

## SIGNATURES AND CADENCES OF THE BYZANTINE MODES.

### FIRST STUDY.

#### 1. *Recent Works on Byzantine Music.*

THE output of books and articles dealing with Byzantine music has in the last few years been small. Dr. Wellesz<sup>1</sup> has written a valuable summary of information not only on Greek, but also on Armenian and other Eastern ecclesiastical music. Prof. Psachos<sup>2</sup> of Athens has tried to revive the so-called Stenographic Theory of the Neumes, which was current in the time of Chrysanthus. But, although his reputation as a musical investigator stands deservedly high, it seems very unlikely that Western scholars will accept the theory on the evidence afforded. In Dom Jeannin's introductory volume on Syrian music there is a good deal of information on the Byzantine system. Most important is his account of certain phonographic experiments made by Père Thibaut on the Modern Greek modes, proving these, where untouched by recent Western influence, to be identical with some of the Turkish scales.<sup>3</sup> We must therefore recognise in England (as continental writers have long done) that the modern or Chrysanthine system is mainly Oriental and that its connection with the mediaeval modes is quite remote. In other words, Byzantine music is not a thing that any Greek cantor could teach us or a gramophone-record make intelligible.<sup>4</sup> Lastly, an article by C. Höeg of Copenhagen throws light on the origins of Byzantine

<sup>1</sup> E. Wellesz, *Aufgaben u. Probleme auf d. Gebiet d. Byz. u. orient. Kirchenmus.* (My review in *Byz. Zeitschr.* xxv. 376.)

<sup>2</sup> Ἡ Παρασημαντικὴ τῆς Βυζαντινῆς Μουσικῆς. (Athens, 1917.) (See my discussion of the theory in *Laudate*, Dec. 1924, p. 214.)

<sup>3</sup> This I have already tried to prove on general grounds in *B.S.A.* xxii. 147.

<sup>4</sup> I have attempted an appreciation of Dom Jeannin's book, *Mémoires Liturgiques Syriennes et Chaldéennes* (Paris, 1925) in *Laudate*, Sept. 1925, p. 143. The notion current in England that the Modern Greek system is the true and only Byzantine music was fostered by S. G. Hatherly's *Treatise on Byz. Music*, which deals almost entirely with the modern system. There seems to be no doubt that in the Middle Ages the Byzantine and Gregorian modes used the same intervals. The best authorities hold that the earliest Jewish and Syrian melodies were also diatonic.

musical theory,<sup>1</sup> which appears to have grown up within the Roman Empire, probably in Egypt or Syria, as a popular system, less abstruse than that of classical times.

## 2. *The Problem of the Signatures.*

It will be seen that only one of the writers mentioned has contributed much to the decipherment of the musical notation; and one reason may be that the guidance so far available does not always surmount the difficulties even of the familiar Round system. Indeed we still lack an answer in many instances to the first question that confronts us—from what note is the melody to begin? <sup>2</sup>

Byzantine music has eight modes; and every mode has a certain note, called Finalis, on which a melody in that mode is expected to end. The Finalis is also regarded as the starting-point for the chain of intervals forming the melody. Further, we find in the mediaeval handbooks that every mode has a Martyria or Signature, which is not only used initially, but also at medial cadences to help the singer. Thus in Mode I we should find the signature (ἦχος α', for *a*) at the beginning; and later on, if a pause had to be made on, say *f*, we might mark this with the signature of the Third Plagal Mode, called ἦχος βαρύς; if on *c'*, with that of the Third Authentic Mode, and so on.

Unfortunately the matter is not always so simple. For, on looking through a MS. of the golden age of Byzantine Hymnody (thirteenth to fourteenth centuries), we notice a far greater variety of signatures than the eight modes seem to require. Trial very soon shows that not every hymn takes its departure from the recognised Finalis of the mode indicated. It is, however, quite possible to collect examples of most of the signatures; and when these are interpreted, the main difficulty will disappear. In the present state of our knowledge the discussion of

<sup>1</sup> *Revue des Études grecques*, tome xxv. No. 162, p. 321.

<sup>2</sup> A reader unfamiliar with the subject is advised to look at my article in *B.S.A.* xxii. 133 (*The Modes of Byz. Music*); and I may also refer to my little book, *Byz. Music and Hymnography*, for a general account. The best introduction to the subject is O. Fleischer, *Neumenstudien*, T. III. The table of signatures given by Gastoué (Am.), *Introduction à la Paléographie Mus. Byz.*, p. 25, is hardly adequate. Nor is Riemann's view of them (*Die byz. Notenschrift*, p. 5) altogether correct. For the palaeographical development of the notation much valuable material will be found in J. Thibaut, *Monuments de la Notation Ekphonétique et Hagiopolite*, etc., and in *Exempla Codicum Graecorum*, vol. alterum, edd. Georgius Cereteli et Sergius Sobolevski. But few of the facsimiles in these books are clear enough to help us much in our present study.

faint or partially illegible passages is a profitless undertaking. It is far better to search for clear texts of all extant hymns and by their aid, if need be, to verify doubtful readings. I was fortunate, therefore, in being able to visit the Monastery of Grottaferrata in the spring of 1922, and again in 1925, when by the kind permission of the Father Abbot I took a large number of photographs of several musical codices. Grottaferrata library is richly favoured; for there can be few musical manuscripts clearer or more complete than the thirteenth-century *Hirmologus* in the Round Notation numbered E. γ. II. It contains many odes of which even the words are not found in print, while of the melodies (except for the small extract given by Prof. Riemann<sup>1</sup>) no use has been made since the Middle Ages. The investigator breaks new ground at every step. The Neumes are in the Round or Hagiopolitan system of the best period; and their transcription is, on the whole, a simple matter. This codex is the basis of our present study.

*Mode I.* If we look at the signature or Martyria of this mode, we see that it consists of a stylised alpha (like the figure 9) surmounted by two commas and followed by the sign of an ascending fifth (Oxeia, Hypsele) (Fig. 1). The commas are not the Double Apostrophus, but they simply represent the old half-circle used in the older notation above the signature ( $\hat{a}$ ,  $\hat{b}$ , etc.). They have therefore no musical value. Theorists agree that Mode I is the scale  $d-d'$ ; and the presence of the upward fifth suggests that  $a$  is the point of departure for the melody. This assumption works out perfectly well. Most hymns, when taken from  $a$ , return to it, while a few end on  $d$ . I know one example that begins from  $d$  and ends on  $a$ .<sup>2</sup> In late MSS. we find  $d$  as the usual starting-point and Finalis, as also in the modern or Chrysanthine system. The plain signature  $\vartheta$  is used chiefly at medial cadences, for  $a$  or  $d$ . Of all modes, the First Authentic is the easiest and simplest. This may be why the vast majority of the examples of Byzantine music so far published are in that mode. Thus in Fleischer's great work there are at least twenty-seven pages of versions in Mode I, about four pages in Mode II, and only short passages in the others.<sup>3</sup>

<sup>1</sup> *Die byz. Notenschrift*, Pl. VIII. See also *B.S.A.* xxi. 138 ff. I have given a reproduction of another page, with the interpretation, in *Byz. Zeitschr.* xxiii. 326.

<sup>2</sup> Cod. Cryptoferr. E. γ. II. f. 8 b, Ode VI.

<sup>3</sup> O. Fleischer, *Neumenstudien*, T. III. Fleischer is the master and leader of us all in musical palaeography.

A frequent cadence is *ga, a, a*. We also find *fe, d, d* (or *c'baa*), *f, d, d* (or *c', a, a*) commonly in this and in other MSS., rarely *c'ba* or *gba*.

*Mode II.* According to mediaeval theory, this mode begins one note above Mode I, that is to say, on *b*-natural (or *h*). But examples show that *g* was also taken as a starting-point and bears the plain signature of a cursive beta and two commas (No. 1 in Fig. 1). The addition of Oxeia, Kentemata (two seconds upwards) indicates a start from *b* (No. 2 in diagram).<sup>1</sup> Both forms use the same cadential formulae and both usually end on *e*. The inner cadences and structure are alike. There can, therefore, be no question of a different scale, but only of a different initial intonation. This matter will be discussed later on.

In the MS., Cryptoferratensis E. Γ, II. I have read twenty-one Hirmi in this mode. Of these, fourteen have the *b*-signature (No. 2) and all but one work out right. Six have the *g*-signature and read correctly. One has the sign of an ascending second (No. 3). This points to *a* as the starting-note, and the result confirms it. The fourth form of the signature occurs in the Athos MS., Vatopedi 288, f. 368b (date about 1290). Here the formula seems to read *b, a, g* (from *b*: Oxeia annulled by Ison). Two fairly probable examples occur on that page. The use of *g* in Mode II is paralleled by the practice of modern times, although the Chrysanthine scale is purely Oriental. Possibly the confusion arose from the idea that Mode II was midway between Mode I (*a*) and Mode III (*f* or *c'*), which would give either note.

The cadences observed are (*a*) *g, fe, (e), fg, gf, e; fgfe* (rare); *ac' b, b; d' c' b b* (rare).

*Mode III.* The proper starting-note is *c'* (No. 1 in diagram), but *a* is also admitted. It will be seen that the signature for *a* (No. 2) is quite conventional: the half-circle has become a stroke. I have read five clear examples from *c'* in our MS. Of six Hirmi with the *a*-signature one is doubtful, but five succeed. The rare signature No. 4 indicates *c'*. No. 3 occurs in the Trinity MS. (Cambridge) 1165<sup>2</sup> and probably denotes *a*. The signature like two question-marks (short for *nana*) is used medially

<sup>1</sup> A late and still more stylised form of this signature will be found in Fleischer, *op. cit.* Transcriptions, pp. 40, 41.

<sup>2</sup> For this MS. cf. *B.S.A.* xxiii. 201. CORRECTION, *ibidem*, p. 200. The MS. *Gouv. et Cai.* 772 plus 815, belongs to the eighteenth (not seventeenth) century.

Mode I.  $\overset{\text{v}}{\underset{\text{v}}{\text{g}}}-$  Mode II. 1.  $\overset{\text{v}}{\underset{\text{v}}{\text{y}}}$  2.  $\overset{\text{v}}{\underset{\text{v}}{\text{y}}}/$  3.  $\overset{\text{v}}{\underset{\text{v}}{\text{y}}}-$   
4.  $\overset{\text{v}}{\underset{\text{v}}{\text{y}}}/\text{v}$

Mode III. 1.  $\text{r}\text{v}$  2.  $\text{r}-\text{v}$  3.  $\text{r}\text{v}$   
4.  $\text{r}-\text{v}-\text{v}$

Mode IV.  $\overset{\text{v}}{\underset{\text{v}}{\text{g}}}-$  Mode I, Plagal 1.  $\overset{\text{v}}{\underset{\text{v}}{\text{g}}}$  2.  $\overset{\text{v}}{\underset{\text{v}}{\text{g}}}-$

Mode II Pl. 1.  $\overset{\text{v}}{\underset{\text{v}}{\text{g}}}$  2.  $\overset{\text{v}}{\underset{\text{v}}{\text{g}}}/$  3.  $\overset{\text{v}}{\underset{\text{v}}{\text{g}}}\text{v}\text{v}$   
4.  $\overset{\text{v}}{\underset{\text{v}}{\text{g}}}\text{v}$

Mode III Pl. 1.  $\text{v}\text{v}$  2.  $\text{v}\text{v}/$  3.  $\text{v}\text{v}\text{v}$

Mode IV Pl. 1.  $\overset{\text{v}}{\underset{\text{v}}{\text{g}}}\text{v}$  2.  $\overset{\text{v}}{\underset{\text{v}}{\text{g}}}\text{v}$

3.  $\overset{\text{v}}{\underset{\text{v}}{\text{g}}}\text{v}\text{v}$  4.  $\overset{\text{v}}{\underset{\text{v}}{\text{g}}}\text{v}\text{v}$

5.  $\overset{\text{v}}{\underset{\text{v}}{\text{g}}}\text{v}\text{v}$  6.  $\overset{\text{v}}{\underset{\text{v}}{\text{g}}}\text{v}\text{v}$

FIG. I.—SIGNATURES OR MARTYRIAE OF THE BYZANTINE MODES IN THE ROUND NOTATION.

in some MSS. for *f* and *c'*, the finals of this mode, but initially only in late MSS., as also in the Chrysanthine system (Finalis *f*).

Cadences : *a g f f*; *ga c' c'* (rare); *e' d' c' c'* (rare); *ga a f* (rare).

*Mode IV.* The signature is analogous to that of Mode I; and no by-forms occur. The question of pitch is more perplexing. Where the melody regains its starting-note at the end of the piece, the note *g* (rather than *d'*) gives the best result. But if it ends a fifth *above* its first note, we should be tempted to begin the tune on *c*, borrowing *b*-flat from the Fourth Plagal.<sup>1</sup> It is not unlikely (owing to the position of this mode at the top of the scale) that alternative forms were allowed, a high voice taking *d'*, *g* as the Finals, and a low voice *g*, *c*. The compass would be *g-a'* and *c-d'* (rarely *b'* or *e'*) in the two cases. A feature of this mode is a frequent leap of a fifth upwards or downwards, near the beginning.

Cadences : *b a g (g)*; *b, g, g* (or *f' e' d' d'* and *f', d', d'*). The Trinity Hirmologus (1165, O. 2, 61) also has *g a g g*.

*Mode I, Plagal.* The normal and usual starting-note is *d*. This is shown by signature No. 1, which stands for  $\pi\lambda\acute{\alpha}\gamma\iota\omicron\varsigma$  *a'*. Of this I have read fifteen specimens in our MS., all correct. The second form seems to require *g* (ascending fourth in the signature), but more evidence is needed to establish it : only two examples noted, and one of these doubtful. The use of *a* as initial-note and Finalis, or both, is seen in the Trinity Hirmologus.<sup>2</sup>

Cadences : *f d d*; *f e d (d)*. The scale is *d-d'* with *b*-flat.

*Mode II, Plagal.* This mode has the scale *e-e'* with *B*-flat. It has the following initial notes (*vide* diagram).

No. 1 = *e*. Fifteen clear examples in our MS. have been transcribed and no doubtful case has been found. This is the normal type.<sup>3</sup>

No. 2 = *g*. This is rare : we found two clear examples and one doubtful.

No. 3 = *a*. As will be seen, this formula contains three ascending seconds and the Martyria of Mode III. Evidently the notes *ef, g, a* were to be intoned. We have deciphered fourteen clear specimens of hymns with this beginning, while only four were doubtful. The type may be therefore safely admitted.

<sup>1</sup> I have done this in *B.S.A.* xxi. 143. The result seems satisfactory to the ear.

<sup>2</sup> See f. 67b. The cadence there is *b a g a*. There is a doubtful signature in Cod. Ambros. 733, f. 320b (Milan), giving the formula *c B d e*, where the text is otherwise uncertain.

<sup>3</sup> A good example, also clear, in Cereteli, *op. cit.* xxix. (date 1292).

No. 4 = *f*. Three clear examples and one doubtful have been discovered in our MS.<sup>1</sup>

Cadences : the progression (*a*)*gfee* seems to be almost invariable in our MS. : it occurs also in the Trinity Sticherarium (256).

*Mode III, Plagal or Barys*. This mode in our MS. and apparently in all Hirmological music<sup>2</sup> (that is, in *Canons*) does not begin from low *B*-flat (as its name might suggest), but usually from *f*. It answers to our *f*-major scale. The signatures all contain an abbreviation of *βαρύς* : they are :—

No. 1 = *f* (the stroke is purely conventional). Thirty-six clear specimens have been deciphered in our MS. : six fail, but can easily be emended.

No. 2 = *a* (two ascending seconds added to No. 1). Three clear, one doubtful.

No. 3 is uncertain : it occurs but once and the text is partly obscure.

Cadences : (*c' g*) *a, gf, f*; also *gaaf* (once only).

*Mode IV, Plagal*. This mode, although its theoretical Finalis is *c*, nearly always appears in its transposed form (like the other plagal modes) and uses *g* for its initial note, requiring *B*-flat. It allows, however, more variety than any other mode; and we have traced the following types, while other MSS. might be able to augment the list :—

No. 1 = *g*. This is the standard form. From our photographs we have deciphered twenty-three odes correctly, while four were doubtful.

No. 2 = *a*. The Martyria gives the formula *gaa*, with prolongation of *g*. We have read eight clear examples in our MS., and another, also clear in the Milan MS., Ambros. 733, f. 247.

No. 3 = *a*. The formula is *g, a*, both long. Three clear examples read.

No. 4 = *c'*. The formula contains the Martyria of Mode III and points to the phrase *gc'c'*. Four clear and two doubtful examples. There is reason for thinking that this was a recognised by-form, called

<sup>1</sup> A clear example in Cod. Ambros. 733, f. 310b. Another in the Trinity Sticherarium, 256, f. 16. For the latter MS. see *B.S.A.* xxiii. 201.

<sup>2</sup> Hirmological music is the least florid. Next comes Sticherarical and finally Papadical, which is highly ornate and admits all kinds of meaningless vocalisations. In this last species Mode III, Pl. seems to use *B*-flat as a starting-note. The Chrysanthine system has preserved the form from *f* and the low form, the intervals, however, being much confused.

*Na-Na*, intermediate between Mode III and IV, Pl. It probably used *b*-natural (*h*) except when approaching a cadence.

No. 5 = *c'*. Formula *gc'bc'*. Three clear and two doubtful examples. This type is probably similar to No. 4.

No. 6 = *e*. Formula *gefe*. One clear and one doubtful specimen.<sup>1</sup>

Cadences : (*c'*) *bag(g)* most frequent, whatever be the initial formula; also *c'a gg(g)* and *gaggg* (rare).

In choosing hymns for study, we have naturally sought out specimens of the rarer signatures, so that the information tabulated above is more exhaustive than the mere numbers might suggest. Many of the failures are probably due to mistakes in the MS., for no scribe is faultless. Space does not allow us to set out all the results derived from other MSS., but these on the whole bear out the conclusions that we have reached. We have, of course, not exhibited all the known forms of signature, especially those used at medial cadences. But the ordinary types, as illustrated in our diagram and explained above, will enable the student, given clear text, to read at least eighty per cent. of the hymns extant in the Round Notation. We now ask : whence came the diversity of signature?

### 3. *The Initial Formulae of the Modes.*

It is well known that every mode was designated in the Middle Ages by a certain syllabic formula, like *Ananes*, *Neanes*, or the like.<sup>2</sup> These are usually called ἡχήματα; and for an English term we suggest 'Invocation.' The use of these formulae is explained in the mediaeval handbook attributed to Hagiopolites,<sup>3</sup> where we read as follows :—' When we are about to sing or to teach, we must begin with a vocal exercise (ἐνήχημα). For the vocal exercise is the laying-on (ἐπιβολή) of the mode; as if I should say *Ana-ne-anes*, which is "O King, forgive." For the

<sup>1</sup> Cod. Ambros. 733, f. 310b gives a formula *ggef*, which works out right, the text, however, not being absolutely clear.

<sup>2</sup> See Fleischer, *op. cit.* pp. 37, 42, 47, and Transcr. pp. 1-7; Chrysanthus, Θεωρητικὸν μέγα τῆς Μουσικῆς § 307; Rebours, *Traité de Psaltique*, p. 280 ff.; Gastoué, *Introd. à la Paléogr. Mus. Byz.* 29; *B.S.A.* xxii. 137. The names ἡχημα, ἐνήχημα, ἀπήχημα seem to be interchangeable.

<sup>3</sup> Thibaut, *Monuments*, p. 57. The first mention of the system of Eight Modes in the East is in 513 (*ibid.* p. 19). The West adopted it in the ninth century (*Bede*, †. 735, and Roswitha, c. 950, write on music, but do not mention the Eight Modes). Alcuin, †. 804, seems to be the first Western writer who knows them. (See Fleischer, *op. cit.* p. 41.)



beginning of all things ought to originate in God and the end to be with God.'

The last phrase does not mean that the Invocation was repeated after the hymn. Our author is merely uttering a pious sentiment—and with truth, for Byzantine hymns as a rule end either with a Doxology or with a prayer for the souls of the worshippers. We can well conceive that, if it was usual to sing certain notes before the beginning of the hymn, an accomplished singer might vary the formula; and in fact we find in some MSS. only short Invocations, but elsewhere elaborate florid passages. One or two examples may be quoted:—

Thus for Mode II the Ambrosian MS.<sup>1</sup> has simply

$$\begin{array}{c} b \ a \ g \ a \ b \\ \nu \epsilon \ a \ \nu \epsilon \varsigma \ -- \end{array}$$

The Sticherarium, Cryptoferr. E. *a*, II, has

$$\begin{array}{c} g \quad ab \quad bc' \quad ba \quad g \quad g \quad ab \quad a \quad g \quad a \quad b \\ \nu \epsilon - a - \nu \epsilon - a - \nu \epsilon - a - \nu \epsilon - - \epsilon - \epsilon - \\ \\ ba \quad b \ a \quad gab \\ \nu \epsilon - \nu \epsilon \ a - \nu \epsilon \varsigma \ -- \end{array}$$

A later hand has added in the margin the ordinary Martyria for Mode II (*gab*).

For Mode IV the Ambrosian gives

$$\begin{array}{c} gfe \ d \ - \ c \ d \ e \ f \ g \\ a - \gamma \iota - a \ . \ . \ . \ . \end{array}$$

And Cryptoferratensis:

$$\begin{array}{c} g \quad c \quad ef \ gfe \ agf \ ed \ c \ g \\ a - a - a - a - a - \gamma \iota - a - a \end{array}$$

The plain signature again is added in the margin. The later scribe evidently found these long formulae too complicated and wished to imply that a simpler Invocation would do.

We now suggest that in these Invocations is found one clue to the mystery of the varied signatures of the eight modes: that, as the singer's art in the thirteenth and fourteenth centuries made a diversity of formulae

<sup>1</sup> I hope to give a fuller account of this MS. in *J.H.S.* 1926, Pt. II. For other Invocations see *B.S.A.* xxii. 137. Rebours, *l.c.*, has transcribed the formulae given as mediaeval by Chrysanthus, who with perfect candour admits that they did not agree with the practice of his own time.

possible, the signature indicated the general nature of the introductory flourish. A modest cantor would be satisfied with the notes before him, while a virtuoso might embroider a vocal passage taking a minute or more in performance.

But this is only half the answer. We still do not know why, for instance, the Second Mode began sometimes from *g* and not always from *b*, its proper starting-note. With the exact intervals of the Round Notation there was no practical utility in the retention of both types. Can it have been a survival? Before the eight modes were adopted there must have been many hymns extant that did not fit into the scheme. It seems that these were sorted out by modes according to their final notes. This we may safely infer from the comparative uniformity of the cadences in the several modes—the cadence not varying with the variations of the initial Martyria. But before the Neumes had gained their exact values,<sup>1</sup> some aid to memory would have been very helpful in guiding the singer to his first note. And such we may conjecture to have been one use of the Invocation. Unfortunately we cannot supply the proofs; but still a certain probability can be claimed. For although the earliest MSS. never add any interval-signs to the letter indicating the number of the mode, yet in the Coislin system (the last stage before the Round Notation) such signs occur;<sup>2</sup> and in our opinion they point to the use of initial formulae. We cannot, however, decide whether such formulae had existed from the beginning, and were remembered, though unwritten (like many interval-values even in the hymns themselves), or were only invented in the thirteenth century, when the Round Notation was beginning to oust the Linear. Until the earlier Neumes have been properly read, we cannot speak with assurance about anything older than 1250, but it seems not unlikely that singers used, in the manner suggested above, the syllabic formulae current already in the ninth century and recognised as indispensable adjuncts to ecclesiastical music.

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<sup>1</sup> The older Neumes, sometimes called Linear or Constantinopolitan (also Palaeobyzantine), only gave a general indication of the course of the melody. (This view, which I put forward in *J.H.S.* xli. 29, is in agreement with the opinions of Wellesz and apparently of Thibaut.) The early notation belongs to the years A.D. 1000–1250.

<sup>2</sup> E.g. in the MS. Sinaiticus 1214. The name of this notation is taken from the MS. at Paris, Coislin 220, which is the most famous example of it. (Facs. in Riemann, *op. cit.* Pl. IV.)