

# THE MUSICAL INSCRIPTION FROM EPIDAUROS

(PLATE 14)

AN INSCRIPTION of the Imperial period which may add substantially to our understanding of ancient Greek music, *SEG XXX*, 390, was excavated northeast of the palaistra at Epidauros in July, 1977. M. Mitsos published its text in 1980, printing the presumed musical notation without commentary.<sup>1</sup> In 1982 S. Sepheriades presented an interpretation of the notation based on Pythagorean principles.<sup>2</sup> In a paper delivered the following year, J. Solomon offered another analysis of the musical notation, which he has now published.<sup>3</sup> The inscription has more recently been the subject of an article by M. L. West in which he responds to Solomon's proposed interpretation of the musical notation and discusses its contribution to our knowledge of how hexameters were sung.<sup>4</sup> In this article I shall first present my arguments for assigning *SEG XXX*, 390 to the same inscription as *IG IV*<sup>2</sup> 1, 135, followed by my text and commentary. I shall then propose yet another interpretation of the musical notation, which I take to be a kind of musical shorthand.

## THE FRAGMENTS

*SEG XXX*, 390 contains eleven fragmentary lines of a hymn to Apollo and probably also to the Muses.<sup>5</sup> The top and right-hand edges are extant. *IG IV*<sup>2</sup> 1, 135 was first published by C. Blinkenberg in 1894.<sup>6</sup> It was subsequently published by M. Fraenkel as *IG IV*, 1185

<sup>1</sup> M. Mitsos, «Ἱερὸς ὕμνος ἐξ Ἀσκληπείου Ἐπιδαύρου», Ἀρχ'Εφ 1980, pp. 212–216 (= Mitsos); *SEG XXX*, 390, edited by R. Stroud (1980).

Other works frequently cited are abbreviated as follows:

AnonBell = *Anonymus Bellerman*, D. Najock, ed., *Drei anonyme Traktate über die Musik*, Göttingen 1972

Blinkenberg = C. Blinkenberg, *Asklepios og hans Fraender*, I, *Hieron ved Epidauros*, Copenhagen 1894

*H. Orph.* = *Orphei hymni*, W. Quandt, ed., 3rd ed., Berlin 1962, repr. 1973

Jan = K. von Jan, ed., *Musici scriptores graeci*, Leipzig 1895, repr. Hildesheim 1962

Sepheriades = S. Sepheriades, «Ἱερὸς ὕμνος ἐξ Ἀσκληπείου Ἐπιδαύρου», *Eighth International Congress on Greek and Latin Epigraphy*, Athens 1982, Ἀνακοινώσεις, pp. 156–159

Solomon = J. Solomon, "The New Musical Fragment from Epidauros," *JHS* 105, 1985, pp. 168–171

West = M. L. West, "The Singing of Hexameters: Evidence from Epidauros," *ZPE* 63, 1986, pp. 39–46

<sup>2</sup> Sepheriades. I thank Lucy Meritt for making an abstract of this paper available to me. The second and third volumes of the *Proceedings* have not yet appeared in print, and so I have been unable to consult the full text of Sepheriades' paper.

<sup>3</sup> Solomon. The abstract of his paper, which was read at the Annual Meeting of the Archaeological Institute of America, Cincinnati, 1983, is printed in *AJA* 88, 1984, p. 261.

<sup>4</sup> West.

<sup>5</sup> For the Muses, see line 11. Mitsos restored references to the Muses in both line 7 and line 8. To his comparanda (Solon fr. 13 West and Krates fr. 1 Diehl [= H. Lloyd-Jones and P. Parsons, *Supplementum Hellenisticum*, Berlin 1983, no. 359]) add the similar *H. Orph.* 76 Quandt and *IG XII* 7, 95 of Imperial date, from Amorgos. That the Muses were significant at Epidauros in the Imperial period is attested by a shrine to them in the upper sanctuary of Apollo Maleatas; see Ἔργον 1983, pp. 59–64.

<sup>6</sup> Blinkenberg, no. 15, p. 126. Blinkenberg's reading also appears in J. Baunack, "Zu den Inschriften aus Epidauros," *Philologus* 54, 1895 (pp. 16–63), p. 19, no. 7.

and, with revisions, by F. Hiller von Gaertringen as *IG IV*<sup>2</sup> 1, 135. It consists of two small stones (Fragments I and II), each of which is made up of six incomplete lines. In both fragments the bottom edge is extant, as is the left margin of Fragment I. This fragment refers to several members of Asklepios' "family": Iaso, Akeso, and Hygieia. Fragment II is addressed to Apollo Maleatas and possibly also Asklepios, according to the restoration made by Fraenkel.

There are both epigraphical and stylistic reasons for assigning *SEG XXX*, 390 to the same inscription as the two fragments of *IG IV*<sup>2</sup> 1, 135. The findspots are, unfortunately, irrelevant, since all that is known about no. 135 is that the fragments were found in the "hieron". The two inscriptions are on the same type of dark red stone.<sup>7</sup> The three fragments have all been sheared off so that the original back surface does not survive. It is therefore uncertain whether the stones were part of a stele or a block. That the latter is more likely is suggested by the similarity to *IG IV*<sup>2</sup> 1, 132–134, which consist of three hymns on the same red stone and inscribed on what is certainly a building block. The preserved top edge of *SEG XXX*, 390 has anathyrosis, the stippling beginning *ca.* 0.010–0.011 m. from the front edge. The preserved bottom edges of no. 135 are worked in a similar manner but with a broader smooth band, *ca.* 0.030 m.

There is no reason to doubt that all three fragments were inscribed by the same mason, who also inscribed *IG IV*<sup>2</sup> 1, 132–134.<sup>8</sup> The letter forms and sizes are identical. Moreover, the same diacritical mark is used in both inscriptions, perhaps to indicate diaeresis or rough breathing.<sup>9</sup> The fragments are also metrically compatible since both *SEG XXX*, 390 and no. 135, unlike the other Epidaurian hymns, were composed in dactylic hexameters. The content of the fragments argues further for a connection between them: *SEG XXX*, 390 is a hymn to Apollo, *IG IV*<sup>2</sup> 1, 135, Fragment I is addressed to Asklepios and Fragment II to Apollo Maleatas.

Although there are not enough edges extant to be certain, the precedent of the Epidaurian hymns<sup>10</sup> suggests that *SEG XXX*, 390 and *IG IV*<sup>2</sup> 1, 135 were probably also arranged in two columns. Fragment I would thus provide the left margin and bottom edge of the first column, while *SEG XXX*, 390 preserves the top edge of the second column as well as the right edge of the inscription. Fragment II, in which neither of the side edges is extant, completes the second column with the bottom edge. With this arrangement, the fact that *SEG XXX*, 390 is in all probability the beginning of a hymn indicates that there were at least two hymns in this inscription: one to Asklepios in the first column and one to Apollo (and Asklepios?) in the second. It is also possible that the second column contained either two different hymns to Apollo, the first to Apollo Mousagetes and the second to Apollo Maleatas, or a hymn to Apollo followed by one to Apollo and Asklepios. In favor of the latter

<sup>7</sup> The editors call it limestone; it is not, however, the same as the common local pink limestone.

<sup>8</sup> See below, commentary on *SEG XXX*, 390, line 1, letter 10.

<sup>9</sup> See below, commentary on *IG IV*<sup>2</sup> 1, 135, Fragment II, line 4.

<sup>10</sup> *IG IV*<sup>2</sup> 1, 132–134, which have already been mentioned, contain hymns to Hygieia, Asklepios, and Pallas. *IG IV*<sup>2</sup> 1, 129–131 contain hymns to All Gods, Pan, and the Mother of the Gods.

interpretation, the seemingly incongruous presence of the Muse at the end of the hymn to Asklepios (M[όσ]α, Fragment I, line 6) may be explained as a transition to the first hymn in the second column, addressed to Apollo and the Muses.<sup>11</sup> The first line of *SEG XXX*, 390, which contains the musical notation, might well have extended across the entire inscription so that the music designated by it applied to all the hymns on the stone.

*SEG XXX*, 390

H. 0.13 m., W. 0.15 m., Th. 0.04 m.

*IG IV*<sup>2</sup> 1, 135, Fragment I

H. 0.07 m., W. 0.22 m., Th. 0.05 m.

*IG IV*<sup>2</sup> 1, 135, Fragment II

H. 0.105 m., W. 0.21 m., Th. 0.05 m.

*SEG XXX*, 390

- 1 [-----]εν Ἀ Ζ Θ Ἦ = Ἀ ἐν αὐ[ιδῇ]
- [lacuna of ca. 18–25 lines]
- [-----]θ[ε]ὸν αἰείσωμεν
- [-----] ἀνθρώποισιν
- [-----] Ἀπόλλω]νι κλυτοτόξῳ
- 5 [-----]ως δὲ σ' αἰείσω
- [-----] ἐπίστα]μένως καταλέξαι.
- [Μναμοσύνας καὶ Ζηνὸς Ὀλυμπί]ον ἀγλαὰ τέκνα
- [-----]ς ὕμνος αἰοιδῆς
- [-----]τον δέ σοι ἦτ[ορ]
- 10 [-----] οὕνεκα π[-----]
- [-----] ΜΟ [-----]

[lacuna of ca. 5–12 lines]

*IG IV*<sup>2</sup> 1, 135, Fragment I

*IG IV*<sup>2</sup> 1, 135, Fragment II

- 1 [. . .<sup>6</sup> . . .] κ ἰητ[ηρι] -----]
- [κα]λὴν ἡύκομ[ον] -----]
- ἄδ' ἱάσῳ Ἀκεσώ τε [-----]
- αὔθις δ' αὔθ' ὕγείαν εἰς | / [-----]
- 5 ἀλλὰ σὺ μὲν τούτοις φρένα [-----]
- ἡμετέρηι δὴ Μ[όσ]α, ἐ[πεί] ΧΑ [-----]
- 1 [-----] \ [-----]
- [-----] Μ]αλεατ[as] -----]
- [-----] τ]ῆς δὲ σ[-----]
- [-----] σ]ι θεαὶ ἱερο[-----]
- 5 [-----] | εὐχῆς ἰλα[οῦ] -----]
- [-----]ς εὐμένους | | / [-----]
- [Ἀσκληπιῶ καὶ Ἀπόλ]λωνι Ἦ οἰκουμένης [-]
- [-----] τρις

<sup>11</sup> I assume here that the three hymns were composed by a single poet who wrote them as an ensemble or that a compiler chose them with thematic compatibility in mind. Cf., e.g., *IG IV*<sup>2</sup> 1, 129–131, which share themes and language.

IG IV<sup>2</sup> 1, 135, Fragment I<sup>12</sup>

Line 1. IH Blinkenberg; IHΠ Fraenkel; IHT Hiller von Gaertringen. Fraenkel prints pi and restores Π[αίδυ] even though his own drawing as well as the stone clearly identifies the letter as tau. Peek restores [ῥ' δ' ἔτε]κ' ἰητ[ῆρι].<sup>13</sup>

Line 2. Although Fraenkel bracketed them, traces of both the initial lambda and the final mu are evident on the stone. Blinkenberg did not read them. Hiller von Gaertringen dots the kappa even though it is clear enough on the stone and in the drawings of the earlier editors. The restorations are those of Fraenkel.

Line 3. The oblique stroke preceding the delta suggests alpha, not eta as read by all the editors.

Line 5. Of the final dotted alpha, the bottom of the left oblique is extant.

Line 6. After the first lacuna (a chip in the stone), only the right oblique of the dotted alpha is visible. I prefer M[όσ]α to Hiller's M[ούσ]α because the size of the lacuna suggests two rather than three missing letters. Both spellings are attested at Epidauros.<sup>14</sup>

## SEG XXX, 390

Line 1. Letter 3.  $\bar{A}$  Mitsos, Sepheriades, Solomon;  $\bar{\Delta}$  West. West's emendation is made on purely musical grounds.<sup>15</sup>

Letter 5.  $\bar{\Theta}$  Mitsos;  $\bar{\Theta}$  Solomon, followed by West. This emendation is also based on musical, not epigraphical, considerations.<sup>16</sup>

Letter 6.  $\bar{\Xi}$  Mitsos;  $\bar{\Gamma}$  Stroud;  $\bar{E}$  Sepheriades, Solomon, West. West cites letter 1 of this line as a comparandum; however, that letter is by no means "noticeably square"<sup>17</sup> but is in fact rounded like the other epsilons in the inscription, a fact which the broken edge of the stone obscures in Mitsos' photograph. I interpret this letter as a gamma with a diseme<sup>18</sup> followed by =, which I take as a punctuation mark.

Letter 7.  $\bar{\Lambda}$  Mitsos, followed by Solomon and West;  $\bar{\Lambda}$  Sepheriades. Neither the stone nor the squeeze confirms the presence of the upper horizontal given by Sepheriades.  $\bar{\Lambda}$ , an attested musical symbol, is more likely.

Letter 10.  $\Delta$  Mitsos, Stroud, followed by Solomon and West. What Mitsos interprets as the bottom stroke of a delta<sup>19</sup> compares much more favorably with this mason's alphas, which have a pronounced upward tilt from left to right. The bottom stroke of his deltas is either almost horizontal (e.g., δέ, line 5; ἀοιδῆς, line 8) or has a downward tilt from left to right (e.g., δέ, line 9). IG IV<sup>2</sup> 1, 132–134, which were inscribed by the same mason, show similar alphas and deltas.

Letter 11. E Mitsos, Stroud; O West. Mitsos suggests the restoration ἐνδε[κατη]. Solomon recognizes that epsilon is "extremely questionable",<sup>20</sup> but he does not suggest an alternative. West reads the omikron as

<sup>12</sup> My original readings (presented in my M.A. thesis, University of Texas, 1986) were based on photographs and squeezes kindly furnished by Paula J. Perlman, who also drew my attention to the possibility that these fragments might belong to the same inscription. I have since examined the stones myself and made a few changes to my original text.

<sup>13</sup> W. Peek, *Inchriften aus dem Asklepieion, AbhLeip* 60, fasc. 2, 1969, no. 59, p. 55. Cf. *H. Orph.* 67 Quandt, line 1.

<sup>14</sup> Μούσα: IG IV<sup>2</sup> 1, 128, line 40; 541, 542, 543. Μῶσα (= Μῶσα): Peek, *AbhLeip* 63, fasc. 5, 1972, no. 1 (Μοσαγέτα); SEG XXXIII, 304. Μῶσα is also attested: IG IV<sup>2</sup> 1, 129, line 7.

<sup>15</sup> West, p. 41. He makes this emendation in order to avoid changing tetrachords within the chromatic Hyperionian tonos. For a more detailed discussion of the musical symbols, see pp. 56–58 below.

<sup>16</sup> The emendation allows Solomon to place all the notes, with the exception of the next, within one tonos, the chromatic Hyperionian.

<sup>17</sup> West, p. 41.

<sup>18</sup> A diseme is a musical symbol of duration which indicates that a syllable is to be sung for two counts. See footnote 31 below.

<sup>19</sup> Mitsos, pp. 213–214.

<sup>20</sup> Solomon, p. 170.

dotted in the belief that sigma and epsilon are also possible. The upward return of the lower curve of the letter, however, extends too far for a sigma or an epsilon, and there is no trace of a central horizontal, thus ruling out theta.

*Lines 2–9.* Unless otherwise noted, the restorations are those of Mitsos.

*Line 7.* I see no trace on the stone of the initial dotted iota read by Mitsos and Stroud and printed as certain by Solomon and West. It remains, however, the most likely restoration. Solomon, followed by West, has restored Ἀσκληπι[ιὸν].

*Line 8.* As Stroud has pointed out, the initial sigma is mistakenly bracketed in the edition of Mitsos. Two dots appear over the upsilon in ὕμνος. This diacritical mark occurs over several iotas in the Epidaurian hymns but above upsilon only here.<sup>21</sup> These dots are not read by Mitsos.

*Line 9.* Only the right tip of the horizontal of the initial tau is legible. There is room at the end of the line for only two relatively narrow letters.

*Line 11.* MO Mitsos, Stroud; ME West. I do not know the grounds upon which West bases his reading. The stone clearly reads omikron. M[όσ]α (or some form thereof) should perhaps be restored.

### IG IV<sup>2</sup> 1, 135, Fragment II

*Line 2.* I dot the initial alpha because, epigraphically, the presence of the intersection of the oblique and the horizontal does not rule out the deltas of this mason.<sup>22</sup> Of the final tau the left tip of the horizontal is extant.

*Line 3.* I can see no trace on the stone of the initial tau, printed as certain by Hiller.

*Line 4.* The theta, not read by Blinkenberg, is faint but certain. The preceding dotted iota might just as easily be upsilon. To the left of this stroke I read a curved stroke of which the lower tip of the return is extant. I print sigma, although epsilon can not be ruled out. The iota of ἱερο- has two dots above it, as Hiller notes. This notation commonly occurs over iota, less frequently over upsilon, in a number of other Epidaurian inscriptions of the Imperial period. It is usually understood as an indication of diaeresis, but perhaps in some instances it denoted *spiritus asper*, e.g., in ὕμνος (*SEG* XXX, 390, line 8) where diaeresis is not possible.<sup>23</sup> The Θεαί are perhaps the Muses.<sup>24</sup>

*Line 5.* Hiller reads the initial vertical stroke as a dotted iota. Two dots over the iota of ἰλα[---] are noted by this editor but not by his predecessors. Following the final alpha, Hiller reads PO (undotted). There are no traces of these two letters on the stone, and neither earlier editor noted them. Perhaps they were mistakenly read from the end of the previous line, an error compounded by the editor's suggested restoration of Ἰλάρος here. That this inscription closes with a prose postscript has been noted by all the editors.<sup>25</sup> The hexameters definitely end by line 6. Hiller, however, reads this line as the beginning of a dedication, taking Ἰλάρου and Εὐμένους in the next line as names.<sup>26</sup>

*Line 6.* Peek reads τιμ[---] following εὐμένους, a restoration which fits the traces well.<sup>27</sup>

*Line 7.* Enough of the initial lambda is present to follow the editors of *IG* IV in printing it as certain. Of the final sigma, the lower curve is extant. Γ occurs in a similar context in *IG* IV<sup>2</sup> 1, 133, lines 14 and 15. As the editors of *IG* IV have pointed out, it indicates a triple repetition of some sort. Precisely how much of the text was to be repeated, however, is unclear.

<sup>21</sup> See below, commentary on *IG* IV<sup>2</sup> 1, 135, Fragment II, line 4.

<sup>22</sup> For this mason's alphas and deltas, see above, commentary on *SEG* XXX, 390, line 1, letter 10.

<sup>23</sup> In Epidaurian inscriptions of the Imperial period, *spiritus asper* is indicated by ʹ and ͵ (*IG* IV<sup>2</sup> 1, 418 and 419) and perhaps also by Ͷ (*IG* IV<sup>2</sup> 1, 420).

<sup>24</sup> See footnote 5 above.

<sup>25</sup> The editors of both editions of *IG* IV and K. Münscher, "Zu den neuen Hymnen aus Epidauros," *PhilWoch* 52, no. 35–38, 1932, cols. 87–102.

<sup>26</sup> As Hiller and Münscher (*op. cit.*, col. 91) have pointed out, the name Hilaros is known from two dated inscriptions from the Maleatas sanctuary, *IG* IV<sup>2</sup> 1, 393 and 400.

<sup>27</sup> Peek, footnote 13 above, no. 59, p. 55.

Line 8. ΤΟΙΣ Fraenkel, Hiller von Gaertringen; ΤΡΙΣ Blinkenberg, Peek.<sup>28</sup> The omikrons of this mason elsewhere always occupy the whole letter space, not just the upper portion of it. Rho is the only possible reading.

## THE MUSIC

The commentators disagree about which of the symbols in the first line of *SEG XXX*, 390 should be interpreted as notes. According to Sphერიades and West, all eleven characters in the first line should be interpreted as musical symbols, which are correlated with the words in the line directly below them, in accordance with the typical conventions of ancient Greek musical notation.<sup>29</sup> The final four letters, West believes, are instrumental notation. Solomon, on the other hand, although he entertains the possibility that the last four letters are notes, is more inclined to believe that only the first seven letters are musical symbols and that the final four are marginal notation.<sup>30</sup> I shall argue that only the five letters following the initial EN are musical symbols and that they were deliberately set off from the rest of the text.

Each of the five letters in question has above it the rhythmic symbol called a diseme.<sup>31</sup> The lack of such marks over the other letters does not in itself indicate that they are not notes, since a single rhythmic unit is regularly denoted by a lack of rhythmic notation. It is, however, sometimes the case that the diseme is used relatively, so that "the unit of measurement is not a short, but a long syllable."<sup>32</sup> In modern transcriptions of Greek musical documents, rhythmic notation is often so treated for the sake of convenience.

Not only are the five letters in question more widely spaced than the other letters in the inscription, but there is also a larger than average space separating them from those which precede and follow them: 0.008 m. between the nu and the alpha and 0.012 m. between the "lambda" and the epsilon. The widest spacing within the body of the inscription is between the initial alpha and the tau in *καταλέξει* (line 6), which are separated by 0.007 m. In contrast, the distance between the alpha and the zeta in line 1 is 0.009 m., a considerably wider spacing. The spacing between the rest of the five symbols is comparable: 0.008 m. between the zeta and the theta, 0.007 m. between the theta and the gamma, 0.009 m. between the gamma and the "lambda". The space between the initial epsilon and the nu, however, is the same as that between the final epsilon and the nu in line 2 and is also equal to that between

<sup>28</sup> *Ibid.*

<sup>29</sup> For a brief introduction to ancient Greek music and musical notation, see the entry by J. F. Mountford and R. P. Winnington-Ingram in *OCD*<sup>2</sup>, s.v. Music and the entry by Winnington-Ingram in the *New Grove Dictionary of Music and Musicians*, Washington, D.C. 1980, s.v. Greek Music, Ancient.

<sup>30</sup> Solomon, p. 170. Although he considers Mitsos' ἐνδε[κατη] probable, he also suggests that these letters may be part of a "melisma over the -μεν syllable" or instrumental notation. He recognizes the difficulty which "the liberal spacing between the lambda and the ensuing epsilon" presents for the former suggestion.

<sup>31</sup> *AnonBell* III.83, p. 138 in the edition of Najock. The four rhythmic signs given by *AnonBell* are —, (—), —, and —, representing two, three, four, and five counts, respectively. Only the first two are known from extant musical documents, and indeed the second appears in a form which is a mirror image of the siglum in *AnonBell*.

<sup>32</sup> J. F. Mountford, "Greek Music in Papyri and Inscriptions," in *New Chapters in the History of Greek Literature*, ser. 2, J. U. Powell and E. A. Barber, edd., Oxford 1929 (pp. 146–183), pp. 157–158.

the epsilon and the nu which follow the musical notation in line 1, further support for the identification of the eighth and ninth characters as letters rather than notes.<sup>33</sup>

The musical symbols also tend to be larger than their counterparts in the body of the inscription, especially the alpha, theta, and "lambda". The theta in line 1 is 0.004 m. wide, the alpha 0.005 m., and the "lambda" 0.004 m. The theta in line 3 is 0.003 m., the alpha in line 5, 0.004 m., and the lambdas in lines 4, 6, and 7 are 0.003 m., 0.003 m., and 0.004 m. wide respectively. The average difference between the musical symbols and their non-musical counterparts in both *SEG XXX*, 390 and *IG IV<sup>2</sup>* 1, 135 is *ca.* 0.001 m.

The interpretation of three of the musical symbols,  $\Theta$ ,  $\Gamma$ , and  $\Lambda$ , is problematic. As I noted in the epigraphical commentary, Solomon is followed by West in reading  $\Theta$  for the fifth letter, despite the fact that the crossbar does not extend beyond the perimeter of the circle. Solomon is convinced, in part because of his reading of the sixth letter, that the musical symbol theta would require an unprecedented "double modulation". By attributing the inscribing of theta for recumbent phi to a "musically untrained stone carver," he can assign the notes as he reads them, except for the seventh symbol, to the chromatic Hyperionian tonos.<sup>34</sup> Nevertheless, theta is a legitimate musical symbol which does, as I shall demonstrate, make sense musically in this context.

The sixth letter in line 1 is the most problematic. Sepheriades, Solomon, and West read epsilon. All three interpret this letter as representing the same note as the first letter in the line. Sepheriades and West also interpret the eighth letter in this way, and Solomon too suggests the possibility that it is further musical notation. It is, however, epigraphically doubtful that either the first letter or the eighth represents a note. That these, like the other epsilons in the inscription, are lunate rather than straight is evident on the stone.

There are further difficulties with reading letter 6 as an epsilon. The crossbars of the other epsilons in this inscription are never detached as they are in this letter and never slope upward to the right to such a degree. West implies that the shape of this letter was intended by the writer of the exemplar to distinguish it from other, non-musical, epsilons in the inscription, but that the stonemason, ignorant of musical notation, was unsure of the identity of the letter. Assuming that the exemplar was consistent, this argument nevertheless requires that the first and eighth letters in line 1 be regarded as something other than notes, an interpretation which is compatible neither with West's reading nor those of the other commentators. Moreover, if the mason had set out to distinguish this "epsilon" from the others, why did he not go to similar lengths with the other notes?

Stroud plausibly reads this letter as  $\Gamma$ , and a comparison with the gamma of ἀγλαά (line 7) leaves no doubt about the identification of letter 6 (minus its "crossbars") as a gamma, followed by a siglum consisting of two parallel horizontal bars. Stroud, however,

<sup>33</sup> The average letter width for lines 2–11 is 0.005 m., as opposed to 0.008 m. for the musical symbols and 0.007 m. for the first line in general. The average space between letters in lines 2–11 is 0.003 m., contrasted with 0.006 m. for the musical symbols. The first two and the final four letters of line 1, however, average 0.005 m. in width and 0.003 m. in inter-letter spacing.

<sup>34</sup> Solomon, pp. 169–170. The note thus stands as Nete in the tetrachord Synemmenon of the chromatic Hyperionian tonos.

does not note the diseme to the upper left of the letter, the placement of which has parallels in other musical texts.<sup>35</sup> Although there is no parallel for its use in a musical context, the siglum = may have served as some sort of punctuation mark. Stroud does not offer an interpretation of the symbol, which is in any case relatively rare. In most of the inscriptions in which it appears, its function is unclear.<sup>36</sup> A full stop, however, would be appropriate in this position since, as I shall argue below, gamma is the last note before a rest.

The next symbol,  $\bar{\Lambda}$ , also presents difficulties. It is interpreted by Solomon as the note lambda with a diseme. Because lambda does not occur in the chromatic Hyperionian tonos, Solomon offers three interpretations: it must be understood as a “borrowed note”, or as “another error on the part of the stone carver” whereby lambda was inscribed for alpha or delta, or the symbol is a pointed leimma.<sup>37</sup> Sepheriades and West both interpret it as Solomon’s third alternative. Sepheriades reads  $\bar{\Lambda}$ , which he calls a three-count rest, although according to Anonymus Bellerman (our only theoretical source for rests<sup>38</sup>) a rest of this duration would be depicted as  $\bar{\Lambda}$  (or  $\bar{\Lambda}$ ).<sup>39</sup> Furthermore, there is no evidence on the stone for the upper horizontal which Sepheriades records. I therefore follow West in interpreting the symbol as  $\bar{\Lambda}$ , Anonymus Bellerman’s sign for a rest of two-count duration, attested in a number of musical documents.<sup>40</sup>

I turn now to the rest of the line and the relation of the non-musical letters (the initial EN and the final ENAO) to the musical notation. In all the extant musical texts, as I have mentioned, musical symbols are placed directly over the syllable on which the note in question is to be sung; thus the notation occurs throughout the text. The position of the notation in *SEG* XXX, 390 is therefore anomalous: it occurs only in the first line and there not centered over any particular syllables. The view of Sepheriades and Solomon that these notes should be associated with the syllables below them is improbable because there is no evidence for hymns of which only one line (or part of a line) was sung and the rest declaimed without accompaniment.<sup>41</sup> West, like Sepheriades and Solomon, begins by assuming that

<sup>35</sup> Cf. Mesomedes, *Hymns* 1 and 2 (E. Pöhlmann, *Denkmäler altgriechische Musik*, Nuremberg 1970, nos. 1 and 2), in which the copyist appears to have positioned the diseme to one side over notes which, like this one, have upper horizontals.

<sup>36</sup> R. Kaiser in *De inscriptionum graecarum interpunctione*, Berlin 1887, does not mention this siglum. Parallel horizontal lines may also represent single strokes in numerical notation (cf., e.g., *IG* IV, 481 from Nemea). If such is the case here then perhaps the siglum indicates that the four notes are to be repeated twice. The resulting twelve-note phrase would be ideal for a hexameter hymn. Such an interpretation would perhaps support West’s arguments for a single phrase repeated for each line of the hymn. See p. 59 below.

<sup>37</sup> Solomon, p. 170. Although he mentions the possibility that this letter is a leimma or rest, he prefers to consider it a note.

<sup>38</sup> *AnonBell* III.102, p. 150 Najock.

<sup>39</sup> The latter sign is given by Anonymus Bellerman; however, his three-count durational siglum (triseme),  $\bar{\sqcup}$ , always occurs in extant texts as  $\bar{\sqcup}$ . There is no example of a three-count rest in the extant fragments, but such a reversal between theory and practice might hold for rests as well as durational signs.

<sup>40</sup> In its rounded and pointed forms it occurs in several instrumental pieces from *AnonBell* (Pöhlmann [footnote 35 above], no. 10) and the vocal *POxy* 1786 (Pöhlmann, no. 34), *POslo* 1413 (Pöhlmann, nos. 36 and 37), and *PMich* 2958 (Pöhlmann, nos. 39 and 40).

<sup>41</sup> Solomon assumes from the outset that the musical notation is correlated only with the text immediately below it, although he recognizes “the careless positioning of the alleged musical letters” (p. 169) and the “puzzling” fact that *ἀείσωμεν* “might be the only musically notated word in the hymn” (p. 171).



the first seven letters of line 1 are correlated with the syllables below them in the usual manner. He goes on, however, to speculate that this one-line melody was repeated for each line of the text. Thus West sees in this inscription an actual example of the practice he had previously postulated for the Homeric *ᾠδοί*, namely, a repetitious melody punctuated at the end of each verse by a short instrumental interlude.<sup>42</sup> In the present piece this interlude, in West's interpretation, is represented by the final four letters of the line.

If, as I have argued, the notes did not extend across the whole line in such a way that they could be repeated for each subsequent line, then there remain two relationships to be explained: that between the four notes (plus a rest) and the rest of the line and that between the first line and the rest of the hymn. It is possible that the musical symbols were intended as some sort of "shorthand", presumably familiar to the performer, from which he could determine either the *tonos* which was designated for the melody or the standard liturgical tune to which he was to set the hymn. The line as a whole may have served, in effect, as a set of instructions to the performer and must have given him enough information to perform the entire hymn. At the end of the line, I restore *ἐν ᾠ[δῆι]* which fits both the context and the available letter spaces.<sup>43</sup> Thus the text which precedes and follows the musical notation must have clarified the purpose of the notes, signifying something to the effect of "sing to the tune (or *tonos*) of X in the song."

If what we have in the first line of *SEG* XXX, 390 is indeed an example of Greek musical shorthand, then this piece is without parallel among extant musical texts.<sup>44</sup> The fact that such a shorthand would have been of interest primarily to performers might account for the lack of reference to it in the ancient musical treatises, whose authors were more concerned with theory than with application or performance.<sup>45</sup>

In his article on Homeric singing, West discusses the musical significance of the term *ἀναβολή*, which may be relevant to the music of the present inscription.<sup>46</sup> In Homer, the term refers to the initial, "tuning-up" strains of the lyre, and from Pindar we know that in choral performances "the preliminary notes of the lyre serve as a signal and guide to dancers and singers."<sup>47</sup> West continues:

Elaborate *ἀναβολαί* seem to have been a feature of the dithyrambs of poets such as Cinesias. Later writers use *ἀναβάλλεσθαι* rather loosely of beginning a song, etc., with or without accompaniment. The Homeric *ἀναβολή* does seem to have been something more, involving some prefatory notes or strumming on the phorminx before the singing began, but it was probably nothing extended.<sup>48</sup>

<sup>42</sup> M. L. West, "The Singing of Homer and the Modes of Early Greek Music," *JHS* 101, 1981, pp. 113–129.

<sup>43</sup> Cf. Plato, *Rep.* 399c: *ἐν ταῖς ᾠδαῖς τε καὶ μέλεσιν*; *Laws* 664a: *ἐν τε ᾠδαῖς καὶ μύθοις καὶ λόγοις*.

<sup>44</sup> There are certainly parallels from other cultures for musical abbreviation, especially for sacred music. We might compare, for example, the early (7th century after Christ) notation of plainsong by means of neums, a system which was of no use to a singer not already familiar with the music.

<sup>45</sup> A possible exception is Aristoxenus of Tarentum, who professed, at least, to have treated music as it existed in practice.

<sup>46</sup> West (footnote 42 above), pp. 122–123.

<sup>47</sup> *Ibid.*, p. 122: Homer, *Od.* 1.555 (viii.266) and xvii.261–263; Pindar, *Pyth.* 1.1–4. See West's notes 56–58 for a complete list of literary sources.

<sup>48</sup> *Ibid.*, p. 122.

West goes on to speculate that such “instrumental flourishes” occurred at the end of each hexameter, but for the purposes of this study, it is the concept of an initial, short instrumental passage which acted as a signal to performers that is important. That an ἀναβολή need not have been long or elaborate we know, for example, from a scholiast on Pindar, *Ol.* ix who relates the origin of the onomatopoeic τήνελλα.<sup>49</sup> Archilochos, the story goes, having no kitharist to perform his hymn to Herakles, “imitated the tune with speech” (διὰ τινος λέξεως τὸ μέλος ἐμιμήσατο). “Thus he drew up the phrase τήνελλα as a beginning for what followed, and he himself spoke the tune of the kithara, the τήνελλα, in the midst of the chorus, and they did the rest.”<sup>50</sup> Archilochos either sang the kithara part without words, or, more likely, the word “tinella” (“ting-a-ling”) to the kithara part. Although I cannot conclude that the four notes in *SEG* XXX, 390, line 1 constitute an ἀναβολή, it is relevant that there existed a tradition of signaling to performers and that perhaps such preliminary notes informed the performer(s) of the tune or tonos to be employed.

West raises another point about the Archaic practice of singing hexameters which may throw some light upon the form of the “shorthand” of *SEG* XXX, 390. The lyre may originally have had but four strings which presumably corresponded to the four notes of the tetrachord.<sup>51</sup> Thus, West argues, Homeric hexameters were sung on four notes only, in accordance with pitch accent. It may therefore be significant that the abbreviation of this hexameter tune consists of four notes. This is not to say that there is a tetrachord which comprises these four notes. The number of notes involved, nevertheless, may be another reflection of concern for tradition on the part of whoever was responsible for having the hymn inscribed. However long a Homeric ἀναβολή might have been, it would have consisted of only four different notes, and the kitharode need only know those four notes to tune his instrument accordingly. Even in later times, after the compass of the lyre had increased, it might have remained traditional in hexameter poetry to use a four-note introduction to acquaint the performer with the tune. In any case, since the present piece undoubtedly contained more than the four notes inscribed in line 1, which have a total range of only 1½ scale tones, and since the lyre in later times had more than four strings, the number four does not seem to have had any practical significance. In summary, although I do not agree with West’s reconstruction of the piece, I accept his argument that it was the work of someone concerned with preserving (or reverting to) traditional musical practice.

Since *SEG* XXX, 390 contains only four possibly non-sequential notes, which may constitute not a musical piece but an abbreviation of one, a definitive analysis of the music is unlikely to be achieved. I shall begin with a brief outline of the basic principles of ancient Greek music followed by a summary of Solomon’s and West’s analyses, even though my reading of the notes does not allow me to accept their conclusions.

<sup>49</sup> Schol. *Ol.* ix, line 1 = Drachmann I, p. 266.

<sup>50</sup> συντάξας οὖν τοῦτο τὸ κόμμα τήνελλα, οὕτως τὰ ἐξῆς ἀνεβάλλετο, καὶ αὐτὸς μὲν τὸ μέλος τῆς κιθάρας ἐν μέσῳ τῷ χορῷ ἔλεγε, τὸ τήνελλα, ὃ δὲ χορὸς τὰ ἐπίλοιπα.

<sup>51</sup> This assumption is based on literary evidence (e.g., Strabo, xiii.2.4; Cleonides [Jan], 202.11–12) and on archaeological evidence from the early Archaic period. On the other hand, seven-stringed lyres were depicted in Minoan and Mycenaean art, and an anonymous referee has argued that this instrument was in continuous use from the Bronze Age and that Geometric depictions of four-stringed lyres reflect style rather than reality; I do not know how this view would account for the literary evidence.

The most basic unit of ancient Greek music was the tetrachord, of which the two extreme notes are fixed while the two interior notes vary according to *genus* (diatonic, enharmonic, chromatic). These tetrachords were arranged by theorists in such a way as to form continuous *tonoi* ("pitch-keys") which were designed by various ethnic labels (e.g., Dorian, Hypolydian, Hyperphrygian). Such arrangements of tetrachords were divided into two *systemata*. The Greater Perfect System consists of the tetrachords Hypaton, Meson, Diezeugmenon, and Hyperbolaion (lowest to highest), the Lesser Perfect System of the tetrachords Hypaton, Meson, and Synemmenon. The Immutable System combines these two *systemata*. The notes within the tetrachords were designated by position names which reflect the kithara strings on which they were played. Thus the notes of the two lowest tetrachords, Hypaton and Meson, were called, in ascending order, Hypate (highest string, not pitch), Parhypate, Lichanos, and Mese. Scale steps within the *tonoi* were designated by the position name followed by the name of the tetrachord (e.g., Paranete Synemmenon).

As noted above (p. 54), Solomon, for musical reasons, reads letter 5 not as theta but as recumbent phi. He finds it problematic that nowhere in Alypius' tables<sup>52</sup> does theta occur in the same *tonos* as all the other notes in the line. Recumbent phi, however, does occur with the other notes, as Solomon reads them, with the exception of letter 7 (if it is read, as it is by Solomon, as a note rather than a rest), in the chromatic Hyperionian *tonos*. West for the most part agrees with Solomon's analysis, particularly with his emendation of the theta, except that he would prefer to remain as much as possible within a single tetrachord (Synemmenon) and not to venture into the tetrachord Diezeugmenon, as Solomon's reading does. He therefore emends the third letter, alpha, to delta in spite of its epigraphical certainty. Both commentators naturally assume that the notes as they read them were intended to be sung in direct sequence, and they must therefore make emendations in order to make sense of the text. Given the sense of the text as I read it, however, it is no longer necessary to think of these notes as the tune itself but rather as representative of it in some manner.

No single *tonos* contains all four notes of *SEG XXX*, 390 in their unemended form, so modulation is apparently involved. Cleonides (2nd century after Christ) in his treatise on music distinguished four types of modulation: 1) *κατὰ γένος*; 2) *κατὰ σύστημα*; 3) *κατὰ τόνον*; and 4) *κατὰ μελοποιίαν*.<sup>53</sup> The modulation of the present piece must first be considered as an example of the third type, since the four notes are not contained together in any one *tonos*, regardless of *genus* or *systema*. Concerning this type of modulation, Cleonides further distinguished between the two types, "melodious" and "unmelodious" (*ἐκμελής*), "according as the notes which coincide in pitch are similar or dissimilar as regards their participation in the *Pyknon*."<sup>54</sup> In a tetrachord a *pyknon* occurs when the sum of the two smallest intervals is less than the remaining interval; the two small intervals are then referred to collectively as a *pyknon*. Such a distribution of intervals may occur in the enharmonic and chromatic genera.

<sup>52</sup> Alypius, *Εἰσαγωγή Μουσική* [Jan], no. VIII, pp. 362–406.

<sup>53</sup> Cleonides, *Εἰσαγωγή Ἀρμονική* [Jan], pp. 204–205. Other musical treatises give similar accounts of modulation.

<sup>54</sup> Jan, p. 205, translated by H. S. Macran, *The Harmonics of Aristoxenus*, Oxford 1902, p. 262.

The following discussion is based on H. S. Macran's analysis of Cleonides' definition of modulation as outlined above.<sup>55</sup> According to Macran, the more two tonoi coincide, the more harmonious is any modulation between them. The "most melodious" modulations involve tonoi separated by a perfect fourth or a perfect fifth. "Less melodious" but not unmelodious are modulations involving tonoi separated by one tone or five tones. All others are "unmelodious". The conclusion derived from Macran's analysis is that two tonoi separated by a perfect fourth or a perfect fifth share many common pitches, and modulation between them is therefore very melodious. Tonoι separated by one or five tones share one common note which holds the same position in the pyknon. Modulation between these keys is therefore also melodious, although to a lesser degree.

An examination of the possibilities reveals that, given the notes of this inscription, there can be no "most melodious" modulation. Indeed, only one possibility is at all melodious. The Hyperionian tonos contains alpha as Paramese and zeta as Mese and Nete Hyperbolaion. One tone lower is the Lydian tonos, which has theta and gamma in the tetrachord Synemmenon, as well as the common zeta as Paramese. The interval AZ, a downward progression from Paramese to Mese in the Hyperionian tonos, is also, in effect, the point of modulation into the Lydian tonos, in which zeta occupies the same position as alpha in the Hyperionian, i.e., Paramese. Two types of modulation appear to be involved: the modulation *κατὰ τόνον* from the Hyperionian to the Lydian tonos, and the modulation *κατὰ σύστημα*, since alpha and zeta occur in the Greater Perfect System of the Hyperionian tonos while theta and gamma occur in the Lesser Perfect System of the Lydian tonos.

However the music of this fragment is interpreted, its importance not only for Greek music but also for Greek religion should not be underestimated. The linking of *SEG XXX*, 390 with *IG IV*<sup>2</sup> 1, 135 yields a third set of inscribed hymns from the sanctuary at Epidauros. The presence of musical notation provides concrete evidence for the performance of liturgical hymns and so gives a glimpse of the workings of cult ritual in the Imperial period. The existence of a means of musical abbreviation suggests that sacred music was probably standardized in this period. The apparently archaic features of this notation perhaps indicate that such a process of standardization had already begun before the Imperial period. It may therefore be possible to gain some insight into earlier liturgical music and poetry by a judicious comparison with the later material. Finally, it may also be possible to apply to other musical texts not only Cleonides' principle of modulation but perhaps also, if caution is exercised, other principles derived from theoretical treatises.<sup>56</sup>

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<sup>55</sup> For the entire argument, see Macran, *op. cit.*, pp. 262–266.

<sup>56</sup> On the pitfalls and rewards of such analyses and for an exemplary prototype, see J. Solomon, "The Seikilos Inscription: A Theoretical Analysis," *AJP* 107, 1986, pp. 455–479.



SEG XXX, 390



IG IV<sup>2</sup> 1, 135, Fragment II



IG IV<sup>2</sup> 1, 135, Fragment I

SUZANNE BONEFAS: THE MUSICAL INSCRIPTION FROM EPIDAUROS