfect consonances should be separated by 
one or more imperfect consonances he proposes the corollary that a dis-
sonance can never substitute for an imperfect consonance in this situation. 
The rule that voice parts should move in contrary motion he also calls ar-
bitrary, commenting that parallel motion is frequently found, especially in 
imitative style.

In a chapter 99 on musica ficta in counterpoint Gaffurius proposes that 
the normal hexachord system can be increased by the addition of two hexa-
chords beginning respectively on a and on b-flat. In addition to the a hexa-
chord, producing c-sharp and f-sharp, and the b-flat hexachord with e-flat 
as a constituent tone, he comments that the same principle can be followed 
in forming other ficta hexachords. As an example of musica ficta he prints 
a short two-voice piece 100 which is easily the most unusual in this regard 
in the Practica. It begins with a signature of two flats that are then canceled 
in the middle of the piece by two natural signs, dividing the piece into two 
parts which, however, maintain rhythmic continuity. The cadence of the 
first part with the two flats is on an octave e-flat. The lower voice moves 
directly to e natural, the beginning of the second part, making a chromatic 
progression in that voice. In the second part both voices end on an octave 
e, which creates a striking relationship between the two cadences, since the 
first part closes on e-flat and the second on e natural.

96 Summarized in Reese, op. cit., 179, and discussed with a German translation 
in H. Riemann, Geschichte der Musiktheorie im IX. — XIX. Jahrhundert (Hesse, 
1920), 337.
97 Musicians have organized in eight rules the procedures for the elements of 
song. III, 3.
98 Ex. 17 in my edition.
99 Liber de Arte Contrapuncti, III, 1 in Coussenque, op. cit., 147.
100 III, 13.
101 Ex. 51.

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first part closes on e-flat and the second on e natural.

The frequent use of musica ficta for melodic purposes, especially in a 
movement involving a lower auxiliary tone, is confirmed by Gaffurius. In 
the melodic progression of a, g, a, he says, g is often sung as g-sharp. He 
names the Salve Regina as an example 97. And in the melodic segment g, f, 
the f often becomes f-sharp, a practice occurring frequently among Amb-
rosians.

Although Gaffurius advocated Pythagorean intonation, as a practical 
musician he did not object to certain deviations from it in tuning instru-
ments. His Practica is apparently the first treatise in which the principle of 
temperament is mentioned 96. He says 97 that a perfect fifth can be dimin-
ished in size by a very small and rather indefinite amount, which organists 
call participata 98. In another significant remark 99 he says that in sounding 
the interval of a [major] sixth its intermediate tone, which is a major third 
above the lowest tone, is often lowered a little to bring it closer to the smaller 
and more pleasant minor third. This is done, he indicates, by experimenta-
ton with instruments. In a later treatise 100 he makes a similar statement 
about the major sixth, saying that organists call its tuning communicata or 
participata, and rely greatly on experience and judgment.

Book IV, a study of proportions, is without doubt the least understood 
and appreciated part of Practica Musicae. Although Gaffurius’s treatement 
of proportions was widely accepted by his contemporaries, it was chiefly 
in relation to the simpler proportions of genus multiplex and genus super-
particularare, and did not apply to his study of more complicated proportions.

A statement to this effect was made by Pietro Aron in his Toscanello in 
musica of 1525 101. Even Glarean, who adhered in the main to Gaffurius’s 
measurial theories, and who printed a number of his examples of propor-
tions, did not see the value of the more involved types 102. E. Praetorius 103 
diminishes them as “spekulativen Spielereien” and thus does not recognize 
their purpose or method of organization. And according to Apel, “even the 
thoretical value of such extravagances is doubtful” 104.

Close examination of Book IV reveals, however, that it is a highly

95 In Liber Usualis (Tournai, 1927), 276.
96 J. Murray Barbour, Tuning and Temperament (Michigan State College Press, 
1951), 25.
97 III, 3.
98 According to Barbour the participata resulted in a tuning closer to equal 
99 III, 2.
100 De harmonia musicorum instrumentum opus, III, 8.
101 Praetorius, op. cit., 98.
102 Miller, op. cit., II, 246.
104 The Notation of Polyphonic Music (Cambridge, 1955), 145.
organized and minutely detailed textual and musical exposition of the principles of proportional writing, and that even the most complex of the proportions is based on one unified and consistently employed method of organization. In regard to unity of conception, thoroughness of treatment, both textual and musical, and organizational design, it is without parallel among treatises of the time.

The emphasis that Gaffurius placed on this book may be seen in its musical content. Of the 155 polyphonic musical examples in Practica Musicae, 111 are contained in Book IV, and they illustrate in a systematic order the five proportional genera. Before considering the genera in detail the following outline will summarize Gaffurius’s order of presentation of musical examples.

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Ex. No.</th>
<th>Genus</th>
<th>Proportions</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>46–65</td>
<td>multiplex</td>
<td>2/1 through 10/1</td>
</tr>
<tr>
<td>4</td>
<td>66–70</td>
<td>submultiplex</td>
<td>1/2 through 1/5</td>
</tr>
<tr>
<td>5</td>
<td>71–89</td>
<td>superparticulare</td>
<td>3/2 through 10/9</td>
</tr>
<tr>
<td>6</td>
<td>89–92</td>
<td>subsubparticulare</td>
<td>2/3 through 5/6</td>
</tr>
<tr>
<td>7</td>
<td>93–104</td>
<td>superpartions</td>
<td>5/3 through 13/7</td>
</tr>
<tr>
<td>8</td>
<td>105–110</td>
<td>subsubpartitions</td>
<td>3/5 through 7/11</td>
</tr>
<tr>
<td>9</td>
<td>111–123</td>
<td>multiplex superparticulare</td>
<td>5/2 through 21/4</td>
</tr>
<tr>
<td>10</td>
<td>124–132</td>
<td>submultiplex superparticulare</td>
<td>2/5 through 4/17</td>
</tr>
<tr>
<td>11</td>
<td>133–143</td>
<td>multiplex superpartitions</td>
<td>8/3 through 19/4</td>
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<tr>
<td>12</td>
<td>144–148</td>
<td>submultiplex superpartitions</td>
<td>3/8 through 4/19</td>
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<tr>
<td>13–15</td>
<td>149–155</td>
<td>successive proportions</td>
<td></td>
</tr>
</tbody>
</table>

As shown in the outline, each genus and each proportion is followed by its opposite genus (indicated by the prefix *sub*), and its opposite or inverted proportion. The example numbers show that genera with the prefix *sub* have many less musical examples than the other genera. The reason may be that these genera of lesser inequality, which augment note values, are the opposite of genera of greater inequality, and so need less detailed treatment, since each of the five genera begins with examples of greater inequality.

*Genus multiplex*, the first of the five genera, has proportional examples for 1, 1, 2, etc., through 1. Two examples are devoted to each proportion, every example consisting of a two-voice piece for tenor and cantus. The proportions always apply to the cantus, the tenor maintaining the normal tactus based on a semibreve. The cantus of the first example of 1 has

<table>
<thead>
<tr>
<th>Example</th>
<th>Proportion</th>
<th>Note Values</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>2/1</td>
<td>1/2</td>
</tr>
<tr>
<td>2</td>
<td>1/2</td>
<td>2/1</td>
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<tr>
<td>3</td>
<td>3/2</td>
<td>2/3</td>
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<td>4</td>
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<td>8/7</td>
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<tr>
<td>9</td>
<td>9/8</td>
<td>8/9</td>
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<tr>
<td>10</td>
<td>10/9</td>
<td>9/10</td>
</tr>
</tbody>
</table>

These mensural and proportional signs: 2 > 4, the second example has: 2 1 4 2 0 1 2 C 2 4. Ordinarily there is at least one complete measure between each change of sign.

Gaffurius used the first example to illustrate these principles: the contrasting rhythmic results of placing 1 after *tempus perfectum* and then after *tempus imperfectum*; the removal of a proportion by the appearance of a succeeding mensural sign; the use of 1 instead of a canon inscribed *diminutur in duplo*. The second example shows in addition that a proportion, as 1, is canceled by its opposite proportion, 2. The remaining examples of *genus multiplex* follow exactly the same method, changing only to another proportion until 1 is reached. Examples of *genus submultiplex* follow a similar plan but do not go beyond the proportion 5.

In *genus superparticulare*, which also includes examples of color, Gaffurius begins with examples of 2. The importance he attaches to this proportion is seen by the fact that he writes five examples of color, which he equates with *sesquialtera*, before he continues with his systematic treatment of *genus superparticulare*, ending with a 9 proportion. Both his examples of 2 and his textual explanations follow the conventional definition of 2 proportion, and do not support the thesis of Praetorius that *sesquialtera* compositions of Gaffurius should be altered rhythmically to make the rhythm smoother and avoid a "rhythmisches Labyrinth". In fact, considering the much greater complexity of many proportional examples that follow *sesquialtera*, it is unlikely that Gaffurius would consider it sufficiently difficult to make an exception of it.

During his discussion of *sesquialtera* Gaffurius makes the statement that a proportion is easily recognized if it is a constituent part of a note, as a third of a breve in *tempus perfectum* (a semibreve) or a fourth of a breve.

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105 Example numbers refer to my edition of Practica Musicae.

106 With the exception of Exx. 48 and 49, all examples in Book IV are for two voices.
semibreve in prolatio minor (seminim) \(^{109}\). But if the proportional note is not evenly divisible, as a fifth part of a semibreve, a series of such notes will move in an unbroken succession, so that the precise value of each note cannot be determined by marking an exact middle, yet so that the value and measurement of each note will continue without interruption.

It is with this kind of proportion, a \(\frac{4}{5}\) of genus superparticulare, that Gaffurius added a new dimension to the remaining examples of individual proportions \(^{110}\), which amount to more than half the total number of examples in Book IV. The new procedure is related to the tenor and could be called isometric. Although the tenor of these examples continues to function as the part which keeps the normal tactus, and proportional numbers are placed only in the cantus, the tenor is now arranged metrically so that it contains exactly the number of semibreves or their equivalents called for by the lower number of the proportion.

Of still greater significance is the relation of the tenor to a proportion and its opposite or inverted proportion. In every example the original proportion is canceled by its opposite proportion, but the tenor continues the same isometric pattern established at the beginning of the original proportion. The isometric design of the tenor ends either at the end of the composition \(^{111}\) or, if both tempus perfectum and tempus imperfectum are employed, at the change of measurement as well as at the end.

An \(\frac{7}{8}\) proportion \(^{112}\) of genus superparticulare illustrates Gaffurius's principle. The cantus pattern is 0 7 8 C 14 16. In the \(\frac{7}{8}\) proportion the tenor, in tempus imperfectum, equals a measure of seven semibreves; under the

cantus 8, which follows one measure later, the tenor continues with a measure equal to seven semibreves, thus forming a two-measure isometric group. The plan of proportions following the tempus imperfectum of the cantus is the same with one exception. The tenor under 14 equals two

measures of seven semibreves each, and under 16 equals one measure of seven semibreves, making a three-measure isometric grouping. This pattern, which occurs frequently, indicates that Gaffurius was not concerned with an equality of measure units, but with the maintenance of an isometric tenor

\(^{109}\) Gaffurius's name for semiminim.


\(^{111}\) The final long, of indeterminate length, is not part of the isometric pattern.

\(^{112}\) Ex. 86.
practicabili states that the work was written for apt pupils. His method of organization is detailed and pedagogically sound. The contrapuntal melodies of the two-part examples, regardless of rhythmic intricacies, can be considered exemplary models of contrapuntal techniques practised in his time. It is hard to believe that Gaffurius would lavish such care on so many musical examples if he did not expect them to be practised and sung, or that he would include them in a tome entitled Practica Musicae.

ANTONY HOLBORNE

BRIAN JEFFERY

When John Dowland in 1600 dedicated his song 'I saw my lady weep' "To the most famous, Anthony Holborne", one of the most prolific of Elizabethan composers was indeed at the height of his reputation and of his musical activity, with two lengthy publications and numbers of other pieces to his credit. Three years later, most probably in the course of a political mission for Sir Robert Cecil, Holborne died, and his life and music since then have been little studied. In this article, I would like to gather up all the available information about his life, to describe and list his many different kinds of instrumental music, and to give an account of his position in the musical and to some extent literary scene of his day.

1. BIOGRAPHY

The two publications — the Cittharn Schoole of 1597 and the Pavans, Galliards, Almains and other short Aeirs of 1599 — tell us that Holborne was a "Gentleman and Servant to her most excellent Majesty". Robert Dowland, publishing music of his after his death, twice calls him a "Gentleman Usher" to Queen Elizabeth I, a much more precise designation than merely a "servant"; but as we shall see, this is not reliable evidence. Let us turn to the other evidence that is available, in detail, which will take us back some years before any of these publications.

Of his family we know only a brother, William Holborne. This brother published "sixe short AERS Neapolitan like to three voyces" at the end of Antony Holborne's Cittharn Schoole of 1597. Whereas Antony had by then been composing for a number of years, these "Aers" are described as "the first fruits of composition", and it therefore seems most likely that William was the younger of the two brothers.

A "William Holborne" and a "Thomas Holborne" were admitted

The article is based on parts of a thesis entitled The life and music of Antony Holborne, submitted in 1965 for the degree of Bachelor of Letters at Oxford University.

Existing biographies have been hampered by the inevitably scanty information; for example, the entries in Die Musik in Geschichte und Gegenwart and the Dictionary of National Biography, and W. H. Grattan Flood, 'Anthony Holborne', 'New light on late Tudor composers' xxxiv, Musical Times, 69 (1928), 511-2.