Greek Musical Notation

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virtuoso; afterwards he settled at Bucharest, where he became Conductor at the National Theatre, and organized the military bands of the country. He published several volumes of Roumanian folk-songs, and also composed the Roumanian National Anthem. He served at Plevna, and at the time of his death he was Inspector-General of Military Music in the Roumanian Army.

THOMAS WILLERT BEALE, on the 3rd ult., aged sixty-six, at Gipsy Hill. He was born in 1828, the son of Frederick Beale, of the firm of Cramer, Beale and Addison, and became a pupil of Edouard Roedel, George French Flowers, and Pugnî. He was a good pianist, and composed a good deal of music, which, however, is less likely to be remembered than his contributions to musical literature. Amongst these his recently published "Light of other days," two volumes of interesting reminiscences of the famous singers, performers, and composers with whom he came into contact, is of considerable value as a contribution to the history of music in England during the last fifty years. He took a leading part in the founding of the new Philharmonic Society, and invited Berlioz to conduct its Concerts. Under his *nom de plume* of Walter Maynard, he contributed a great number of articles to many journals and magazines.

JOHANNA JACHMANN-WAGNER, a niece of Richard Wagner and the daughter of Albert W. Wagner, an operatic tenor. She went on the stage when a child, and in 1844 was engaged for the Dresden Opera, where she created the part of *Elizabeth* in "Tannhäuser" on the production of that opera in 1845. She was also the original *Fides* in the German version of "Le Prophète," and from 1850 till 1861, between which dates she appeared twice in England, was one of the chief artists at the Berlin Opera. Then she suddenly lost her voice, whereupon she made a *début* as an actress. After a successful career as such she retired from the stage, but in 1872, after her singing voice had returned to a certain extent, she sang the contralto solo part in the historic performance, conducted by Wagner, of Beethoven's Choral Symphony, on the laying of the foundation stone of the Festival Theatre at Bayreuth. She was also one of the *Walküren* and *Norns* in the performances of the "Nibelung's Ring" in 1876. She died at Würzburg on the 13th ult., aged sixty-six.

The death is announced of JOSEPH HAWKINS, who was one of the most prominent men in musical circles in Liverpool about twenty years ago. At that period he was secretary of the then famous representative choir, which took honours at the last of the National Music Meetings organised by Mr. Willert Beale. Deceased was fifty-two years of age.

CORRESPONDENCE.

GREEK MUSICAL NOTATION.

TO THE EDITOR OF "THE MUSICAL TIMES."

SIR,—Somebody raised the question whether Aristoxenus used equal temperament. In reply, I cited the passage in Aristoxenus, pp. 45, 46, which shows that he did not. Mr. Bergholt now comes forward with a couple of quotations from Bellermann and Westphal to the effect that Aristoxenus did use equal temperament. But why should we waste our time upon these second-hand authorities? We know from Aristoxenus himself that they are wrong.

Mr. Bergholt then sets out what he is pleased to call "an exact view of the Aristoxenean intervals (tense diatonic) as Mr. Torr assumes them." His intervals are wrong. He has merely subtracted a major tone from an octave, and then resumed the plan of equal temperament in apportioning the residue. If he means them for the intervals implied in Aristoxenus, pp. 45, 46, the four tones of 1·992 should all be 2·04, like the other one, and the semitones of ·996 should both be ·90. But if he means them for the intervals that Ptolemy assigns to the "tense diatonic" of Aristoxenus, the ·996 should be ·88, and the 1·992 should be alternately 1·93 and 2·17.

He argues that these intervals of his differ so little from the intervals of equal temperament that practically it would not matter which were used. But, even if his intervals were right, his argument would not meet the

point I raised. What I urged was this:—"There is no saying to which sect of musicians or what period the hymn must be assigned." It is not a question of the scheme of Aristoxenus alone, but of other schemes as well, such as those of Archytas, Eratosthenes, Didymus, &c.

To proceed to the next point. Alypius uses two different forms of *pycnon* in his chromatic scales, one of them having three notes in succession, 1, 2, 3, while the other skips a note, 1, 2, 4. And he does not use these forms promiscuously, but takes them in fixed order. Thus, in the lower Dorian chromatic scale he has 1, 2, 3 in all the five *pycna*, in the Dorian he introduces 1, 2, 4 in the third *pycnon*, and in the upper Dorian he introduces it in the second and fifth also; while in the lower Ionian he has 1, 2, 4 in all the five *pycna*, in the Ionian he introduces 1, 2, 3 in the third *pycnon*, and in the upper Ionian he introduces it in the second and fifth also.

Mr. Bergholt treats all this as "an anomaly," and maintains that 1, 2, 3 may be taken to mean 1, 2, 4, or conversely. My contention is that 1, 2, 3 means 1, 2, 3, and 1, 2, 4 means 1, 2, 4.

This contention of mine, as Mr. Bergholt remarks, leads to the conclusion that certain kinds of tuning were confined to certain key-pitches. And that, he says, "is clean contrary to the testimony of the Greek writers." In proof of this assertion he cites a passage in Ptolemy, ii., 11, which goes to prove the opposite.

Ptolemy is describing his plan for seven keys. There are to be seven notes within the octave; and the pitch of these notes is fixed, the seven intervals being determined by the ratios 9:8, 21:20, 10:9, 8:7, 21:20, 10:9, 8:7. Seven keys are assigned to these seven notes; and each of these seven keys differs from the rest, not only in its pitch, but in the structure of its scale. Thus, in the Hypo-Dorian key, the interval between *proslambanomenos* and *hypate hypaton* is determined by the ratio 8:7, the three intervals in the tetrachord from *hypate hypaton* to *hypate meson* are determined by the ratios 21:20, 10:9, 8:7, and the three intervals in the tetrachord from *hypate meson* to *mese* by the ratios 9:8, 21:20, 10:9; while in the Hypo-Phrygian key the interval between *proslambanomenos* and *hypate hypaton* is determined by the ratio 10:9, the three intervals in the tetrachord from *hypate hypaton* to *hypate meson* are determined by the ratios 8:7, 21:20, 10:9, and the three intervals in the tetrachord from *hypate meson* to *mese* by the ratios 8:7, 9:8, 21:20.

Mr. Bergholt says that, according to this passage in Ptolemy, the intervals in the Hypo-Iastian key "are exactly the same as those in the Hypo-Dorian or Hypo-Phrygian, only at an intermediate pitch"; thus taking the passage to mean that the corresponding intervals were the same in point of magnitude, so that the scales would differ only in their pitch. But the ratios already quoted are enough to show that this was not the case.

I may add that these ratios of Ptolemy's are fatal to the "postulates" in Mr. Bergholt's previous letter—September, p. 627—for they show that the tone in question was not necessarily a major tone, nor the fourth a perfect fourth.

His next argument is based on a comparison of Alypius with Ptolemy. He says "Ptolemy furnishes the ratios; Alypius furnishes the notation: put the two side by side, and the whole reckless assumption of Mr. Torr falls to the ground." Accordingly, he takes a scale with ratios and notation, as aforesaid; and remarks that "the distance between M and K is here $\frac{1}{2}$, something more than a full tone of $\frac{1}{2}$; and it is clear that K has more than moved into the place already occupied by I: it has even moved past it." Quite so. The fact is that the note has moved past I into the place already occupied by H; and the explanation is that the note is H, not K.

He has taken seven of his eight letters from a diatonic scale in Alypius, and the other one from the corresponding chromatic scale; and having thus replaced the diatonic H by the chromatic K, he points to the surprising fact that K is standing in the place which properly belongs to H. No doubt, he thinks that he is justified in introducing the chromatic K because Ptolemy describes the scale as a combination of the Tense Chromatic with the Medium Soft Diatonic. But a scale could be modified like this without ceasing to be diatonic. Take the Medium Soft Diatonic itself as an example. Aristoxenus tells us how

this scale was formed by combining the Soft Chromatic with the Tense Diatonic—see pp. 27, 52—yet Ptolemy and Archytas call it diatonic.

This fault runs through all that Mr. Bergholt says about the other scales in Ptolemy. He always takes the chromatic form of the *pycnon*, M A K or 1 2 3, whereas he ought to take the diatonic form, M A H or 1 2 6.

His next argument is based on a passage in Boëthius, which states that the enharmonic tuning would make Δ a note of the same pitch as Γ in the diatonic tuning. But this is not to the point. It is obvious that two notes could be brought to the same pitch by the use of two different tunings. The question is, whether two notes could be brought to the same pitch without a change of tuning. That is the difficulty in the transcript of the hymn. The two notes I and K are placed at the same pitch, while the tuning is unaltered.

Moreover, the figures in this passage of Boëthius will hardly bear examination. He gives 3888 for Δ, 3992 for E, and 4096 for Z, as though he expected to divide the semitone into a pair of quarter-tones by dividing the string midway between 3888 and 4096. But clearly he ought to follow the Pythagorean ratios here in fixing Δ and E, since he follows them in fixing Γ and Z. These ratios of 40 to 39 and 39 to 38 give 3993 and 3891 for E and Δ in the enharmonic scale, while the ratio of 256 to 243 gives 3888 for Γ in the diatonic scale, thus avoiding any interference of the notes.

Mr. Bergholt then proceeds to obtain various results "from Mr. Torr's own admissions." He asserts that "O Æ N is a *pycnon* in the Hypo-Lydian chromatic, and may therefore, says Mr. Torr, represent two successive intervals of $\frac{1}{4}$ tone." And he also asserts that "Mr. Torr permits us to stretch O-N to $\frac{3}{4}$ -tone and to compress M-A to $\frac{1}{4}$ -tone." Now, there are three cases in Aristoxenus where the *pycnon* has intervals of a quarter, three-eighths, and a third of a tone respectively; and I said that these three cases could all be expressed by a *pycnon* of the form K A M or 1 2 3. But here Mr. Bergholt takes the converse of this, as though I had said that every *pycnon* of this form must be intended to express those cases. I have never said that.

Suppose I were to say that the intervals of tone and tone, tone and semitone, semitone and tone can all be expressed by three consecutive white notes upon the piano-forte, this being the case with C D E, D E F, E F G. Mr. Bergholt might just as reasonably treat that as an "admission" of mine that any three consecutive white notes, such as D E F, may be taken to express the intervals of tone and tone, tone and semitone, semitone and tone.

We may now pass to the next point. In dealing with the schemes of Aristides and Gaudentius, I wrote as follows:—"When the notes in the octave were reduced from twenty-one to twelve, musicians were left with more signs than notes, and it did not matter which of the available signs they selected for use. Thus, when one of the notes was omitted between I and M, it did not matter whether the remaining note was described as K or A. In all such cases Aristides took the first note of the two, whereas Gaudentius seems to have taken the second."

Mr. Bergholt denies that the notes were reduced from twenty-one to twelve, and further denies that Aristides and Gaudentius selected their notes in the manner I described.

Gaudentius gives his notes on pp. 23, 24. He says that the first note is φ; the second is γ [v] with τ as duplicate; the third is σ; the fourth is ρ with π as duplicate; the fifth is ο; the sixth is ξ with ν as duplicate, and so forth. And he says that each note stands a semitone above the note before.

Aristides gives a list of notes on p. 27, with the remark that they stand a semitone apart. And this list contains φ, τ, σ, π, ο, ν, while ν, ρ, ξ are relegated to the line below.

These passages show that Aristides and Gaudentius had twelve notes to the octave, the intervals being semitones throughout; and further show that, in dealing with the duplicates, Aristides took the letter that came first in alphabetical order, while Gaudentius took the letter that came second.

In speaking of the passage in Aristides, Mr. Bergholt says that "in the second and third lists every note is set forth (allowing for the *lacuna* of copyists), the order of the

second list being strictly alphabetical: the fourth list also gives the alphabetical order, tabulating all the modifications of each letter-form." Aristides says on p. 28 that the letters in this fourth list are the letters of Pythagoras—not his own—and the second list is only a repetition of these letters in the order of their pitch as notes. But the third list omits the 5th letter in order of pitch and its octaves the 26th and 47th, and also the 14th and its octaves the 35th and 56th. In other words, it omits the equivalents of C flat and F flat. And these are exactly the omissions that are required to complete the reduction of the notes from twenty-one to twelve. Seven of the notes are set aside as duplicates; and then two others are omitted altogether. It is absurd to speak of these most significant omissions as "the *lacuna* of copyists."

Aristides, p. 26, and Gaudentius, p. 23, agree in stating that the duplicates were furnished by the notes which would stand at the end of the *dieseis* in an enharmonic scale; and their lists bear out this statement, since they treat ν and τ, ρ and π, ξ and ν, as pairs of duplicates, but give no duplicates to φ or σ or ο. Nevertheless, Mr. Bergholt says that these authorities "will justify the transcript in giving D natural for K as well as I." One would like to know the process of his reasoning. In the schemes of Aristides and Gaudentius the letters for C sharp (A) and D flat (K) become a pair of duplicates, while the letter for D natural (I) is one of those without a duplicate. And this, he says, supports the notion that the letters for D flat (K) and D natural (I) may be treated as a pair of duplicates.

Incidentally he states that "the date of Alypius is A.D. 360 or later." This date can only be obtained by identifying our Alypius with another Alypius who lived about that time. There is not a scrap of evidence in favour of the identification, and a great deal against it.—Yours, &c., CECIL TORR.

TO THE EDITOR OF "THE MUSICAL TIMES."

SIR,—I will be as concise as possible in my reply to the above letter of Mr. Torr (to which you have courteously given me the opportunity of replying in the same issue), knowing that this controversy has already assumed unreasonable proportions.

Bellermann and Westphal, in the works I cited, show excellent reasons (which, for want of space, I could not reproduce) why the passage Mr. Torr quotes from Aristoxenus is misleading. I repeat that, until Mr. Torr refutes the reasons there given, THE MUSICAL TIMES is fully justified in following Bellermann and Westphal.

I meant my Aristoxenean intervals to be Mr. Torr's, as I understood him to explain them on page 627 (September). His view, as now elucidated, simply reproduces the Pythagorean (di-tonic) tuning, and so makes the rival sects identical—a palpable absurdity.

The whole reply, on Ptolemy II., 11, is vitiated by Mr. Torr's failure to discriminate between the names by "position" and those by "power." I referred exclusively to the latter; Mr. Torr assumes the former. In every one of Ptolemy's scales in the chapter quoted, the ratios between notes of the same "power" are invariable.

As to Ptolemy II., 15, Table 7, my translation into notes is quite correct. Ptolemy mixes the Chromatic and Diatonic by taking one whole *tetrachord* from each. By doing the same with the notes of Alypius, I get the exact notational equivalent. Mr. Torr confuses Ptolemy's method of mixture with another quite different method, whereby the two *genera* are combined in the same *tetrachord*.

How Boëthius, in Mr. Torr's opinion, ought to have divided his string is irrelevant. He actually does divide it so as to make manifest that he regards it as a usual thing for the ancients to bring Δ and Γ to the same level of pitch. That is my point; by conceding this (as Mr. Torr is forced to do) he entirely contradicts his previous assertions.

To establish the accuracy of my reading of Aristides as against Mr. Torr's, I need only refer to the fac-simile Codices published by Bellermann and Albert Jahn, and to their critical remarks thereon. I state nothing that has not been established by these editors beyond all reasonable doubt. Considerable fresh light has been thrown on this matter since Meibom wrote.

For my date of Alypius I gave proper references.

As a brilliant piece of special pleading, or as a masterly strategic retreat under cover of a cloud of dust, Mr. Torr's letter commands my respectful admiration. But I cannot regard it as of any value as a serious rejoinder to my arguments.—Yours, &c.,

ERNEST BERGHOLT.

[We cannot spare further space for this discussion, and must now leave the matter to the impartial judgment of those of our readers who have followed it. For our own part, the more we look into Mr. Torr's theory, the more do we become convinced that it can be supported on no historical or scientific basis. Our readers will see by our review of Mr. Monro's "Modes of Ancient Greek Music" that the views we have maintained are, at any rate, in agreement with those of an acknowledged authority.—Ed., M.T.]

THE MUSIC HALL OF THE FUTURE.

TO THE EDITOR OF "THE MUSICAL TIMES."

SIR,—The excellent article in your last issue on the above subject is peculiarly *à propos* at a time when the pages of one of your daily contemporaries are filled with correspondence on the conduct of our public places of entertainment. The social side of this question does not, Sir, come within the province of your paper, nor would you, perhaps, wish it to do so, but the question of the entertainment and its conditions is doubtless of interest to your readers. I would suggest that the writer of your article should pay a visit to the Royal Victoria Hall one evening, where he will find that such a music hall, "where men can, and do, take their wives and daughters," already exists, at least, for the masses. I can only speak personally of the "Ballad nights," when I have seen the large theatre crammed with an enthusiastic audience, chiefly of the lower middle, and lower classes, and, "amid an atmosphere of decency and domesticity," give ear to good music. Looking through a number of old programmes, I can recall performances of violin pieces by Schubert, Mendelssohn, Żarzycki, Papini, Vieuxtemps, Wieniawski, Sarasate, and others; of ballads sung by some of our most eminent vocalists; and of glees sung by a quartet party. I have heard a movement of Mendelssohn's Violin Concerto enthusiastically applauded, and have noted the audience listening with profound attention to the recitation of such pieces as "Virginia," "Horatius," and scenes from Shakespeare given by reciters of established reputation. True, the Ballads were of the "tune" order, but they were at least wholesome, and most of them good, for the audience love the "old, old songs" best. The orchestra, which plays popular overtures, &c., at the beginning of each part, might be augmented and improved with advantage and would then, no doubt, be heard with greater attention than at present. Surely all this indicates that the people will listen to good things when provided. I am aware, of course, that such artists as I have heard would not appear at an ordinary music hall, and that their services could only be obtained on account of the philanthropic nature of the Institution, and their regard for its enthusiastic founder, Miss Emma Cons; but there are doubtless many young artists of smaller repute who would be glad to discourse good music before popular audiences for moderate fees. I have omitted to mention that both smoking and drinking—the latter non-alcoholic, as this is a temperance Institution—are permitted in certain parts of the theatre; but as the German enjoys his pipe and lager beer while listening to *Café Concerts* there is no reason why the Englishman should not have similar privileges. The obvious inference is that, given a reasonable amount of liberty—not license—"middle class" audiences will accept good and wholesome entertainments when offered them; and surely this is a better way of combating the difficulty—even in its social aspect—than all the puritanical tirades hurled against the present system—even as the great "drink" question is being solved better by the establishment of "coffee palaces" and the like than by the anathemas of intemperate teetotallers. Hoping, Sir, your contributor will adopt my suggestion and judge for himself.—I am, yours obediently,

MIDDLE CLASS.

October 21, 1894.

TO CORRESPONDENTS.

* * * Notices of concerts, of which programmes must invariably be sent, and other information supplied by our friends in the country, must be forwarded as early as possible after the occurrence; otherwise they cannot be inserted.

Our correspondents will oblige by writing all names as clearly as possible, as we cannot be responsible for any mistakes that may occur.

Correspondents are informed that their names and addresses must accompany all communications.

We cannot undertake to return offered contributions; the authors, therefore, will do well to retain copies.

Notice is sent to all subscribers whose payment (in advance) is exhausted.

The paper will be discontinued where the Subscription is not renewed. We again remind those who are disappointed in obtaining back numbers that, although the music is always kept in stock, only a sufficient quantity of the rest of the paper is printed to supply the current sale.

A. L. FILLINGHAM.—The subject is fully dealt with in Carl Engel's "Musical Myths and Facts" (2 Vols., Messrs. Novello, Ewer and Co.) and in Kastner's "Les Sirenes," the contents of which are briefly described in Novello's Library Catalogue, p. 410.

H. E. EARLE, BROOKLYN.—The Greek Hymns have been printed in various Histories of Music, but they have recently been published by Messrs. Novello, Ewer and Co., of whom they may be obtained for sixpence. No light has been thrown on the alleged passage in Saint-Saëns's work. The composer was probably hoaxed. The Interviews will be resumed when possible—they were not meant to appear regularly. We will reply to your other enquiry in our next.

YORK.—The Organists of York Minster during the last 150 years have been: J. Naylor, 1833; E. G. Monk, 1859; John Camidge, 1844; Matthew Camidge, 1803; John Camidge, 1756; J. Nares, 1734.

E. SOLA.—The poems by Hood, Moore, and Mrs. Hemans are no longer copyright.

BRIEF SUMMARY OF COUNTRY NEWS.

We do not hold ourselves responsible for any opinions expressed in this summary, as all the notices are either collated from the local papers or supplied to us by correspondents.

BOURNEMOUTH.—Two attractive Organ Recitals were given by Dr. W. Lemare, on the 10th ult., in St. Nathanael's Church, Westbourne. Dr. Lemare, whose pieces included a Festival Postlude by Volkmar and an Andante Religioso by Scharwenka, was assisted by Mr. E. C. Winslade, solo violin; Mr. F. C. Ford, violoncellist; the vocalists being Miss E. M. Lemare, Mr. Figgins, and members of the church choir.

BRIGHTON.—The Dome was well filled by an appreciative audience on the 18th ult., when the Sacred Harmonic Society gave a special performance of Gounod's "Redemption," in commemoration of the composer's death. The choir did its work with admirable precision, attention to gradation of tone and intelligent appreciation of the impressive nature of the music. The rendering of the majestic choruses "Forth the royal banners go" and "Unfold, ye portals everlasting," was in particular worthy of praise. Miss Annie Swinfen, who made her first appearance here on this occasion, gave sympathetic expression to the beautiful solo "From Thy love as a Father"; Miss Ada Watchurst also made a successful *début*, and Mrs. W. J. Mobsby and Miss Hilda Taylor, members of the Society, may be congratulated on their effective assistance. Mr. Boulcott Newth and Mr. Charles Phillips were the Narrators, and Mr. Charles Hinchliffe sang the words of *Jesús* with impressive effect. The orchestra was admirably led by Mr. W. A. Baker, Mr. P. J. Starnes presided at the organ with artistic judgment, and Mr. Robert Taylor conducted with his customary ability.—An audience of about 2,000 assembled in the Dome, on the 22nd ult., to hear Dr. Richter's Orchestral Concert. Concerning the programme, the Prelude to "Parsifal" and Brahms's Orchestral Variations had never been performed in Brighton before, nor had, we believe, the arrangement of Liszt's Rhapsodie Hongroise (No. 1). Even so hackneyed a piece as the "Walkürenritt" had only been played in Brighton once—viz., when Richter brought his orchestra some years ago. The audience was, throughout, most enthusiastic, and made a very determined attempt to encore the "Walkürenritt," which Dr. Richter steadily resisted and finally defeated. A pamphlet had previously been circulated by Messrs. Chester, which contained an account, written by Mr. H. Davey, of the various works performed; and very general interest had been excited in the Concert, which was set forth as a great and quite exceptional musical opportunity.