

## MUSICAL EVENINGS IN THE EARLY EMPIRE: NEW EVIDENCE FROM A GREEK PAPYRUS WITH MUSICAL NOTATION

WITH disarmingly open conceit, the Younger Pliny tells Pontius Allifanus that ‘my hendecasyllables are read, are copied, are even sung, and Greeks (who have learned Latin out of love for my poetry book) make my verses resound to cithara and lyre’ (*Epist.* 7.4.9). By Pliny’s time, Greek musicians (and actors) were widely distributed and organized in a worldwide guild centred at Rome,<sup>1</sup> so it will not surprise us that Greeks are the ones setting the verses to music. But what sort of music? When Pliny went out to hear his beloved poems sung to cithara and lyre, what did it sound like? Or, more generally, what did Pliny, or Martial, or, in an earlier generation, Horace see and hear when out for an evening’s musical entertainment at the hands of a Greek troupe? Until fairly recently, we have known precious little. Literary sources give the odd anecdote, such as the reports of Nero’s performances, but in general tell us little specific about the content or style of musical entertainment in the Roman era. And sources speaking more technically about music itself lend the impression that nothing significant happened after the ‘New Music’ was introduced in the fourth century BC.<sup>2</sup>

Over the last several decades, however, a thin yet steady trickle of documentary finds has gradually allowed us a much firmer impression of what Greek musical entertainment was like in the Roman era. The documents stem from the provinces, especially from Graeco-Roman Egypt, but the fact of worldwide guilds of travelling musicians encourages us to think that settings and styles are broadly representative. The most spectacular finds, such as the Seikilos epitaph, the Berlin ‘Music Lover’s Library’, or the Oxyrhynchus Christian hymn, have long been known, but in the last fifty years each decade has seen the steady addition of newly published documents, mostly from the Roman era, mostly scrappy, but as a group highly significant. To be sure, the number of ancient witnesses remains small: a complete catalogue (including Hellenistic documents) lists two short collections passed through the medieval tradition, five inscriptions, 23 papyri.<sup>3</sup> Even these are often very fragmentary and difficult to interpret: we hear broken snatches of melody here, an uncertain rhythm there. But enough now exists for a determined and insightful scholar to begin to draw conclusions, and this is exactly what a landmark study by M.L. West, *Ancient Greek Music*, has recently done. For the first time, a history of ancient Greek music can begin not from speculation based on ancient theorists, but from how extant examples, however exiguous, illustrate and augment what can be culled from literary and technical sources. Roman-era documents can be used to demonstrate, for instance, that Greek music in the time of Horace or of Pliny differed sharply from the ‘ant hills’ of Timotheus.<sup>4</sup>

Now a small but extremely interesting papyrus fragment in Yale’s Beinecke Library can be added to our evidence. *PCtYBR* inv. 4510, a Roman-era fragment containing parts of (probably) two Greek melic poems with running vocal musical notation, supplements our detailed knowledge of ancient Greek music in a number of ways: the papyrus significantly extends our notion

<sup>1</sup> By imperial decree, dating from the time of Augustus and consolidated under Claudius. Essential documents are *BGU* 4.1074, *POxy* 27.2476, 31.2610; cf. discussion in Pickard-Cambridge (1988) 297–8; and on the *technitai* generally, *ibid.* 279–305. Garton (1972) 141–67, esp. 151–6, 166, gives a vivid account of Sullan interactions with local Greek guilds as antecedent to the Augustan and Claudian action.

<sup>2</sup> See West (1992a) 373.

<sup>3</sup> West (1992a) 277–83 is the most complete catalogue to date. That catalogue is arranged by the number of different pieces of music rather than by the number of documents, hence the difference in our counts (West lists a total of 51 scraps of music). The Oxyrhynchus pieces listed there as unpublished have now been edited by West (1998), as numbers 4461–7 in *POxy* LXV; and in West (1999), a collection of small Ptolemaic scraps, now reported as from the Fayûm. West and Pöhlmann are presently collaborating on a revision to Pöhlmann (1970), formerly the standard corpus for the musical documents.

<sup>4</sup> West (1992a) 356–85, esp. 384.

of what a dramatic leap down a scale might entail, or what range might be demanded of a vocalist; here is our most extensive witness on papyrus of the form and use of triseme (marking a note of three basic time-units); this is the only document to contain certain musical notes towards the bottom of the scale, including one note outside any known notation key; and the papyrus adds precious evidence for our understanding of the notation of rhythm.

For non-specialists the primary importance of the Yale papyrus will lie, however, not so much in the richness of new details, but in its accumulation with a group of papyri that increasingly looks like a type. The better preserved of this group, all musical papyri of the second or early third century AD, are *POxy* 2436, *POslo* inv. 1413, *PMich* inv. 2958, *PBerol* inv. 6870. With these the Yale papyrus shares several distinctive characteristics: (1) unusual formal features of the roll, such as the odd column layout (see §2.2); (2) an ornate musical style, with free use of melisms (two or more notes set to a single syllable), but coupled with a fairly strict diatonic scale; (3) a heavily mythological content informed by a ‘dramatic’ personal voice, as indicated by markers like vocatives, imperatives, conjunction of first and second person, and an overall melodramatic tone; (4) indications that the roll contained a collection of two or more different songs (*POxy* 2436 is too fragmentary to exhibit this feature).<sup>5</sup> Less regularly, and doubtfully in the Yale papyrus, we see also: (5) stichic verse, in whole or part, such as iambic trimeter or trochaics (and *cf.* Pliny’s hendecasyllables!), which we expect to be spoken but which are set to music.<sup>6</sup> Less extensive fragments, such as *POxy* 3704, 3161, 3162 (and now *POxy* 4461–7), are also mostly or wholly consistent with this portrait.

Shortly after the initial publication of *PBerol* inv. 6870, Mountford tagged it the Berlin ‘Music Lover’s Library’, behind which was a vision of an anthology collected by a private person ‘for purposes of instruction or pleasure’. Mountford went on to infer that the contents were ‘presumably pieces which had considerable notoriety, and ... are more likely to be selections from comparatively standard works than contemporary favourites’.<sup>7</sup> But the accumulation of other such ‘anthologies’ allows us to draw a very different, and less speculative, portrait of what a fragment such as the Berlin papyrus, or now the Yale papyrus, may represent. First, the unusual and yet consistent formal features of the texts can be used to confirm what some have already inferred from the fact of the musical notation:<sup>8</sup> that these papyri are almost certainly musical texts which were produced for, and sometimes by, professional musicians (detailed arguments below, §2.2). The excellent publication of the Oslo papyrus gave us our first secure push in this direction, for there the writer of the musical notation seems to be the composer himself.<sup>9</sup> Secondly, the music of these papyri shows every sign of ‘late’ composition: in the whole group there is hardly a hint either of the enharmonic genus expected in Classical music, or of the sort of chromaticism and modulation expected of New Music. Thirdly, there is the ‘dramatic’ content combined with the fact of an anthology, for which again the Oslo editors first made plausible the argument that papyri of this sort may well represent the arias (as it were) of a star performer.<sup>10</sup>

The Yale papyrus joins, then, a group of papyri that bear witness to what a Roman-era Greek musical performance was like. How can we describe this performance? First and foremost, florid and dramatic, and highly so. These characteristics are also found in classical melic poetry, but the Yale papyrus even in its brief and fragmented form displays an unusually rich array of

<sup>5</sup> Earlier musical documents which are also probably anthologies: *PLeid* inv. 510, two lyric excerpts from the *Iph. Aul.* presented in a sequence different from their occurrence in the play; *PVindob* G 13763 + 1494, vocal music with instrumental interludes; probably also *PVindob* G 29825 a–f (dramatic fragments).

<sup>6</sup> Other musical stichic texts beyond the group considered here: the Epidauros inscription (hexameters: see West (1986)); Mesomedes, *Hymn to the Sun* and *Hymn to Nemesis*.

<sup>7</sup> Mountford (1929) 152.

<sup>8</sup> See Comotti (1991) 11, 41; West (1992a) 269–73.

<sup>9</sup> Winnington-Ingram (1955) 56–8.

<sup>10</sup> Eitrem and Amundsen (1955) 27–9.

poetic and melodic adornment: repetition and even rhyme in the poetry, frequent melism and rare but wide and dramatic leaps in the melody line. At one point the singing even seems to imitate, by a wild plunge into the bass, the shift in voice characteristic of spirit possession (see §3.1). The poetic contents are similarly ornate: in the few whole words that come down to us, there are in the first column several mythological allusions (Muses, Tempe(?), ‘s/he who delights in the bow’) along with pregnantly dramatic declarations (‘I will taste of your...’, ‘I will proclaim the prophecy...’, ‘I will fill the altar...’); and even in the exiguous second column, weeping and wailing come quickly into play. Furthermore, use of first and second person in the Yale papyrus, like others in the group, suggests a dramatic scene, and indeed a scene mostly or entirely played by a single singer.<sup>11</sup> That suggests in turn acting and spectacle, but here we stumble into a hole in our knowledge that the documentary evidence will not fill. The ornateness and high drama are in any case consistent with the idea of the star performer. Here is a show piece, a vehicle for a performer to strut his stuff, the ancient equivalent of ‘*Un bel di vedremo*’. And one must insist that the cultural register is Puccini and not pop: the frequency of mythological allusion in the Yale papyrus and in the group as a whole strongly suggests an audience with pretension to cultural attainment. This is music pitched at the upper crust and the ‘wannabes’, and not at the bakers and fullers.

I have already mentioned that the music in the Yale papyrus, and in the group as a whole, distinguishes itself from music of Classical or early Hellenistic times, for behind a superficial ornateness is a thoroughly diatonic scale. This does not mean that the music cannot itself be a few generations old; but that it stretches back to the time of Timotheus or Euripides is unlikely, and the presumption here will be that the music is more or less contemporary. The poetic text need not be. First, the metre seems to be dactylo-epitrite, and this apparent fact (see §3.3) may suggest that the poem (as opposed to the music) is not contemporary. At least one can say that, on the thin evidence we have, dactylo-epitrite seems to have fallen out of favour by the second or first century BC. In this context one thinks, too, of the Themison inscription, which is often adduced as evidence for the habit of setting the old poets to new music. For that second-century AD inscription celebrates the singer Themison, who won many prizes by setting Euripides, Sophocles and Timotheus to his own music.<sup>12</sup> The poem here is not, however, by Sophocles. Or at least I find it hard to imagine attaching this contrived style to what we know of the Classical tragedians. Indeed, what is so interesting about the piece is that it seems to be something so very new, a piece of melodrama rather unlike anything that comes down to us through the medieval manuscripts.

What kind of musical poem do we have then? Editors of musical papyri are prone to declare the pieces fragments of scenes from drama. At least some of the papyri certainly are that: one thinks of the Orestes fragment, and of the collection of arias excerpted from the *Iphigeneia at Aulis* in a Hellenistic musical fragment (*PLeid* inv. 510). The Yale papyrus may then be scenes from tragedy, recent or old, set to contemporary music. But it is important to bear in mind that this conclusion is presumptive—for the melodramatic content of our fragments does not necessarily imply drama *per se*. Many generic forms, from monody to choral lyric to mime, contain similarly dramatic settings. As the anecdote from Pliny will serve to warn us, the contemporary habit seems not so much to set canonical dramatists to contemporary music, as to sing the ‘best’ poetry available. The assumption that documents such as the Yale papyrus contain excerpts from tragedy may then be too facile, and we should hold open the real possibility that these melodramatic songs represent a category otherwise unknown to us.

<sup>11</sup> Soloists were accompanied by one or more instrumental players, who (given their designation as ὑποκριταί) may also have acted minor parts; see documentary evidence collected in Eitrem and Amundsen (1955) 28. Among the musical papyri, only the Michigan papyrus provides direct evidence of a dialogue, and there too a lively, self-questioning monologue cannot be ruled out. For a reconstruction of the Michigan piece as a dialogue, see West (1992a) 315.

<sup>12</sup> μόνον καὶ πρῶτον Εὐρείπιδην Σοφοκλέα καὶ Τειμόθεον ἑαυτῶ μελοποιήσαντα (*SEG* 11. 52c, add.).

| §1                        | §2                     | §3                      |
|---------------------------|------------------------|-------------------------|
| <i>Transcriptions</i>     | <i>Text</i>            | <i>Music</i>            |
| 1.1 Diplomatic            | 2.1 Palaeography       | 3.1 Melodic Notation    |
| 1.2 Poetic Text           | 2.2 Format and Context | 3.2 Rhythmical Notation |
| 1.3 Modern Staff Notation | 2.3 Contents and Style | 3.3 Metre and Accent    |

## §1. TRANSCRIPTIONS

*PCtYBR* inv. 4510 was acquired by the Beinecke Rare Book and Manuscript Library in 1996 (PLATE 1). The acquisition was one of three purchases (labelled 1996b, 1996c and 1997a in the Beinecke records) represented by the dealer as parts of a single private collection. The collection is said to have been purchased from Egyptian dealers earlier in the century, but otherwise nothing is known; and, since the materials in the collection are various (ranging from the Ptolemaic era to the Byzantine, and stemming from several nomes), nothing more concerning provenience or date can be inferred from external circumstances.

In the transcripts below, + indicates musical notes that cannot be read, and □ indicates a space of about a letter's width left blank in the poetic text. Writing runs along the fibre, on papyrus of apparently fair (not fine) grade. The back is blank. As often in the musical papyri, the poetic text was written first by one hand, and the musical notation added later by another. That second hand is also responsible for the corrections at i.4 and i.9.

### §1.1 *Diplomatic Transcription (see opposite)*

**Text:** *Song A* (=Col. i.1–ii.5). Col. i.3 ]τ, or π. 4 ]π, or γ, τ. 4 Above and following α of ασω possibly *iota* written in correction; see note on musical notation at i.4.7. 4corr. Trace visible of lower left angle of, it seems, *delta*. 8 ]τ, or γ with horizontal intrusion from the preceding letter.

9 To either side of α cancellation dots, perhaps also a cancelling slash. Correction by the hand responsible for the musical notation. Col. ii.5 In the intercolumn at left the second hand has added a paragraphos, on top of which is positioned a large and rather crude *chi-rho* siglum. 5 π[, or τ followed by a rounded letter like ο, ε, ω; less likely α.

*Song B* (=Col. ii.5–ii.10). Col. ii.6 λ[, or δ, μ, χ. 7 η[, a very difficult reading: among other possibilities are γ, or ι followed by another letter; ν very unlikely. 9 At right, perhaps the left tip of the bowl of α? 10 The blank space is slight, perhaps accidental. τ[, or π.

**Musical notation:** *Song A*. Col. i.2.1–5 Marks above these notes (diseme, triseme or stigme) would be in lacuna. 2.1 Hasta looks more like lower part of φ, but traces at left and the placement of the note suggest τ. 2.2 Perhaps χ. 2.3 Bare trace of two vertical strokes, and speck of a rounded stroke at bottom, consistent with e.g. ο or ω. 2.4 The *sigma* is oddly formed, but the surface is damaged and *sigma* is musically easy (a fourth); the remains resemble, however, the similarly damaged (and intractable) strokes at i.4.1. 2.8 τ just possible; stigme only probable. 3.5 What appears as a dot above and to the right is, I think, transient ink. 3.10 The diseme is unusually short: stigme intended? 4.1 Very difficult: perhaps ο or c, with stigme to upper right, and hyphen connecting with the previous stroke? If so, then the note belongs with the previous syllable. 4.2 Uncertain to which syllable this note belongs, but (aside from the problem of too many notes over one syllable) more naturally read with following δων than preceding πo: the position of a musical note varies from over the vowel to over the first letter of the syllable, but nowhere else falls so far to the right of its syllable. 4.7 Remains of the top and bottom tip of a vertical stroke, and to the left a rounded stroke. Perhaps φ, though if so awkwardly fashioned. Also possible that the remains are of a note and an *iota* added in correction to the text. 4.8 Ductus clearly suggests τ, but an awkward c cannot be excluded and seems musically superior. 4.9 Above the line, intruding into the *tau* of 4corr., is a second dot, conceivably the upper dot of a dicolon, but more likely stray ink. 4.11 Not certain, but it appears that the note was cancelled with an

| Column i  | Column ii   |
|---|---|
| <p>-----</p> <p>1           ] .. [</p> <p style="text-align: center;">1 2 3 4 5 6 7 8</p> <p style="text-align: center;">τ' + + c'φ τ τ ι'</p> <p>2]φ α ρ ι α ν α ρ κ ι σ σ ο ν ε</p> <p style="text-align: center;">1 2 3 4 5 6 7 8 9 10</p> <p style="text-align: center;">τ φ c' φ ο η τ φ χ c'</p> <p>3]τ ε κ ρ α τ η σ ω τ ο ξ α τ α λ η</p> <p style="text-align: center;">12 13 14 15 16 17</p> <p style="text-align: center;">φ τ χ τ τ w</p> <p style="text-align: center;">δ ε τ α κ α σ τ α λ ι δ ω ν</p> <p style="text-align: center;">1 2 3 4 5 6 7 8 9 10 11</p> <p style="text-align: center;">+ τ : χ τ : χ φ : + τ' η ζ τ ι</p> <p>4]π ο δ ω ν σ ω ν α σ ω [ κ λ ω ]</p> <p style="text-align: center;">1 2 3 4 5 6 7</p> <p style="text-align: center;">c' φ χ τ : + τ τ</p> <p>5]σ α κ α ι γ ε υ σ ο μ α ι σ ω ν</p> <p style="text-align: center;">1 2 3 4 5 6 7 8 9 10</p> <p style="text-align: center;">+ ζ : φ w : φ w φ + τ φ</p> <p>6]ρ ι χ α μ α ν τ ε υ σ ο μ α ι</p> <p style="text-align: center;">1 2 3 4 5 6 7 8 9</p> <p style="text-align: center;">τ φ c' ο ι' τ ζ τ ι</p> <p>7]ε ν ε τ ο ξ ο χ α ρ η θ η ρ ο</p> <p style="text-align: center;">1 2 3 4 5 6 7 8</p> <p style="text-align: center;">ο σ ο c' φ : φ σ φ</p> <p>8]τ α τ ε μ π ε α θ η ρ ο</p> <p style="text-align: center;">1 2 3 4 5 6 7 8 9 10</p> <p style="text-align: center;">+ π c : c' ο ο : σ ο η c' φ</p> <p>9]α ε λ α γ ο υ σ μ α λ λ ο ν</p> <p style="text-align: center;">1 2 3 4 5 6 7 8 9</p> <p style="text-align: center;">: χ' φ' η χ ζ φ σ χ φ</p> <p>10]π λ η σ ω β ω μ ο ν ε γ ω</p> | <p>-----</p> <p style="text-align: center;">1 2</p> <p>ο [                   ] + [</p> <p>σ α σ α π α ρ θ ε [</p> <p style="text-align: center;">1 2 3 4 5</p> <p style="text-align: center;">τ τ τ χ τ</p> <p>τ α σ η δ ο ν α [</p> <p style="text-align: center;">1 2 3 4 5 6 7 8 9</p> <p style="text-align: center;">κ ο κ ι ζ : α ζ ο</p> <p>ν η □ □ □ □ π [</p> <p style="text-align: center;">1 2 3 4</p> <p style="text-align: center;">ζ α υ +</p> <p>μ ο υ σ ι κ α λ α λ [</p> <p style="text-align: center;">1 2 3 4 5</p> <p style="text-align: center;">τ : α υ υ α</p> <p>σ α ι κ λ α ι ε ι η [</p> <p style="text-align: center;">1 2 3 4 5</p> <p style="text-align: center;">: ι α α υ ζ</p> <p>μ υ ρ ο μ ε ν η [</p> <p style="text-align: center;">1 2 3 4 5</p> <p style="text-align: center;">υ ζ ζ : α υ</p> <p>α σ ο ρ ν ι σ □ α λ λ [</p> <p style="text-align: center;">1 2 3 4</p> <p style="text-align: center;">φ ο τ' +</p> <p>γ υ ν η □ π ο τ [</p> |
| <i>foot</i>   | <i>foot</i>   |

oblique stroke. 4.12 φ is written to the right of the syllable to avoid the trailing tail of 3 from the text line above. 5.5 All that remains is, apparently, a horizontal stroke, consistent with e.g. τ, σ. 6.1 Tip of upper oblique, as e.g. χ; elongated stigmatism also possible. 6.2 Stigma faint and uncertain. 6.8 Speck at bottom as though the tip of a hasta: another φ? 6.9–10 No continuity between the horizontal strokes of these two notes. 6.10 The papyrus surface is rubbed where one expects the left upper diagonal of the asterisk. 7.2 Faint dot at upper right, possibly stigma. 7.5 Upper part of hasta visible; since no remains of hasta at bottom, ι rather than φ. 7.6 Badly damaged but the oblique tip at lower right suggests χ or κ, the latter perhaps more to be expected musically, the former better palaeographically; but other notes, even including ι, cannot be excluded. 8.7 Sigma awkwardly formed (the lower stroke does not quite meet the upper) but fairly certain. 9.9–10 Above and to the left is a speck, perhaps

stray ink, possibly stigmatē (though in an odd position), or possibly the remains of a diseme—the papyrus is stripped exactly where the diseme stroke would lie, though one would expect to see some trace of the diseme at the right. 10.1 Only the lower dot of dicolon remains. χ is partial, but fairly certain.

10.2 Remains are confused, but the long lower hasta strongly suggests φ. 10.5 z surprises: could this be a mistake for τ (paired with χ at 4.3–4, 5.3–4)? 10.8 A stray bit of papyrus stuck to the surface may obscure a stigmatē above this note. ii.4.1 The apparent stigmatē is faint and oddly positioned, and may well be stray ink: there is some blotting in the area following the correction to i.4. 4.4–5 Left edge of diseme or triseme; stigmatē would be in lacuna.

*Song B.* Col. ii.7 In intercolumn at left a large ink blob, probably accidental. 10.3 Or z; surface abraded where stigmatē would lie.

### §1.2 Poetic Text

#### Column i

1                   ] . . [  
2       ]φαρ, ἴα, νάρκισσον ε-  
3       ]τε κρατήσω τόξα τὰ λη-  
4       ]ποδων c̄ων, ἄω \ δὲ τὰ Κασταλίδων / [κλω]  
5       ]κα καὶ γεύομαι c̄ων  
6       τ]ρίχα μαντεύομαι  
7       ]ενε τοξοχάρη θηρο-  
8               ]τὰ τέμπεα θηρο-  
9       ]·α·π/ελαγους μάλλον  
10       ]πλήσω βωμὸν ἐγὼ

[*Song A*] ... <sup>2</sup> [oil?,] violets, narcissus ... <sup>3</sup> I will hold a bow (of the child of Leto? / tender?) ...  
<sup>4</sup> (before?) your (feet?), and I will sing the [...] of the Kastalian nymphs ... <sup>5</sup> and I will taste of your  
... <sup>6</sup> (hair? / in three ways?) I will proclaim the prophecy ... <sup>7</sup> (O maiden?) you who delight in the  
bow and [in killing?] the wild beasts ... <sup>8</sup> Tempe (the valley) ?where the wild beasts [are born (*vel*  
*sim.*)] ... <sup>9</sup> (of the sea? / the hares?) rather than ... <sup>10</sup> I will fill [up?] the altar ...

#### Column ii

3       caca παρθέ[νος?  
4       τὰς ἡδονὰ[ς?  
5       \*νη. (*new song?*)   π[  
6       μουσικὰ λαλ[  
7       και κλαίει η[ ]  
8       μυρομένη[  
9       αc ὄρνις, ἀλλ[ἄ?  
10       γυνή ποτ[ ...

... <sup>3</sup> girl ... <sup>4</sup> the pleasures ... <sup>5</sup> ?

[*Song B*] ... <sup>6</sup> (s/he speaks?) music(al?) ... <sup>7</sup> s/he laments ... <sup>8</sup> (she) weeping ...  
<sup>9</sup> birds, (but?) ... <sup>10</sup> woman ...

[*Song A*] Col. i.2 For the mix of (plural) violets and (singular) narcissus, cf. *HH Dem.* 6–8 (a reference I owe to M.L. West): [Persephone] ἄνθεά τ' αἰνυμένην, ῥόδα καὶ κρόκον ἤδ' ἴα καλὰ / λειμῶν' ἄμ μαλακὸν καὶ ἀγαλλίδας ἤδ' ὑάκινθον / νάρκισσον θ', ὃν φῦσε δόλον καλυκώπιδι κούρη / Γαῖα...; at Longus 3.12.2 a list of spring flowers includes ἴα καὶ νάρκισσον; similarly at *App.Anth. sepulcralia* 238.3, a list of funereal flowers. On contexts for the common pairing of narcissus and violets, see below §2.3. If ἴα is correct, then the almost inevitable restoration is ἄλει]φαρ, an oil or unguent (in this context perhaps a perfume?). For e.g. ῥόδιον ἄλειφα(ρ) as a variant for the common ῥόδιον μύρον, cf. Hipponax 58 Bergk, and in Hippocratic prescriptions for women, *de nat. mul.* 74, *de mul. affectibus* 84, 195, 206. Many types of flowers are used in unguents (including the narcissus: for illustrative lists, cf. Aëtius Amidenus *Iatricorum liber xvi* 83 Zervos; Hierophilus Soph. in Delatte, *Anec. Athen.* 460), but unguent is in any case appropriate if, as it seems, this is a list of gifts or offerings. The repeated mythological allusions at first tempted me to think of the boy Narkissos, but ]φαρ ια νάρκισσον surely suggests the flower (hard to see how ἴα, 'arrows', would work alongside narkissos, despite the bow in the next line); and other interpretations of ]φαρια are not attractive (rare and not obviously suitable are ψα]φαρία (dust, dirt), γομ]φάρια (mullets, but used proverbially of overly honest people), φαρία (an obscure sort of vessel, or adjectival for the island Pharos); φάρια (plural diminutive of φάρος); and the division ]φα ρια is hardly better).

3 τόξα: the trace below the line at the left seems to guarantee *ksi*. For κρατέω with accusative of the thing one holds (has mastery over) see *LSJ* IV.5; and cf. Theocritus, 23.4f: κούκ ἦδει τὸν Ἐρωτα τίς ἦν θεός, ἀλίκα τόξα / χερσὶ κρατεῖ, χῶς πικρὰ βέλη ποτικάρδια βάλλει.

τὰ λη[ : Given probable references to Apollo or Artemis in what follows, perhaps τόξα τὰ Λη[τογενοῦς or Λη[τοῖδαο (-ου). A different word division is however possible: τόξ' ἀταλή or ἀταλή (χερί?).

4 ]ποδων σῶν: the word order suggests high (tragic?) style: cf. e.g. Eur. *Ph.* 695 (ποδῶν σῶν), Aesch. *Pr.* 557 (λέχος σόν). Perhaps πρὸ ποδῶν σῶν? For the motif of suppliants setting holy wreaths 'before your feet', cf. Achaeus Trag. fr. 2 Snell. Or, as M.W. Haslam suggests, perhaps τρι]πόδων σῶν (a familiar item at Delphi).

ἄσω: Cf. Theocr. 1.145 for a similar context. An adscript internal to the stem is usually written in Roman-era literary texts (thus αἰσει in a Theocritus papyrus, *POxy* 50.3548, vii.78), but not always. Both syntax and context here seem to demand ἄσω over ἄω.

For the Muses as Κασταλίδες (νύμφαι), cf. Theocr. 7.148, and, if Schubart's restoration is correct, an epigram by Posidippus Pellaeus, *SH* 705.8; also *Castalis, Castalidum* at Martial 9.18.8, 4.14.1. A word otherwise unknown. In Roman times Kastalia and prophecy become closely linked: *RE* 10.2338.

κλω was erased in antiquity, and the musical note above it apparently cancelled with a slash. The fact of its erasure implies that more text (and music), ending in κλω, is added supralinearly above the next line. In the context, κλω[να δάφνης seems very likely, as M.L. West points out to me, adducing Lucian *adv. indoct.* 3 παρὰ τῶν Μουσῶν κλώνα δάφνης ... λαβών, and Tzetz. *Vita Hesiodi* line 8 Solmsen.

6 μαντεύσομαι can mean 'I will proclaim a prophecy' (whether a man or, in Hellenistic Greek, a god declares the oracle: *LSJ s.v.*), 'I will consult the oracle' (e.g. Pindar, *Pyth.* 4.163), 'I will proclaim s.o. a (god *sim.*)' (e.g. *AP* 14.69.3). Further at §2.3.

7 ]εβε strongly suggests a vocative, and given what follows παρθ]έβε seems likely.

τοξοχάρη: Formally one expects τοξοχαρή, accusative, but in the immediate context the word seems more likely intended as vocative (a suggestion I owe to M.L. West). Examples of 3rd-declension s-stem nouns and adjectives with vocative in -η do occur sporadically in Roman-era papyri and inscriptions (Gignac (1981) II.137; Threatte (1996) II.178; cf. Schwyzer *Gr. Gramm.* I 579–80, who accents paroxytone). The phrase παρθένος τοξοχαρή would paraphrase exactly παρθένος ἰοχέαιρα (by its ancient etymology, > ἰός + χαίρω), a standard name for Artemis (e.g. *HH Art.* 2). τοξοχαρή does not occur in extant ancient Greek, but the compound is obvious enough to arise in an archaizing twelfth-century poem by Nicetas Eugenianus ('Drosilla and Charicles' 4.181, 5.383 Conca; referencing Eros).

θηρο[ : the poet here adds another epithet, as e.g. θηρο[κτόνε, θηρο[σκόπε. For discussion of possibilities, §2.3.

8 τρίχα: poetic for prose τριχῆ, as commonly in the tragedians and elsewhere (in the context of prophecy, cf. Herodotus 4.67). Or accusative of θρίξ? (Wetting hair in Kastalia's waters is a part of ministrations to Apollo at Euripides, *Ph.* 222–5.)

E.g. τὰ τέμπεα θηρο[τόκα (cf. *AP* 6.186 ἄγκεσι θηροτόκοις); other possibilities include θηρόβοτα, θηρονόμα, θηροτρόφα, θηροφόρα.

9 Cancellation dots (written to either side of the letter as commonly in literary papyri) added by the second hand, who in place of α (apparently: the other possibility is λ), substitutes π above the line, thus πελάγους or πτε λαγούς.

10 πλήρω βωμόν: For the syntax, cf. Plato, *Leg.* 7.814b, Libanius *Or.* 17.4, *App.Anth. oracula* 81.15, and for the thought cf. *AP* 10.7.5 ff. [Archias].

[*Song B*] Col. ii.5 The marginal siglum seems intended to mark a division, given the horizontal line (which the ancient reader will recognize as a paragraphos). Why the second hand has superimposed a *chi-rho* on top of the paragraphos is less clear. *Chi-rho* is usually taken as either χρ(ῆσις), a new or quotable 'passage', or χρ(ηστόν), χρ(ήσιμον), meaning 'useful', that is, something noteworthy in the text. The most recent and thorough study of such sigla concludes, however, that the first option is a red herring, and that all instances on papyri mean, in essence, something 'useful': McNamee (1992) 20–1. If true, then the complex siglum here would have to mean something like 'a noteworthy new entry'. But that seems close to the traditional interpretation of χρ(ῆσις) = a new or quotable 'passage', for which McNamee herself gives convincing evidence on the semantics (21 n.71) as well as examples where the siglum occurs in conjunction with quoted passages and the like (21 nn.69, 72). I should think it best to revert to McNamee's earlier view (McNamee (1981) 109 n.81), shared by Turner and Parsons (1987) 15, that the *chi-rho* is used generally to mark noteworthy items, but is also used more specifically to mark quoted or quotable passages. Here, then, I believe the siglum is intended to mark a new excerpt, that is, a new song in the anthology; and this rather than χ(οροῦ) may be also what is intended in another musical papyrus, *PVindob* 29825ab, line 6, where a similar overlarge *chi* is written in-line; or even in the Berlin papyrus where ΑΛΛ X introduces the second vocal piece. But other anthologies seem content with the paragraphos alone (cf. e.g. *PTebt* 1.1; *BKT* III 542), or use markers such as vertical space or ekthesis (for which see esp. the scrappy remains of musical anthologies at *POxy* 4461, 4464, 4467.)

That the song ends at the blank space internal to ii.5 is not certain, but seems probable given the blank space used as punctuation at ii.10. That probability increases with the observation that there is no indication that the scribe who produced the lines of poetic text did so with any knowledge of the music to be superimposed on those lines (details at §2.2). The blank space is therefore best taken as a mark of a major division, as commonly in prose layouts, rather than as space left to accommodate the music.

6 Perhaps some form of λαλέω (of musical sounds, Theocr. 20.29 and *LSJ* s.v. III), given the traces and the context. But dotted *lambda* is very uncertain.

7–9 The conjunction of weeping, wailing and bird(s) suggests the Procne and Philomela tale, though nothing can be proven; but at Euripides *Ph.* 1514, with reference to the same tale, we find a similar (though not identical) conjunction of μύρομαι, κλαίω, ὄρνις. Tereus appears in another very fragmentary musical papyrus, in which λάλει, μύρομαι also occur: *POxy* 3161→ 1.5, 4.5. The lamenting nightingale is a favourite theme of Greek song: some examples in Barker (1987) i.63–5, also 65 n.9 for other lamenting birds.

9 ]ας, unless the relative, must be preceded by a vowel. Given ]ας and the diseme over the final syllable, ορνις may be accusative plural (ὄρνις for ὄρνεις, as often in the tragedians and elsewhere [*LSJ* s.v.]; or an itacistic scribal spelling). The phrase here overlaps with Sophoclean fragment 791 Radt (κοκκυβόας ὄρνις), but, since the letter sequence is not rare (68× in the TLG data bank, CDROM D 1992) and nothing else suggests Sophocles, we should surely chalk this up to coincidence.

10 The slight space following γωνη may be incidental (cf. the slight gap following καί, certainly not punctuation, at i.5). But if deliberate, perhaps (M.W. Haslam's suggestion) πότε interrogative?



## §1.3 Modern Staff Notation

I set forth below a best-guess approximation into staff notation, using the conventional equivalents for the notes (about a minor third too high, by the current consensus).<sup>13</sup> Warning: I smoothe over the many difficulties of the papyrus with a heavy hand, thus transcription and commentary remain the fundamental text. A vocal rendition, likewise approximate, can be heard by visiting the University of Cincinnati web site at <http://classics.uc.edu/music/yale>; or by locating the papyrus in the Beinecke catalogue (<http://www.library.yale.edu/beinecke>).

*Song A*

i.2 ]φαρ, ἴ- α, νάρ- κικ- κον ε-

i.3 ]τε κρα- τή- σω τό- ξα τὰ Λη-

i.4 ]πο- δων σῶν, ᾗ- σω δὲ τὰ Κα- στα- λί- δων

i.5 ]κα καὶ γεύ- σο- μαι σῶν

i.6 τ]ρί- χα μαν- τεύ- σο- μαι

i.7 ]ε- νε το- ξο- χά- ρη θη- ρο-

i.8 ]τὰ τέμ- πε- α θη- ρο-

i.9 ]πε- λα- γους μᾶλ- λον

i.10 ]πλή- σω βω- μὸν ἐ- γώ

ii.3 κα- σα παρ- θέ- [νος?

ii.4 τὰς ἡ- δο- νὰ[ε?

ii.5 νη (new song?) π[

*Song B*

ii.6 μου- κι- κά λαλι[

ii.7 και κλαί- ει η [

ii.8 μυ- ρο- μέ- νη[

ii.9 ας ὄρ- νικ, ἀλ- λ[ᾶ?

ii.10 γυ- νῆ ποτ[

<sup>13</sup> See West (1992a) 273–6.

## §2. TEXT

§2.1 *Palaeography*

The poetic text is written with graceful informality in upright, markedly bilinear, rounded capitals by a well-practised, medium-speed, and very probably professional hand. Musical notation and corrections were added later by a different, more casual hand in a darker ink and with a coarser pen. Text corrections also belong to this second hand. The second hand is practised and comfortable with writing, but shows the irregular letter formation, uneven alignment and inconsistent ink control associated with private hands.

The script of the poetic text falls into the class called by Turner ‘informal round’, though the designation seems to understate the elegance of appearance frequent among these scripts.<sup>14</sup> Scripts of this type are usually assigned to the late first or early second century AD. Comparing *PLitLond* 132 (= C. Roberts, *Greek Literary Hands*, #13b), dated by the palaeography of cursive annotations to the early second century AD, and given the affinity of the musical notation to second-century scripts, I think the Yale papyrus best assigned to the early part of the second century.

§2.2 *Format and Context*

*dimensions*: 13.0 × 14.2 cm

*column*: >7.0 × >13.0 cm

*intercolumn*: 1.8-2.0 cm

*upper margin*: not extant

*lower margin*: 1.2 cm (possibly complete)

*letter height*: 0.25 cm

*letter width*: 0.44 cm (average)

*leading*: about 1.3 (1.1-1.4) cm

*kollesis*: at 6.5 cm from left top edge,  
overlap of c. 2.0 cm

*disposition*: written along the fibres,  
presumably the front; back is blank

At first glance, the *mise en page* may seem very much that of an ancient book roll. Or so argue the fairly formal ‘book hand’, the regular horizontal and vertical spacing of the text, the division into columns justified right and left, the narrow intercolumn of approximately 2 cm, the fresh papyrus of decent quality written along the fibres. But whether an ancient reader would have viewed this papyrus as a book roll in the same sense as a roll of Aeschylus or Demosthenes may be doubted. Aside from the obvious—that the papyrus was written with specially large vertical spacing to accommodate the musical notation—the oddness of the column itself draws the reader’s attention. By the date of this papyrus, a book roll of Greek melic poetry was typically written with the cola on separate lines.<sup>15</sup> The justified right margin and narrow intercolumn of the Yale papyrus would suggest a prose text to a contemporary reader. Yet a column of prose typically has a width of 4.5–7.0 cm, and hardly ever exceeds 7.5 cm.<sup>16</sup> The lines here are of course incomplete, but as it stands the width of the damaged left column is 7 cm, and the text in lacuna must be substantial. In lines 3–4, for example, ἵποδων σῶν requires some construction to occasion the genitive, and needs considerably more to connect it to what precedes; or in lines 5–6, σῶν must be followed by a noun, and at a minimum we need a conjunction to tie that phrase with what follows. Given such parameters, it is hard to imagine restorations of less than ten letters per line for the first column, and the size of the lacuna may be substantially greater. All of this calculates to a width of 11 cm or more, a width strikingly beyond what is usual for a book roll with justified columns.

The production has, then, an idiosyncratic appearance. To the ancient reader, this is occasioned not simply by the presence of musical notation: the very look and feel of the layout strongly differentiates this roll from a typical poetic or prose book. If poetic, the lines should be

<sup>14</sup> See Turner and Parsons (1987) 21. Though ‘informal’ is strictly correct, these rounded capitals have many points of contact with calligraphic majuscules of great formality (as Turner himself notes).

<sup>15</sup> Turner and Parsons (1987) 12.

<sup>16</sup> Johnson (1992) 167–73, 242–5, 253–8.

ragged on the right with a more substantial intercolumn; if prose, the columns should be narrow, much narrower than likely here. But a look at the other musical papyri immediately changes this picture. Whereas one will look far and wide among other literary papyri to find a parallel for this column layout, the few musical papyri offer a number of close analogues. Following is a list of papyri with music notation where there are substantial data for the column layout.

*PVindob* G 2315 3rd cent. BC (*Orestes*). If Turner is right that this text is not colometrized (see Turner and Parsons (1987) 150 n.79 and the reconstruction in West (1992b) 1), then the full column width was about 15.5 cm.

*PLeiden* inv. 510 3rd cent. BC (*Iphigeneia in Aulis*). Lines of long but apparently uneven length (48 then 62 letters), approximately 21–7 cm wide (a rough estimate inferred from the photo in Matthiesen (1981) 24 and the report of the papyrus dimensions given in Jourdan-Hemmerdinger (1981)).

*PZenon* 59533 3rd cent. BC. Apparently an exercise or the like; but written without colometry to a column width of >12 cm.

*POxy* 2436. Early 2nd cent. AD. Written without colometry, columns justified; column ii width >12 cm.

*POslo* inv. 1413. Early 2nd cent. AD. Written without colometry, columns justified; column width >15 cm. Turner (at Turner and Winnington-Ingram (1959) 113) estimates a column width of 21–2 cm on the basis of the editors' restoration of line 9.

*PMich* inv. 2958. Early or middle 2nd cent. AD. Perhaps written without colometry. Column width >18 cm.

*POxy* 3704 2nd cent. AD. Codex or opisthograph. Perhaps colometrized. Column width >11 cm wide.

*PBerol* inv. 6870. Late 2nd or early 3rd cent. AD. Written without colometry to a width of >17 cm (measured for the first excerpt).

*POxy* 1786. Late 3rd cent. AD. Written on a reused scrap, to a complete column width of about 30 cm.

The fact that the musical papyri are written to a wider column has long since been remarked,<sup>17</sup> but it is worth stressing both how unusual this format is, and how much of a type. The columns are usually written without colometry as if prose, and are uniformly very wide: 15.5, 21–2, 30 cm are estimates or measurements for complete columns, and among partial columns three measurements exceed 15 cm. Not only are these widths dramatically beyond the 4.5–7.0 cm typical of prose texts: the columns are also wider, and sometimes much wider, than the ragged lines typical of poetic texts, whose column widths tend to a range of *c.* 8–12 cm for drama, or 10–15 cm for hexameters (and with a wider intercolumn of *c.* 3–4 cm).<sup>18</sup>

Clearly the format of the Yale papyrus is occasioned not simply by a unique event in which the customer handed a text to a scribe and requested that the lines be double-spaced. Instead, we find ourselves confronting a different, highly specialized idea of a 'book' (or, given its probable short length, 'pamphlet'). That the format was in some sense determined by the needs of the reader becomes yet more apparent as one tries to think through the way in which a roll such as the Yale papyrus would have been produced. It seems unlikely that the customer had a model roll with musical notation which the scribe was asked to copy in identical format. For, like several other extant examples, the Yale papyrus has the text written by, apparently, a professional scribe and the music by, apparently, a private hand, presumably the owner. It is of course not impossible that the scribe was given a book with both text and musical notation and asked to copy the text but not the music. But economy of hypothesis argues against it, and this scenario will be impossible for a text like *POslo* inv. 1413, where the text is written first (though whether by a professional hand is harder to say) and the music added later with corrections that strongly

<sup>17</sup> Turner and Winnington-Ingram (1959) 113.

<sup>18</sup> Johnson (1992) 178–80, 259–60, 263–7.

suggest that transcriber and composer were one and the same.<sup>19</sup> In some cases then, and I think probably in the case of the Yale papyrus, the text alone was handed to the scribe, which will mean a text in the usual more narrow, colometrized format,<sup>20</sup> and the scribe was instructed to copy it in a format which to him would have seemed extraordinary.

Why did the originators of the musical papyri insist on a format so at odds with normative practice in the copying of literary texts? By way of reply, two suggestions. First, the mostly consistent format of the musical papyri coupled with their rareness implies a well-defined and strictly maintained tradition within a small circle—very different from, say, magical papyri, a specialized but more widely distributed use of writing where the variety of format is great. One cannot logically insist upon the connection, but the sense of a coterie brings to mind the music guilds (responsible, interestingly, for the Delphic inscriptions<sup>21</sup>), and it is perhaps not too great a leap to localize papyri like the Yale papyrus in a professional context.<sup>22</sup> Secondly, the formal insistence on exceptionally broad columns raises the question of functional advantage. I will simply assert what to me seems self-evident: that the sort of interaction with the music notation required *if the papyrus were used as a musical script* would be much facilitated by a longer line of notation. That is, a musician trying to read the musical text in order to perform the music might feel a strong need to scan ahead extensively, more so than a lector trying to read aloud the words of a sentence. That musicians were able to read these notes much in the manner of a modern musician reading staff notation should not be doubted: the Oslo fragment, in which many autograph corrections are written in a rapid script, proves that a composer could think in this notation in much the same way as Bach or Mozart; and several vases represent musicians singing or playing an instrument in front of a papyrus roll.<sup>23</sup>

Reflections on the format lead then to two primary conclusions, one practical, the other speculative: (1) it is likely that the Yale papyrus had quite a wide column, thus the parts of lines in lacuna may be substantial; (2) the format perhaps suggests that the Yale papyrus was owned by a professional musician, or by someone who adopted the accoutrements of a professional, and that the owner may well have used the papyrus not just as an *aide-memoire*, but as a script from which to sing.

### §2.3 *Contents and Style*

The likelihood, as we have seen, is that even the first column of our fragment preserves no more than half of the original line length, and so our inability to pick up a continuous thread in the poetic content comes as no surprise. Nonetheless, enough remains that some progress can be made.

*Column i.* The speaker must be male, since the range extends to the low register of a baritone vocalist (§3.1). The consistency of syntax ('I will do A, B, C, D, E') and repeated mythological themes (Kastalian nymphs, Tempe (?), s/he who delights in the bow) seem to guarantee a single singer (and indeed one song). Several points strike one immediately. First, the repetition of first person futures is difficult to parallel, but has an urgent, emotional feel. The closest parallels one can cite are love epigrams where the lover proclaims what he will do for his beloved: *AP* 5.147 and 179 [Meleager], the first directed to the lover, the second to the god Eros. Secondly, there is the dramatic setting: an 'I' speaks to a 'you' (i.4, i.5), though whether a 'you'

<sup>19</sup> Winnington-Ingram (1955) 56–8.

<sup>20</sup> The omission and subsequent addition of what appears to be a complete metrical colon at line 4 supports directly the conclusion that the scribe was copying from a colometrized exemplar (a suggestion I owe to M.L. West).

<sup>21</sup> Paeans by Athenaeus and Limenius with musical notation were inscribed at Delphi by the Athenian Technitai on an external wall of the Athenian treasury; see #12 and #13 in West (1992a) 279–80.

<sup>22</sup> As we might surmise also from the notation itself. See above, n.8; on guilds, n.1.

<sup>23</sup> Comotti (1991) 9 n.7, gathers examples (though he doubts whether these rolls are supposed to have musical notes written on them). See also West (1992a) 263 n.23, with references.

in the flesh, or a dramatic invocation of the ‘you’, is unclear. This leads to the third point, which is that whoever the ‘you’ is, the interaction is extravagant: something will be done with ‘your feet’ (unless ‘your tripod’); presumably it is in relation to this ‘you’ that the speaker will take hold of a bow, taste, proclaim prophetically, fill an altar (with sacrifices?). The referent remains unclear, but on the face of it two broad possibilities suggest themselves:

(1) The context is erotic, and the ‘you’ is the erotic object. This song is then a list of the extravagant things the lover will do for his beloved. One can imagine ways in which the elements of the list could be subordinated to this idea: the flowers in i.2 could be part of a lover’s garland; the wilderness motif introduced in i.7–9 is reminiscent of e.g. the opening elegy in Propertius’ collection (*Carm.* 1.1.9ff.); the bow in i.3, whether that of a hunter or of Eros, is a standard erotic motif; perhaps the lover claims that he will fill [Aphrodite’s?] altar in celebration of the beloved at i.10; perhaps the ‘prophecy’ in i.6 is to proclaim the beloved a god or hero (see below). But other elements do not fit well with this hypothesis, especially lines i.4–5: why would a lover announce that he will sing of the Muses?

(2) A second possibility is that the context is propitiatory or supplicant, and the ‘you’ is a god or hero. In this case, the song is a list of what the speaker will do to propitiate or celebrate the godhead; the flowers are offerings to the god, and the altar at the bottom of the column is likewise a natural reference; and the other items in the list would be things associated with the particular god or gods. Certain details (Muses, prophecy, ‘s/he who delights in the bow’, ‘s/he who [slays/watches over?] the wild beasts’) suggest Apollo and Artemis. Is someone addressing the children of Leto? Let us look at some specifics and see how the details add up.

ἴα, νάρκισσον i.2. Violets and narcissus, as spring wildflowers, are typical elements of the flowery meadow common as backdrop to erotic scenes. Some representative contexts: violets and narcissus are among the flowers Persephone gathers before the rape of Hades (*HH Dem.* 6–8; cf. Pausanias 9.31.9); these populate the meadow where Zeus spies Europa (Moschus 2.65–6); and these are standard denizens in meadows where lovers meet (e.g. Achilles Tatius 1.15.5, Longus 3.12.2, Virg. *Ecl.* 2.47–8); these colourful and fragrant flowers constitute garlands for a lover (*AP* 5.74 [Rufinus], 5.147 [Meleager]), are compared to various bodily parts of a lover (Achilles Tatius 1.19.1, 6.7.2), and in one poem make a suitable ‘dress’ for Aphrodite (Athenaeus *Deipn.* 15.30 [682]). But spring flowers can also be part of an offering to a god (cf. e.g. *AP* 10.7 [Archias], οὐτ’ ἐπιδευῆ / εἶαρος ἀθήρσεις βωμὸν ἐμὸν στεφάνων), and one thinks in particular of the meadow-garland to Artemis that is the focus of the opening song of Euripides’ *Hippolytus*.

κρατήσω τόξα i.3, τοξοχάρη i.7. To take up a bow suggests hunting or warfare, but τοξοχάρη, ‘s/he who delights in the bow’, is clearly an epithet (and a new word: see commentary, §1.2). The bow in i.3 may then also be associated, however obliquely, with a hero or god. But which? Bows are especially attributes of (1) Eros of course, but also Aphrodite (cf. e.g. Anacr. 60.28); (2) Apollo; (3) Artemis. The latter two in particular favour epithets referencing the bow: τοξαλκότης, τοξίας, τοξοβέλεμνος, τοξοδάμας, τοξοφόρος, *arcipotens*, *arcitenens* are all epithets of Apollo, many of which are used also for Artemis; τοξίτις, τοξόδαμνος, τοξότις are specific to Artemis; and cf. βελεσσιχαρής of Apollo at *AP* 9.525.3, and the ancient interpretation of ἰοχέαιρα (> ἰός + χαίρω), frequently of Artemis. But e.g. τοξαλκής appears as an epithet of Eros at Orph. *Hymn* 58.2; and there remain other possibilities, including Ares, Heracles, Atalanta, etc. Further below, at i.7 θηρο[

]ποδων cōn i.4. If ποδῶν cōn, perhaps a suppliant context, as e.g. ‘I will lay wreaths before your feet’; cf. Achaeus Trag. fr. 2 Snell, νῦν οἶν ἡμεῖς ἰκέται θαλλοῦς / στεφῶν τε σέβας τίθεμεν πρὸ ποδῶν / τῶν cōn . . . . The music favours a circumflex on the ultima, but still possible is τρι]πόδων, which calls to mind the Delphic oracle. Indeed Lucian (*Hes.* 8) lists the three essentials of the Delphic oracle as Κασταλία, δάφνη, τρίπους, all possible elements of this line (cf. Κασταλίδων, κλω[να δάφνης?]).

Κασταλίδων i.4. The ‘Kastalian nymphs’, that is, the Muses, are closely associated with Apollo. ἔγω recalls the variety of proclamatory formulae that begin the *Homeric Hymns* (‘I will sing of [god], I begin to sing of [god]’, etc.), and it could be that in our song, as in *HH 25*, the singer proclaims that he ‘will sing of the Muses and of Apollo’. Apollo is strongly linked with the Kastalian spring in both Greek and Latin poetry: thus, in another of the musical documents, Athenaeus, *Paeon*, 5 (=CA p. 141); Bacchylides 3.20; Pindar, *Pyth.* 1.39, 4.163; *Paeon* 6.5; Eur. *Ion* 94–5, *Ph.* 222–3; Nonnus 4.308 ff.; Aristonous, *Paeon*, 42 (=CA p. 164); Horace, *Odes* 3.4 60–1, Propertius 3.3.13, Lucan 5.187–8, Sil. Ital. *Pun.* 14.468.

γεύσομαι i. 5. One might think to find in Greek erotic contexts, as in English, a common motif of lovers ‘tasting of your delights’ *sim.*, but in fact usually the tasting is of death, blood, bitterness (bitter arrows, bitter honey), where not of wine. Yet often enough one tastes of springs or waters, which might provide a link back to the Muses in the previous line: *AP* 7.55.5–6, τοῖν γὰρ καὶ γῆρυν ἀπέπνεεν ἑννέα Μουσέων / ὁ πρέσβυς καθαρῶν γευσάμενος λιβάδων; *cf.* Ovid, *Am.* 1.15.35–6. Tasting might also provide further suggestion of the Delphic oracle (and thus look forward to *μαντεύσομαι* in line 6), since among the Pythia’s preliminary rites is sometimes said to be drinking from the Kassotis or Kastalia spring (Pausanias 10.24.7; Lucian *Bis Acc.* 1 *cf.* *Hes.* 8; Eusebius *Pr. Ev.* 2.3.2), or the ritual chewing of a bay leaf (Lucian *Bis Acc.* 1).

μαντεύσομαι i.6. Prophecy reminds us of Apollo, and *cf.* Pindar, *Pyth.* 4.163, μεμάντευμα δ’ ἐπὶ Κασταλίᾳ for the nexus prophecy–Kastalia–Apollo. Also possible is that the speaker will e.g. ‘proclaim’ someone (a love object?) a god: a much quoted epigram (to Lycurgus) runs δίζω, ἢ σε θεὸν μαντεύσομαι ἢ ἔπερ ἄνδρα (*AP* 14.69.3).

θηρο[ i.7 and i.8. In i.8, it is surely the valley (τέμπεα or Τέμπεα) that receives the epithet: see the commentary (§1.2) for possibilities. But in i.7, the compound appears to refer to a hero or god. Artemis is the natural association. θηροκτόνος, θηροσκόπος, θηροφόνος all are used as epithets of Artemis, the last also of Apollo. The first is also used of Heracles, and θηρολέτης of the club of Heracles; θηρόβρομος of Hecate; etc. But a reference to Artemis seems almost inevitable here given the conjunction of τοξοχάρη and θηρο[. Very likely, then, an address to the goddess in the vocative: παρθ[ένε τοξοχάρη θηρο[κτόνε *sim.* (Artemis/Diana can also appear in love poetry, usually as the extreme alternative for the lover plagued by Aphrodite/Venus: *cf.* e.g. Propertius 2.19.17–18, Tibullus 3.9.19–20.)

παρθ[ένο[ ii.3 Uncertain whether this line belongs to the same song, though that seems the more likely assumption (§3.0). The ‘maiden’ may bring Artemis once again to mind, but τὰς ἡδονὰς in the next line, albeit at a syntactical remove, does not encourage this line of speculation.

Some associations are ambivalent, but the number of strong links to Apollo and Artemis is striking. Most of the surviving details accord fairly well with the notion that someone, probably a mythological character, addresses the children of Leto, in celebration or supplication. Along the way, there are natural references to propitiatory offerings (i.2,10), to the Muses (i.4–5), to the Delphic oracle (i.5,6), and a direct address to Artemis herself (i.7,8). Given odd details like the holding of the bow and the proclamation of prophecy, this song cannot, I think, be a hymn (despite the formulaic ‘I will sing of ...’ in line 4), but there are not enough clues to define the context much further. The tone, however, seems exuberant, even brash: there is a decided lack of self-restraint in this voice which boasts to be able not only to sing of the Muses (a standard poetic claim), but also to proclaim prophecies, and which at the next moment appeals to Artemis directly. We must imagine, then, that the speaker thinks himself a favourite, whether a hero celebrating his actual power, or a hubristic fool destined for a downfall. In any case, I think on balance the first song is less likely to be a love song dotted with mythological motifs in the Propertian mode, and more likely a song in some sense directed at Apollo and Artemis, though the exact situation remains obscure. More definite conclusions: the song is clearly dramatic, in the sense that the singer conjures up a ‘scene’; our fragmentary lines do not indicate more than one singer,

though one could suppose that the ‘you’ is on stage and sings in a part now lost; but I have already argued in the introduction that we should be careful in leaping from these dramatic indications to the assumption that the song represents a scene from drama *per se*.

The exuberant, indeed melodramatic, tone and manner of expression is enhanced by the poetic style, which is just short of bizarre. The poem displays a remarkable tendency to repetition and rhyme, observable even in these broken lines. Five first-person futures appear in the first column, an extraordinary circumstance considering that only twenty-odd words survive in this part of the text.<sup>24</sup> Given the fact that much of each line is in lacuna, these five futures were almost certainly joined by yet others. The recurrent futures give rise in consequence to an incantatory rhyming effect: -σω in i.3, i.4, i.10; -σομοι in i.5 and i.6. That the rhyme is deliberate is an easy inference from the last example, where the poet extends the rhyming syllables to three: γεύσομοι i.5, μαντεύσομοι i.6. In the relatively few words that remain of column one, yet more repetition is introduced: σῶν recurs at i.4 and i.5; compounds beginning in θηρο- at i.7 and i.8; τῶξα and a compound with τῶξο- at i.3 and i.7. Repetition is familiar from other Greek (and Latin) poetry, and is sometimes said to be characteristic of Hellenistic poetry; but the dense repetition (of syntax, words, and word elements), and in particular the trisyllabic rhyme, is very unusual. The closest parallels I have been able to find are from oddball tidbits from antiquity, ditties in fact, such as songs for sailing, drinking and weddings; but even in these contexts trisyllabic rhyme does not occur.<sup>25</sup>

*Column ii.* Too little remains of the poetic text to merit discussion beyond what is set forth in the commentary (§1.2). Here too, though, the subject matter seems dramatic, extravagant, and probably mythological (whether or not our supposition of the tale of Procne and Philomela is correct). On the question of whether the top of the column belongs to the same song as column i, see immediately below.

### §3. MUSIC

Above the poetic text a second, non-professional hand (§2.1) has added vocal musical notation with diverse rhythmical sigla. The writer varies in his placement of the musical notes, sometimes positioning them over the vowel, sometimes (as e.g. i.6, ii.7) over the first letter of a given syllable.

We may assume, given the repeated first-person futures, that the first column comes from one song (‘Song A’). The large marginal siglum at ii.5 marks a strong division (see commentary, §1.2), presumably to a new song (‘Song B’). But whether the top of column ii continues Song A, or is the end of a different song cannot be determined. Since the music seems of a piece (for the insistence on τ at ii.4 *cf.* i.2; for the rhythm at ii.4, *cf.* i.5.2–6, i.6.3–10), these lines are treated here as if they belong to Song A. But the reader should bear in mind how uncertain this assumption is. If we had to do with a normal literary piece, we would expect roughly 2–9 lines missing between the bottom of column i and the top of ii,<sup>26</sup> only enough for a very short additional tune. But the format for the musical papyri is too idiosyncratic (§2.2) to warrant definite conclusions.

<sup>24</sup> Runs of first-person futures are very rare. Beyond the examples given above from Meleager, I can list only two Roman-era examples, neither particularly helpful: a *cantus lugubris* where a mother speaking to her dead child lists the things she will do (‘I will close the tomb, I will mourn, etc.’: Heitsch (1961) 42); and a Christian hymn (‘I will descend, I will reveal all the mysteries, etc.’: Heitsch, 155).

<sup>25</sup> For dense repetition and rhyme in songs for sailing *cf.* e.g. Heitsch (1961) 33; for drinking e.g. 39; for weddings e.g. 85 (where note esp. end rhyme in -εσθοι); but I find no examples of trisyllabic rhymes in collections of such songs. Nor are trisyllabic rhymes listed in the catalogue of rhyming figures by Guggenheimer (1972): see 128ff., esp. 132 for examples of rhyme among Greek and Latin poets. On repetition in earlier Greek poetry, see Fehling (1969), esp. 243–4, 248 for repetition of the elements of nominal compound; on repetition as characteristic of Theocritus, see Dover (1971) xlv–li; for repetition in Callimachus, Lapp (1965), esp. 54ff.; for repetition in Latin poetry, Wills (1996), esp. 418ff. But none of these studies, it should be emphasized, provides a clear parallel for what we see here.

§3.1 *The Melodic Notation*

*Song A.* The first song contains the following notes:

|     |     |     |     |      |     |      |     |      |     |     |     |     |     |     |                                   |
|-----|-----|-----|-----|------|-----|------|-----|------|-----|-----|-----|-----|-----|-----|-----------------------------------|
| ⋈   | ι   | ϑ   | ω   | τ    | χ   | φ    | τ   | ς    | ο   | β   | κ   | ι   | ζ   | α   |                                   |
| 3   | 6   | 10  | 13? | 22   | 27  | 28   | 30  | 31   | 34  | 35? | 39  | 40  | 43  | 48  | [reference number <sup>27</sup> ] |
| E#? | F#  | A   | B?  | e    | f#  | g    | g#  | a    | b   | c?  | c#  | d'  | e'  | f#  | [conventional modern equivalent]  |
| 1/0 | 1/0 | 3/0 | 3/0 | 12/3 | 8/1 | 14/0 | 4/0 | 13/0 | 8/3 | 2/0 | 0/2 | 2/2 | 3/2 | 0/1 | [frequency count: col. i/col. ii] |

For the most part the identification of notes seems certain. The forms of τ, ζ, and β, slightly unusual as letter shapes for this date, seem to be a normal way of writing musical notes: τ is rare, but the hooked base is seen in *POslo* inv. 1413; ζ with a nearly vertical upright is found occasionally in the Oslo papyrus, and consistently in *POxy* 3704, 3705, 3161, 4461, 4463–5, and the Berlin Paean (*PBerol* inv. 6870); β in comparable form is found in *POxy* 3704, and *cf.* the similar ductus in the Berlin Paean and *POxy* 3161, 4461, where, however, a final stroke usually pulls the tail to the right (and see further below). But the lowest four notes (⋈ ι ϑ ω) are, if my interpretation is correct, remarkable—unexampled as notes in the other papyri and inscriptions, and musically unusual. These notes, which occur with but one exception only in line i.6, will require more extensive comment (below).

Taking for the moment only the notes frequently visited, we see that the melody tends to restrict itself to a very narrow compass. Most of the extant melodic phrases contain only the notes τ χ φ ς ο, with occasional use of the chromatic τ. These notes can be recognized as the central section (*Lichanos hypatôn* to *Mesê*) of the Ionian notation key in the diatonic genus.

|    |              |    |    |    |                            |
|----|--------------|----|----|----|----------------------------|
| τ  | χ            | φ  | ς  | ο  |                            |
| 22 | 27           | 28 | 31 | 34 |                            |
| e  | f#           | g  | a  | b  | [tone + tetrachord f# – b] |
|    | └──────────┘ |    |    |    |                            |
| T  | S            | T  | T  |    | [T=tone, S=semitone]       |

The opening lines (i.2–5) comprise these notes almost exclusively. In lines i.7–10 (again, skipping the problematic sequence in i.6), the notes ι ζ become somewhat prominent, which together with β (twice in col. i, but see below) make up the next tetrachord in the Ionian conjunct scale (*Mesê* to *Nêtê synêmnenôn*). Excepting line i.6, then, the scale for column i comprises τ plus two conjunct tetrachords, a perfect octave:<sup>28</sup>

|    |              |    |    |    |              |    |    |                               |
|----|--------------|----|----|----|--------------|----|----|-------------------------------|
| τ  | χ            | φ  | ς  | ο  | β            | ι  | ζ  |                               |
| 22 | 27           | 28 | 31 | 34 | 35           | 40 | 43 |                               |
| e  | f#           | g  | a  | b  | c'           | d' | e' |                               |
|    | └──────────┘ |    |    |    | └──────────┘ |    |    | [tone + conjunct tetrachords] |
| T  | S            | T  | T  | S  | T            | T  |    |                               |

<sup>26</sup> Column height for literary rolls tends to the range 15–24.5 cm: see Johnson (1992) 180–6, 268–82.

<sup>27</sup> Here and throughout I use the reference numbers associated by modern editors with the list of symbols in Aristides Quintilianus: see the tables of Barker (1989) 427–9; similarly West (1992a) 256. (Reference numbers in Pöhlmann (1970) 144 and Chailley (1979) 185 are off by three since the lowest three symbols are excluded.)

<sup>28</sup> This series could also be the bottom of the Hyperionian scale (*proslambanomenos* to *mesê*). The modulation in column ii would then be *κατὰ τόνον*, which is less tidy theoretically—but this consideration comes into play only if that is in fact the same song.



But after the lacuna that intervenes between the bottom of column i and the top of column ii the composer modulates into a slightly different scale. We cannot be certain that this is the same song (§3.0). But if so, the composer has shifted to the Ionian disjunct scale. That is, the scale still begins at τ and encompasses two tetrachords, but the two tetrachords no longer overlap:

|          |                       |          |          |          |                       |            |            |                       |                               |
|----------|-----------------------|----------|----------|----------|-----------------------|------------|------------|-----------------------|-------------------------------|
| τ        | χ                     | φ        | ς        | ο        | κ                     | ι          | ζ          | δ                     |                               |
| 22       | 27                    | 28       | 31       | 34       | 39                    | 40         | 43         | 48                    |                               |
| <i>e</i> | <i>f</i> <sup>#</sup> | <i>g</i> | <i>a</i> | <i>b</i> | <i>c</i> <sup>#</sup> | <i>d</i> ' | <i>e</i> ' | <i>f</i> <sup>#</sup> | [tone + disjunct tetrachords] |
|          | ┌──────────────────┐  |          |          |          | ┌──────────────────┐  |            |            |                       |                               |
| T        | S                     | T        | T        | T        | S                     | T          | T          |                       |                               |

This sort of modulation, natural for a composer used to thinking in tetrachords, seems to have been common in ancient music. Several sources mention the practice of modulation (μεταβολή) ‘by system’ (κατὰ σύστημα), by which is meant a shift from conjunct to disjunct tetrachords (in effect, from the Lesser to the Greater Perfect System, in the awkward terminology of ancient theorists). Aristides Quintilianus twice mentions a ‘circular’ movement up and down the scale whereby one ascends using conjunct tetrachords and descends using disjunct tetrachords—so natural did the modulation feel.<sup>29</sup>

So far, all is more or less as expected. The ambit of the melody is restricted to a single note over the octave, the melody line tends to prefer very small steps (with, however, more colourful phrasing at the end of i.4, the start of i.10, and the finale at ii.5), the modulation is of familiar type, from conjunct to disjunct tetrachords, and the melody is true to the selected notation key—the composer imports only τ, borrowed from the chromatic genus, and that in the early lines where he is working sinuously within a very limited compass and feels the need for an additional semitone interval.

In this context, the musical sequence in i.6 is highly unexpected. First, some palaeographic observations. The ductus of ϑ seems deliberately to distinguish itself from φ: the writer writes ϑ without the evident ease with which he executes the familiar letter φ (and note the small round bowl, not the flattened oval of φ; the hasta carefully penned from the top of that bowl, noticeably different from the long hasta of φ). There can be little question that the writer is trying to signal a different note. That this note is, as it appears, *koppa* (#10) is confirmed by the context, for the notes that conclude the melodic sequence († ×) match notes nearby in the notation tables (#6, #3). These concluding notes are not in serious doubt: † is *tau* rotated 90° to the right, a symbol which matches only #6 (vocal) or #21 (instrumental, thus very improbable); the left upper oblique of × is rubbed away, but nonetheless the symbol can be only #3 (vocal). Taken together, the three notes ϑ † × form a tight sequence in the vocal notation. The composer is here, as so often in ancient music, working densely within a tight compass.

The other notes in line i.6 are more problematic. At first glance *w* seems likely *omega* (#25 = *f*), for the note approximates the letter form (Ω) usual for this period.<sup>30</sup> But the ductus is noticeably angular in appearance, and the resulting musical interpretation is difficult. For not only is *w* = #25 = *f* exharmonic, but the sequence in line i.6 would then jump up and down the interval of a sixth four times, which in general terms seems uncharacteristic of ancient Greek

<sup>29</sup> Aristides Quintilianus 1.9 (16), 1.12 (29); cf. Cleonides 15 Menge (205); Ptolemy *Harm.* 2.6. Barker (1989) 329 n.46, notes that Cleonides’ separate classification of this type of modulation suggests its important role in ancient music. Other examples of modulation κατὰ σύστημα in surviving documents: Athenaeus, *Paeon* (see analysis in Chailley (1979) 155ff.); *POxy* 3704 (see Haslam (1986) 46); *POxy* 3162 (Haslam (1976) 69).

<sup>30</sup> *Omega* is unexampled as a musical note among the other papyri. M.W. Haslam remarks on a note resembling *omega* in *POxy* 3161 but favours a different interpretation: see Haslam (1976) 62.

music.<sup>31</sup> On the other hand, the angular appearance of *w* recalls #13 = *B* in the notation tables, and *B* is so superior musically—resulting in the usual tight interval of a single tone for the sinusous movement in line i.6, and a concluding drop of a fourth at the end of i.4—that it seems the necessary interpretation. Here, then, the composer has modulated to the lowest notes of the Ionian system, in theoretical terms the base of the Hypo-ionian notation key, where #6 is *proslambanomenos*, and #10, #13 the moveable notes of the first tetrachord; #3 is off the scale altogether. It is striking, though, that the low note plus tetrachord parallels the ambit we noted earlier for the principal notes in column i:

|            |           |              |          |          |  |
|------------|-----------|--------------|----------|----------|--|
| ×          | †         | [3]          | ♀        | <i>w</i> |  |
| 3          | 6         | [7]          | 10       | 13       |  |
| <i>E#?</i> | <i>F#</i> | [ <i>G</i> ] | <i>A</i> | <i>B</i> | [semitone(?) + tetrachord <i>F#</i> – <i>B</i> ] |
|            |           |              |          |          |  |
| S?         | S         | [T]          | T        |          |  |

Two further problems remain, both intractable. The first is a matter of speculation. Given the framework of notes used elsewhere, × = *E#* surprises, and one wonders if *E* (that is, a full tone lower than †) may be meant. The note × = #3 is not only unique here among ancient documents,<sup>32</sup> but it is a mild surprise to find it at all: the lowest three notes are not part of any notation key, thus do not appear in the Alypian tables and are sometimes omitted in modern reference tables; notes #1–3 are known to us from the manuscripts of Aristides Quintilianus, but are ‘generally supposed’ (so Winnington-Ingram) to be late additions to the system.<sup>33</sup> Inasmuch as symbol #3 is so rare, one wonders if there might not be confusion as to its significance. The composer in every other case ends the triseme sequence with *e* (and probably with *f#* – *e*: i.4, cf. i.5, perhaps also ii.4), and the exharmonic movement down a semitone sounds rather odd—but nothing can be proven.<sup>34</sup>

The second problem regards a more central matter of interpretation. The symbol 3 will initially be read as *ksi* (#35, *c*′), despite the slight palaeographical oddity that the final stroke of the tail does not pull back to the right. 3 = #35 = *c*′ is, as we have already seen, an expected part of the notes that form the frame for the melody in i.1–5 and i.7–10. So its appearance in i.4 (a movement of a third) is unremarkable. But if 3 is interpreted in this way the musical movement at i.6 is rather bizarre, a sudden leap of a third over an octave; while a different note of similar appearance in the Alypian tables, 3 = #7 = *G*, would fit in tightly with the sequence at i.6. But that latter interpretation would be then equally bizarre for the musical context of i.4. Since the same note seems intended in both places, I have thought it best to assume that the sudden shift to a much lower range is a dramatic flourish intended to accompany the word *μαντεύσομαι*. But I am not sure.

<sup>31</sup> Discussion of the general tendencies in West (1992a) 191–2. Among extant examples, *POxy* 3161 seems to contain repeated leaps of a sixth or seventh, but almost every case is doubtful, most very doubtful, as the editor (M.W. Haslam) notes *ad locc*. Similarly, in the Oslo papyrus, the well-preserved portions show almost uniformly small steps, whereas areas characterized by bold leaps are largely uncertain (though occasional sixths and sevenths are certainly present), as pointed out by the editor: Winnington-Ingram (1955) 51–2. Ancient music, like any music, does of course make use of larger intervals (cf. the apparent seventh at A.i.10 here), but these are usually reserved for the occasional dramatic effect. A sudden leap, or leap with return, is characteristic; repeated leaps of a sixth within a few notes is not.

<sup>32</sup> The note is read with a question mark in *PLeid* inv. 510, 4.3 by its first editor, Jourdan-Hemmerdinger (1981); but Matthiesen (1981) states that the line contains no musical notation at all, and from the plate (see Matthiesen (1981) 24), the reading does seem very problematic. But I have not seen the papyrus (nor has Matthiesen, working from a slide).

<sup>33</sup> Winnington-Ingram (1978). The lowest symbols (#1–3) are omitted outright by Pöhlmann (1970) 144, in his notation table, and given special status (#01, 02, 03 prior to #1, 2, 3) in Chailley (1979) 185, cf. p. 134.

<sup>34</sup> M. L. West suggests (*per litteras*, 1998) that the lowest note may be *E#* and not *E* simply because the singer could not comfortably get down to the *E*.

In short, then, the first song works generally within a well-defined frame of notes in the Ionian notation key that modulates (unless col. ii is a second song) between conjunct and disjunct tetrachords. At line i.6, however, the word *μαντεύσομαι* is singled out for highly dramatic treatment, a shift to the low end of the singer's range. The shift down has a practical side-effect for analysis, since it tells us that the singer is male, and, as written here, a baritone voice. But *why* this wild leap down the scale? The answer, I think, has to do with the drama, and with the dramatic presentation of the words. At exactly the point of this extraordinary plunge into the bass, the singer begins to mouth *μαντεύσομαι*. Now Apollo's priestess at Delphi is said by Plutarch (*de def. orac.* 438a) to have suffered a change of voice when the divine spirit enters her body, and voice changes are a common signal of spirit possession in many cultures.<sup>35</sup> Could it be, as M.L. West suggests, that 'some seers prophesy in a spiritlike *basso profundo*?'<sup>36</sup> Typical Greek verbs for the Pythia's utterance suggest little more than shouting, but some support for a shift down to the bass can be found in the *Aeneid*, at the point when the Sibyl is possessed with the voice of Apollo—for Virgil chooses the verb *remugit* (6.99) to describe the sound she makes. The highly dramatic treatment of *μαντεύσομαι* may be taken, then, as a vivid example of what is meant by 'mimetic' music (for which [Aristotle], *Problems* XIX.15 is the *locus classicus*).

The melodramatic feeling of the bass plunge at i.6 is in keeping with the composer's style elsewhere. For not only are melisms generally frequent, but the composer apparently ends the song (ii.5) with an unparalleled flourish, a melism with fully nine notes to the syllable (ending, interestingly, with *mesê*).<sup>37</sup> Moreover, the range of the song is extraordinary: the other musical documents range from a span of a seventh to a twelfth,<sup>38</sup> but here the notation scale requires a range of over two octaves. Song A is then a composition written for a 'big' voice, one with wide range and able to drop suddenly to the deepest depths of the scale, and it contains a musical setting with plenty of scope for a highly dramatic presentation—details consistent with, indeed suggestive of, the scenario of a star performance (see introduction).

*Song B.* The second song is sparsely represented but so far as it goes contains the following notes:

|          |          |          |           |           |           |           |                                  |
|----------|----------|----------|-----------|-----------|-----------|-----------|----------------------------------|
| τ        | φ        | ο        | ι         | ζ         | α         | υ         |                                  |
| 22       | 28       | 34       | 40        | 43        | 48        | 49        | [reference number]               |
| <i>e</i> | <i>g</i> | <i>b</i> | <i>d'</i> | <i>e'</i> | <i>f#</i> | <i>g'</i> | [conventional modern equivalent] |
| 4?/1?    | 1        | 1        | 1         | 2?/5?     | 6         | 6         | [frequency count]                |

The interpretation of the shallow bowl of υ as *omega hupstion* (#49) is consistent with the musical context: as often in ancient music, the composer repeatedly visits adjacent notes in a narrow compass. Exactly the same form of this symbol (with a musical context leading to the same

<sup>35</sup> In general terms, possession by a spirit is marked by a change in the mode of speech, whether the obscuring of the content (from gibberish to hexameters) or the use of a different pitch of voice (usually very high or very low). See Maurizio (1995) 81–3 and the bibliography there cited. Most ancient depictions of spirit possession are unclear as regards the voice pitch. But when Cassandra is possessed by Apollo in the *Agamemnon*, Aeschylus imagines a high-pitched voice (cf. θροῶ, a woman's shriek, at 1137, 1140; comparison to a nightingale's cry at 1146; κλαγγῆ μελο-τυπεῖς ὁμοῦ τ' ὀρθίοις ἐν νόμοις at 1152). On the other hand, the word Plutarch uses to describe the change of voice is τραχύς, which, interestingly, is also the usual term in Greek for a boy's voice, when it breaks (*LSJ* I.1 s.v.).

<sup>36</sup> *Per litteras* (1998). Though this passage had early on reminded me of demonic possession as depicted in fiction like *The Exorcist*, I would never have considered the interpretation seriously had not Dr West brought to notice *Aeneid* 6.99 (on which see below).

<sup>37</sup> West (1992a) 202 declares three notes the outside limit for what an ancient composer thought appropriate to a single syllable. West emended that statement in his edition of *POxy* 4466 (West (1998) 99), which exhibits a six-note melism. The nine-note melism here is therefore highly unusual, though it must be added that we have very few other witnesses to the end of a song. (That the song ends here is however not certain: see commentary §1.2.)

<sup>38</sup> Details in West (1992a) 274–5.

interpretation) is found in *POxy* 3704; and in more fragmentary contexts in *POxy* 4462, 4466.<sup>39</sup> The notation key is the same as that of the close of the previous song, in formal terms the central section of the Ionian key in the diatonic genus, with the central tetrachords disjunct (*Lichanos hypatôn* to *Tritê hyperbolaiôn* in the Greater Perfect System, with  $\chi$   $\varsigma$   $\kappa$  not represented in what remains):

|          |                       |          |          |          |                       |           |           |                       |           |
|----------|-----------------------|----------|----------|----------|-----------------------|-----------|-----------|-----------------------|-----------|
| τ        | [χ]                   | φ        | [c]      | ο        | [κ]                   | ι         | ζ         | α                     | υ         |
| 22       | 27                    | 28       | 31       | 34       | 39                    | 40        | 43        | 48                    | 49        |
| <i>e</i> | <i>f</i> <sup>#</sup> | <i>g</i> | <i>a</i> | <i>b</i> | <i>c</i> <sup>#</sup> | <i>d'</i> | <i>e'</i> | <i>f</i> <sup>#</sup> | <i>g'</i> |
|          |                       |          |          |          |                       |           |           |                       |           |
| T        | S                     | T        | T        | T        | S                     | T         | T         | S                     |           |

The ambit is then one note to either side of the disjunct tetrachords. But in practice, the composer seems mostly to restrict himself to a much smaller range for a given part of the song, as we expect. In the first four lines, all but one note are within a fourth (*d'* to *g'*); by the last line (ii.10), the composer has shifted to a lower register, but here too keeps, it seems, within narrow compass (*e* to *b*, a fifth). Difficulty of interpretation arises, however, in line ii.9. At ii.6 and ii.8, the writer clearly notes ζ; equally clearly at i.7 τ. But at ii.9 we find successive notes that are difficult to identify, resembling τ but with a short tail at the bottom and a slight lean to the vertical stroke not seen in any of the several other examples of τ in this text.<sup>40</sup> Does the writer intend ζ here? The musical context would certainly suggest it: if ζ, we find the usual tight interval (*g'* to *e'* to *e'* to *f*<sup>#</sup>); but if τ, two very wide leaps, both over an octave (*g'* to *e* to *e* to *f*<sup>#</sup>). Are the wide intervals part of the dramatic style, a grandly florid emphasis on the word ὄρνις? (If the same composer, cf. the treatment of μαντεύσομαι in Song A.) Or does the musical context so clearly demand ζ that the writer is content with careless notation? The latter seems the more sensible musical interpretation, but what then of line ii.7? Is this line another instance of the florid style, perhaps a dramatic shift upward of over an octave to heighten the shrill effect of κλάίει? In the transcription, I interpret τ in ii.7, ζ in ii.9, but with more than the usual uncertainty.

### §3.2 The Rhythmical Notation

The rhythmical relation of note to syllable is signalled by notations familiar from the other musical papyri. The Yale papyrus is unusually rich in these notations: particularly remarkable are the repeated use of triseme, the use of leimma, a means (apparently) for marking triplets, and the specific way that the writer deploys the stigme.

§3.2.1 *Diseme and Triseme.* From the Anonymus Bellermanni (§1, 83 Najock), we know that the diseme, a horizontal stroke over a note or notes, signals a double length; and the triseme, in form  $\cup$  in the medieval tradition but  $\neg$  in all ancient witnesses, signals a length of three time-units. Palaeographically, the triseme symbol here matches the instances in the Seikilos inscription, that is, with a straight arm at right ( $\neg$ ) and not with the bent arm ( $\cup$ ) of the instances doubtfully identified in other papyri.<sup>41</sup>

<sup>39</sup> See remarks in Haslam (1986) 45. A siglum similar in form (and in a like musical context) also appears in a very fragmentary context at *PLeid* 510, line 8: see plate and disegno in Matthiesen (1981) 24. The letter shape seems in any case a natural formalization of the type of inverted *omega* found in e.g. the Michigan papyrus: cf. *PMich* inv. 2958, 20.5, 10.

<sup>40</sup> The same problem of distinguishing among τ ζ and 7 arises in *POxy.* 44.3161 → 1. 4, and 2.7. See comments in Haslam (1976) 59 *ad loc.* and 62. I do not here seriously consider the possibility of 7 = #19 = *d* since (1) the short tail, esp. in ii.9.2, suggests otherwise, and (2) the note would be musically incongruous.

<sup>41</sup> As in the Oslo and Michigan papyri. See below, n.47.

Diseme is common in the musical documents, but its application in several papyri (such as *POslo* inv. 1413, *PMich* inv. 2958, *POxy* 2436, 3161, 3162) is disconcertingly unsystematic. The Yale papyrus is similarly confusing. The presence or absence of diseme where multiple notes reside over a syllable shows some consistency:

*Multiple notes over long syllables*

7× in A (i.3.3-4, 6.3-4, 6.5-7, 7.6-7, 8.6-7, 10.4-5, ii.4.4-5), none in B: the diseme is written above multiple notes over a long syllable; all are tied together with dicolon or hyphen. Similarly, 3× in A a triseme is written above multiple notes over a long syllable.

4× in A (4.5-6, 4.7-9, 9.6-8, 10.1-3), 3× in B (ii.7.2-3, 8.1-2, 9.4-5): multiple notes over a long syllable have no diseme or triseme; in every case introduced by dicolon (not hyphen).

That is, wherever the diseme is not written over a multiple note sequence, the notes are introduced by dicolon—an obvious difference in context the significance of which will be discussed below (§3.2.2). But the use of diseme over single notes seems irrational:<sup>42</sup>

*Single notes over long syllables*

8× in A (i.1.6, 3.5, 3.10, 4.9, 4.17, 5.2, 5.3, 9.5), 3× in B (ii.7.1, 9.2, 9.3): the diseme is written above a single note over a long syllable.

10× in A (i.3.5?, 4.14, 5.7, 7.3?, 7.8, 8.3, 10.6, 10.9, ii.4.1, 4.2), 4× in B (ii.6.1, 7.4, 8.5, 10.2; perhaps also 9.1): a single note over a long syllable has no diseme or triseme.

No contextual differences account for why the diseme is sometimes written over a long syllable and sometimes not. Two possibilities then: (1) Over a long syllable, a single note with diseme is twice as long as a single note without diseme. In our papyrus, one would assume therefore that lack of diseme shortens the metrically long syllable, since a double long would make triseme difficult to interpret. This strategy has, however, the disagreeable consequence that the musical rhythm has then little relation to the metrical rhythm.<sup>43</sup> (2) Over a long syllable, a note twice as long as a short syllable should always be read, regardless of the presence or absence of diseme, and the diseme is then written (or not) capriciously. This surprises, since we might reasonably expect the musical notation to be readable without attention to the metrical scheme of the poetic text. But that an ancient Greek vocalist easily sensed the length of a long syllable can hardly be doubted, even in the second century. As it happens, we can find fairly direct confirmation for the latter interpretation by study of short syllables.

*Long notes over short syllables*

2× in A, but both dubious. At A.i.4.2, a triseme seems to mark a short syllable, but more likely the triseme is meant to go with the following syllable. At A.i.9.3-4, it appears that two notes are set over the syllable which, if the word is correctly read, would be short. But in the absence of diseme there is no reason why the two notes may not be a half-beat apiece.

<sup>42</sup> As also in the other papyri already mentioned: *cf.* remarks in Winnington-Ingram (1955) 40–1.

<sup>43</sup> Though the musical rhythm overrides the metrical rhythm in the Berlin paeon (a special case, however, since there all syllables are long), and to a lesser degree in the Oxyrhynchus Christian hymn (another special case, since it is necessary to accommodate to anapaests a fixed religious formula: *POxy* 1786, line 4). West (1992a) 130 aptly cites A. M. Dale: ‘no poet would write words in elaborate metrical schemes merely to annihilate and overlay these by a different musical rhythm’ (less compelling, however, if poet and composer are distinct). This degree of discrepancy is, we should note, quite different from allowing the music to introduce minor variations, such as the protraction of the long in the Seikilos inscription.

If long syllables could willy-nilly become ‘short’ by virtue of the musical context (thus breaking down the short–long opposition fundamental to the syllabic rhythm), one would expect analogous lengthening for short syllables—but nothing of the kind occurs. Only twice in our text might a short syllable be lengthened, but the first instance is both extraordinary (successive trisemes) and doubtful, the second instance unconvincing as evidence for lengthening the syllable. In the other musical documents, too, absence of diseme over a long is common, but diseme over a short syllable is extremely rare.<sup>44</sup>

On the other hand, there can be little question but that long syllables are not all simply twice the length of short syllables in the singing. The repeated use of triseme makes this clear. Here at any rate the composer allows prolongation of the long syllables, thus in some sense complicating the opposition of short and long—though how exactly the prolongation relates to the metrics of the text remains unclear. There are also a few spots where three notes are set to the same long syllable, and it is possible that these cases intend three times the basic time-unit (but this will not be the tentative conclusion reached here: §§3.2.2, 3.2.3).

Whether note sequences with diseme can also indicate rhythms beyond two χρόνοι πρώτοι is more doubtful. Here as in other papyri the diseme seems often to be written more over one note than the other, such as  $\bar{c}o$  in A.i.3. In such cases editors have mostly followed Winnington-Ingram’s lead in assuming that the placement of diseme is too casual for its position to be significant,<sup>45</sup> and thus that the diseme always regards the syllable and not the note. In the Yale papyrus, too, such an argument may hold for instances where diseme and hyphen are used together (the overbar at i.3.3 and 10.4 seems perhaps meant to intrude upon the following note, tied with the hyphen; the overbar at i.6.6 and ii.5.8 more certainly regards the three note sequence, all tied with hyphen), though the case is less strong where notes are introduced by dicolon (at i.6.4 the placement over the second note seems rather deliberate; less secure is the similar placement at 8.7). Note that in *POxy* 3162, our most carefully written musical papyrus, a two-note sequence introduced by dicolon has the diseme placed with precision above the second note (this papyrus contains no instances with hyphen).<sup>46</sup> This is suggestive, but the Yale papyrus does not show that same precision of placement. A comparison of disemes at A.i.6.4, 6.6, and ii.5.8 is instructive: at first, i.6.4 seems clearly to mean ‘take diseme with the second note’. But at i.6.6 the placement of diseme is identical with the following three-note sequence, which, when compared with the similar sequence at ii.5.8, surely is meant to reference not the note but the syllable. I therefore transcribe diseme as regarding the syllable.

That the triseme, however, regards the note and not the syllable seems more secure. In all cases where triseme is used with a two-note sequence (A.i.4.4, 5.6, 6.10), the mark is placed with what appears great deliberateness over the second note of the sequence. What exactly this intends I am less sure. Logically, it should mean that the note with triseme has a value three times the value without, and thus that the sequence as a whole is the rhythmical equivalent of four time-units:  $\text{♪♪}$ . But it is by no means improbable that the triseme intends instead to mark a second note longer than the first, to a total value of three time-units:  $\text{♪♪}$ . Under this second interpretation, analogous to our interpretation of diseme, the triseme in effect marks the syllable—though the position of the triseme makes clear which of the two notes is lengthened. Again, which interpretation is correct seems not strictly solvable in the absence of a clearer understanding of the underlying metrical rhythm. Moreover, other papyri provide but little help.

<sup>44</sup> Diseme over a short syllable: only at *POxy*. 2436 ii.5.6 and ii.5.12 (both uncertain, and the latter very doubtful; probably to be read with the following [long] syllable); *POxy* 3704 fr. 1→3 (very uncertain); *POxy* 3161→1.8 (εμὸν, secure).

<sup>45</sup> Winnington-Ingram (1955) 35.

<sup>46</sup> ‘... which shows clearly that the sign applies to the note as opposed to the syllable, and means presumably that [note 2] is to be twice the length of [note 1].’ Haslam (1976) 71.

Triseme is a rare notation, occurring certainly only on the Seikilos inscription, in a couple of small fragments recently published in the Oxyrhynchus volumes, and possibly over a lone note in a scrap in the Vienna collection, so the comparative material is sparse.<sup>47</sup> But in the Seikilos inscription (where, however, the triseme is written over both notes) the iambic rhythm requires  $\text{♪♪}$ , and thus I transcribe here.

Triseme occurs in two contexts: the first (A.i.3.6) noting a rest of three time-units (if the interpretation here is correct: §3.2.3); the second (A.i.4.4, 5.6, 6.10) at word ends. These latter occur over two-note sequences in the only parts of Song A where the syllabic rhythm diverges significantly from dactylo-anapaestic patterns:

|       |                          |                  |  |  |  |
|-------|--------------------------|------------------|--|--|--|
| A.i.4 |                          | ] ∪ ↵ -          |  |  |  |
|       |                          | ]πo- δων cōv ... |  |  |  |
| A.i.5 | - - ∪ ↵ - [              |                  |  |  |  |
|       | ... καὶ γεύ- co- μαι cōv |                  |  |  |  |
| A.i.6 | - - ∪ ↵ [                |                  |  |  |  |
|       | ... μαν- τεύ- co- μαι    |                  |  |  |  |

Given the new clause that follows immediately in i.4 (ἄcω δὲ κτλ), one might also wonder whether this sequence marks the end of a colon. In the context, the triseme could, in effect, be making up the second short in a dactylo-anapaestic beat (that is, ∪ ↵ substitutes for ∪ ∪ -), but the arsis dots point rather to a more complex rhythm (§3.2.4). All this ignores, however, the significant problem of i.4.2, where before the triseme noted at i.4.4 (over the ultima of ]ποδων), a second triseme is written. The placement of the note is ambiguous, but the rhythm is anomalous irrespective of whether the triseme is intended to lengthen the singing of πo- or yet further to lengthen the melism at -δων (the latter perhaps more likely: see commentary, §1.1). In any event, this extraordinary double triseme will serve to warn us against too facile a solution of rhythmical questions on the basis of these uncertain and fragmentary remains.

In short then, diseme and triseme interlock as a system of rhythmical notation, which however admits of two interpretations. Under the first, both diseme and triseme regard note and not syllable. Thus  $\overline{\text{x}}\overline{\text{x}}$  would mean  $\text{♪♪}$ ;  $\overline{\text{x}}\text{x}$  =  $\text{♪♪}$ ;  $:\text{x}\overline{\text{x}}$  =  $\text{♪♪}$ ;  $\overline{\text{x}}\overline{\text{x}}$  =  $\text{♪♪}$ ;  $\text{x}\text{x}$  (not extant) =  $\text{♪♪}$ . But for the reasons presented here—which, it should be emphasized, are suggestive rather than compelling—I have preferred a second interpretation, by which both diseme and triseme in effect regard the syllable, though triseme also indicates which note is lengthened. Thus  $\overline{\text{x}}\overline{\text{x}}$ ,  $\overline{\text{x}}\text{x}$ , and  $:\text{x}\overline{\text{x}}$  all =  $\text{♪♪}$ ;  $\text{x}\overline{\text{x}}$  =  $\text{♪♪}$ ;  $\text{x}\text{x}$  (not extant) =  $\text{♪♪}$ .<sup>48</sup>

<sup>47</sup> Trisemes in other texts: the Seikilos inscription, 6 *bis* (both over single note), 8 (over two notes, no hyphen), 9 (over two notes with hyphen), used at end of metron to fix the iambic rhythm; *POxy* 4464 lines 4 (over the first note of a pair, no hyphen), 6 (over a single note); *POxy* 4463, line 15 (over two notes with hyphen; from the plate perhaps not quite certain, inasmuch as the arm is indistinct, and the result uncomfortably similar to the diseme with dot at line 10); *PVindob* G 29.825c 2 (a tiny scrap, but over a single note; regarded as certain by the editors, though from the plate the remains appear too scanty to be unambiguous—remains of a diseme with very slight tick upwards at the end would yield the same result). Less certain: *POslo* inv. 1413, 2.b.9 (over two notes with hyphen), 16.9 (over two notes with hyphen), 17.2 (over a single note), 18.7 (over a single note), all doubtful but the latter three at the end of an iambic trimeter (Pearl and Winnington-Ingram (1965) 191; Pöhlmann (1970) 125); *PMich* 2958, all doubtful (for the possibilities and their merits, see Pearl and Winnington-Ingram (1965) 191–2; Pöhlmann (1970) 138–9); *POxy* 3161 → 4.3, only ‘possible’ (Haslam (1976) *ad loc.*); West (1992a) 266 n.29 notes, ‘one of the unpublished Hellenistic fragments appears to have the form ∪ but reports *per litteras* that this reading is now to be abandoned. Finally, Matthiesen (1981) 28 thinks to find a triseme at *PLEid* 510, line 10 in ‘a form not recorded in the treatises’ (3 vertical lines), but this seems no more likely than the pentaseme he records at line 12 of the same (very mutilated and uncertain) text.

<sup>48</sup> See now *POxy* 4464 line 4, where an example of  $\text{x}\text{x}$  is clearly evident. The sequence is interpreted without discussion by the editor as  $\text{♪♪}$ : West (1998) p. 95. If the interpretation here is correct, that will need adjustment.

§3.2.2 *Dicolon and Hyphen*. The discussion so far has assumed that dicolon and hyphen are written in the usual way, to separate and group. A further, more hesitant assumption has been introduced that the notation group and the syllable match in length, except where triseme marks a prolongation. The question now arises as to how these symbols may differ from one another.

Both dicolon and hyphen define a group: dicolon by segregating what follows from what precedes, hyphen by tying elements together directly. In many cases the two seem to operate as alternatives without obvious distinction. A clear instance of this can be seen in lines 5–6 of the first column. In successive lines, the composer introduces phrases which are markedly parallel: verbs in the same tense and person that rhyme over three syllables; metrically the same shape; in each case a melism over a final syllable marked with triseme.


: +  $\overline{\text{I}}$

i.5    κατ γευ-σο-ματ


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i.6    μαν-τευ-σο-ματ









In such a case, a functional equivalence seems very probable; and dicolon is then written in the one line, hyphen in the other *ad libitum*. (Of course a more subtle difference may be intended, such as in the phrasing, but in the absence of ancient testimony this is irrecoverable.) Similarly, there is no obvious functional difference between a case like  $\overline{\text{CO}}$  in i.3 and  $:\Delta\upsilon$  in i.7, and other papyri confirm our inability to find a general rule for writing the one as opposed to the other. With that said, there are, however, some ways in which dicolon and hyphen seem to distinguish themselves.

We noted earlier (§3.2.1) that diseme always accompanies a multiple note sequence written over a long syllable and joined by hyphen ( $\overline{\text{XX}}$ ), but that diseme is usually omitted in the same cases where the group is introduced by dicolon ( $:\overline{\text{XX}}$  occurs, but only once, whereas  $:\text{XX}$  occurs 7x). The difference may be due to a capricious habit of the writer (there are too many examples to be coincidence), but if significant, it seems to imply that in the absence of triseme the dicolon unambiguously fixes the length of what follows, presumably to the length of the associated syllable. This hypothesis accords neatly with the fact that, although the dicolon is often used where hyphen might also be used, dicolon is the usual choice where the value of the notes might otherwise be ambiguous. Thus where a melism occurs over a short syllable, dicolon is generally employed: so here at i.9; and also in *POxy* 3704→ (1.6), *POxy* 3161→ (2.4, 4.4), *POxy* 1786 (lines 3, 4), *POxy* 4466 (line 4), probably *POslo* 1413 (4.8–9, 14.12–13), and once in *PMich* 2958 (line 30), which however also joins *POxy* 4463 (line 8, *bis*) in using hyphen instead for this case.<sup>49</sup> The distinction proposed above also would allow for more complex groupings to be unambiguously represented: thus, regardless of how meticulously diseme is (or is not) written,  $:\overline{\text{XX}}\overline{\text{X}}$  can be used to indicate  (as at *PBerol* 6870, lines 3, 8, 10; probably *POslo* 1413, line 18; several times in *POxy* 1786; *PMich* 2958 alone omits dicolon in such cases). In the Yale papyrus, too, dicolon is combined with hyphen and diseme, but the hyphen is written under all three notes, which by the analysis followed here is then clearly a triplet, a very rare notation:<sup>50</sup> A.i.6  $:\overline{\text{W}}\overline{\text{O}}$ , ii.5  $:\Delta\text{ZO}$ .

<sup>49</sup> See Pearl and Winnington-Ingram (1965) 189.

<sup>50</sup> Triplets are otherwise known only in the extraordinary melism at *POxy* 4466, line 2, and in the Berlin Paean (and there but doubtfully): *PBerol* inv. 6870, lines 4 (over ultima of παγαί), 7 (πυρ-), on which see Winnington-Ingram (1955) 76, and Pighi (1943) 188; but neither reading is accepted in the re-editing by Pöhlmann (1970) 94. Very dubious are the readings of a triplet at *POxy* 2436 ii.4.8–10 (Turner and Winnington-Ingram (1959) 117) and *PMich* 20.12–14 (Pearl and Winnington-Ingram (1965) 189), where the hyphen seems to cover only the last two notes of a three-note group. Triplets may also be meant at *POxy* 4463, lines 4, 7, 13, interpreted however by the editor as .




§3.2.3 *Leimma* ('rest'; or *prolongation*). The rounded form of leimma (ϱ, as also in *PBerol* 6870, *PMich* 2958, *POxy* 1786, 3704, 4463, 4467) occurs four times, all in Song A, and in two different contexts. In the first (A.i.3.6), a long syllable at word end has above it a note with diseme; the leimma, with triseme, follows that. Note and leimma are written closely together (as space necessitates), but no hyphen or dicolon groups the two notes together. Since the leimma occurs at word end and without a tie to the preceding note, I take the symbol here to indicate rest rather than prolongation. In the other context, however, prolongation is clearly intended. In these three cases (A.i.4.9, 9.8, 10.3) the leimma occurs as the final notation in a three-note sequence introduced by dicolon and residing over a long syllable. All three occur in mid-word, a circumstance which argues strongly against a rest (*pace* Haslam's interpretation at *POxy* 3161 → 1.10). Not clear, however, is whether  or  (that is, ) is intended. The only exact parallel is *PMich* 2958 line 1, where the partial line and iambic rhythm admit either interpretation. The question arises once again to what degree the metrical rhythm can be refashioned by the musical rhythm. Do we assume here that the trio of notes must add up to a single 'long', and that protraction of the second note implies a necessary shortening of the first note? Or does the use of three notes imply three 'short' units, thus adjusting the 'long' to one and a half its usual length? In keeping with our analysis of dicolon, the former interpretation is adopted here. That then has the happy consequence that the leimma acquires a unique function, one distinct from diseme or triseme, which in turn helps to validate our interpretation of the system as a whole. It has been doubted whether triseme and leimma as prolongation can occur in the same manuscript<sup>51</sup>—but that follows only if we assume that both  $\overline{\times\times}$  and  $\overline{\times\times\overline{\rho}}$  mean . That  $\overline{\times\times\overline{\rho}}$  (without dicolon) can sometimes mean  seems guaranteed by *POxy* 2436.<sup>52</sup> But in the Yale papyrus, where both triseme and leimma are clearly evident, a different system must come into play. Here leimma is unlikely to mean , since, however we interpret diseme and triseme (§3.2.1), there is already a way to represent this rhythmic combination. That  $:\overline{\times\times\overline{\rho}}$  means  (or ) seems then an unforced conclusion, regardless of the importance one attaches to our (admittedly provisional) interpretation of dicolon.

The leimma in every case carries the stigme (arsis-dot). The dotting of leimma seems conventional—a natural consequence of the fact that, regardless of whether leimma marks protraction or rest, it cannot be the downbeat. In the musical papyri generally, either every leimma carries the stigme (including cases where the leimma comes in the midst of a melism, cf. *PBerol* 6870 lines 4, 7, 8, 10) or none of the leimmata carries the stigme—the only exception being *POxy* 3161.<sup>53</sup>

Twice (A.i.3.6, 9.8) the leimma is palaeographically close to *pi*, a possible if exharmonic musical note, but (1) all four leimmata occur in the unusual contexts described above, an extraordinary coincidence if some or all were simply another musical note; (2) the squared shape may at first seem odd, but the notation form is readily paralleled in *POxy* 1786 (and is natural enough once the siglum is no longer strongly associated with A).

§3.2.4 *Stigme* ('arsis-dot'). Stigme, a single point, is written indifferently above or to the right of the musical note (and above the diseme or triseme) as spacing demands. These dots are said by the Anonymus Bellermanni (§3 Najock) to mark the arsis (upbeat), but papyrological remains

(West (1998) 92–3). If dicolon means 'take the following group as equal to the underlying length of the syllable', that would help also to explain its odd use in the melism at *POxy* 4466, line 2, where the triplets might then better be taken as eighth notes, , and similarly at *POxy* 4465, line 5.

<sup>51</sup> Pearl and Winnington-Ingram (1965) 191; Pöhlmann (1970) 138.

<sup>52</sup> See Turner and Winnington-Ingram (1959).

<sup>53</sup> Leimma with stigme in *PBerol* 6870, *PMich* 2958, *POxy* 3704, 1786, 4463. Leimma without stigme in *POslo* 1413, *POxy* 2436, 4461.

of actual notation have often frustrated modern editors.<sup>54</sup> It is sometimes supposed that the problem is one of transmission or a copyist's negligence, but if the hypothesis is correct that the musical notation is often (though not always) written by a professional musician and with a view to performance (§2.2), then necessarily the dots are not incidental but are intended to guide the musician in the reading of the music. Where no system can be discerned, it seems more reasonable to look, not to scribal error, but for problems in interpretation. Fundamental in this regard is not only our incomplete understanding of the rhythmical nature of the music, including its relation to the metre, but also our uncertainty as to whether the presence or absence of a dot is in fact intended and not the result of papyrus damage. These considerations conspire with the partial lines to make analysis more than usually doubtful.

With that said, stigmata on the Yale papyrus are suggestive in some interesting ways. At several points in the dactylo-anapaestic rhythm, an apparently dactylic sequence is marked not with dots on the arsis or thesis of the dactyl, but on the dactyl as a whole. Some runs where the reading is fairly certain for both the presence and absence of the stigmata:

|               |      |                    |                           |
|---------------|------|--------------------|---------------------------|
| <i>Song A</i> | i.3  | το-ξά-τα           | (dactyl unmarked)         |
|               | i.4  | δε τα κά-τὰ-λί-δων | (central dactyl marked)   |
|               | i.5  | τὸ-ξὸ-χά-ρη        | (dactyl marked)           |
|               | i.8  | τεμ-πε-ᾶ θη-ρο[    | (dactyl marked)           |
|               | i.10 | βω-μο-ν ε-γῶ       | (leading dactyl unmarked) |
| <i>Song B</i> | ii.6 | μου-σι-κα          | (dactyl unmarked)         |
|               | ii.8 | μυ-ρο-με-νή        | (leading dactyl unmarked) |

This pattern seems to suggest, somewhat surprisingly, that we are dealing with runs of dactyls grouped rhythmically in pairs on the analogy of an anapaestic dipody. The situation is not, however, quite so simple as that. In two places, a dactylic rhythm dominates, but the dactyls are not marked as such:

|  |     |                            |   |
|--|-----|----------------------------|---|
|  | i.4 | ᾶ- <sup>?</sup> σῶ [δ]ε τα | (long marked, shorts not)                 |
|  | i.9 | πε- λά- γουc               | (first short unmarked, the second marked) |

In the second case the reading of the first syllable is not entirely certain (the dot may have rubbed away, though I think not), and the first case is in a confusing area of the papyrus where the line is corrected by the second hand; but these examples should nonetheless caution that much remains obscure.

At a few points in the papyrus, a different rhythm predominates, as we have seen. In these cases, we find the stigma written or omitted over elements in the form of iambic or trochaic feet (υ – or – υ or – ). Cases where the disposition of stigmata is clear:

|                |      |                             |                                  |
|----------------|------|-----------------------------|----------------------------------|
| <i>Song A.</i> | i.5  | ]σᾶ καὶ γευ- co- μάτ̣̣ cων  | (triseme over -ματ)              |
|                | i.6  | ]τρι-χά μάν- τευ- co- μάτ̣̣ | (triseme over -ματ)              |
| <i>cf.</i>     | ii.4 | τάς η- δο- νᾶ[σ             | (triseme possible over -νας)     |
|                | ii.3 | τε κρᾶ-τή-cω                | (short-long in lieu of triseme?) |

<sup>54</sup> *PBerol* 6870, Ajax fragment (see Winnington-Ingram (1955) 80); *PMich* inv. 2958 (see Pearl and Winnington-Ingram (1965) 186 and 191–2), *POxy* 3704, 3161; and there are often many exceptions in the papyri where stigmata seem more rational, as e.g. in *POxy* 2436.

In all these cases, stigmatized marks iamb or triseme, while the unmarked segment (in thesis) is trochaic. Given the fragmentary lines, full rhythmical analysis remains impossible (§3.3), but what seems clear enough is that in the earlier cases the rhythm is informed by units of  $- \cup \cup$ , whereas in the latter cases the rhythm is based instead on units of  $\cup -$  or  $- \cup$  (or triseme). The fact that the writer marks both  $\cup -$  and  $- \cup$  further suggests, perhaps, the analysis of a complex or ‘inverted’ metron (such as a dochmiac or choriamb or epitrite).

### §3.3. *Metre and Accent*

The partial lines frustrate full analysis of the metrical shape of the poetic texts. That both songs are largely dactylo-anapaestic is obvious, but little else is certain. The way in which stigmatized is deployed would seem to imply dactyls rather than anapaests, though this remains a tenuous conclusion (§3.2.4). In Song A, where we have more to work with, other rhythms seem to be introduced, but all involve the use of triseme, complicating the interpretation. Sequences such as  $- \cup \cup - - \cup \dots$  (i.7; cf. i.2, i.9) preclude in any case a simple dactylic metron, however the triseme sequences are resolved. The triseme sequences themselves are, as we have seen (§3.2.1), tantalizing but finally inconclusive. It is not even certain that the rhythm of the triseme is meant to resolve the poetic metre. The sequence

$\cup - - \cup - (-) [||?]$

recurs at i.5, i.6 (and cf. i.4, ii.4), which without regard to triseme suggests dactylo-epitrite in a form like  $(-) D - e (-) ||$ . If correct, the conclusion is significant, since dactylo-epitrite seems to have fallen out of favour in the second or first centuries BC,<sup>55</sup> and the likelihood would be, then, that we have here a poetic text from the Hellenistic era. But the conclusion remains only probable: if we locate period end after the triseme, an alternative analysis might be, for instance, a periodic introduction of dochmiacs (for which cf. the Grenfell fragment, CA 177).

We can be more positive about the significance of word accents. In the musical documents, non-strophic compositions tend to general but not absolute agreement between word accent and melody (as first remarked by Crusius over a century ago).<sup>56</sup> The Yale papyrus is no exception. Accommodation to the general rule that ‘the accented syllable is given a note at least as high as any other in the same word’ is fairly consistent. This holds true for words with acute accent 9× (*Song A*: *νάρκισσον*, i.2, *κρατήσω* i.3, *γεύσομαι* i.5, *μαντεύσομαι* i.6, *τέμπεα* i.8, *πελάγους* or *λαγούς* i.9; *Song B*: *κλαίει* ii.7, *μυρομένη* ii.8, *ὄρνις* ii.9), with circumflex 2× (*σῶν* i.4, *μᾶλλον* i.9), with grave 4× (*βωμὸν* i.10, *ἡδονὰς* ii.4, *μουσικὰ* ii.6, *γυνή* ii.10). Against this are only three exceptions: *ἄσω* at i.4 (if the interpretation of  $\beta = \#35 = c'$  is correct), *Κασταλίδων* i.4, *πλήσω* i.10 (and perhaps also *τοξοχάρη* i.7). The rule that these accents are ‘set at the summit of a rising and falling figure’ in the melody also generally holds: this is true even for *πλήσω* at i.10, and beside *Κασταλίδων* i.4 are only two exceptions (*γεύσομαι* i.5, *ὄρνις* ii.9). But more subtle rules inferred from the musical documents with less authority (since the rules hold less consistently) are not well exemplified in our papyrus, though the evidence is meagre. The rule that a syllable with circumflex is ‘often set on two notes of which the first is higher’ is violated by the two surviving examples in our papyrus (*σῶν* i.4, *μᾶλλον* i.9), both of which have a rising

<sup>55</sup> See the account in West (1982) 139–41: on the thin evidence we have, dactylo-epitrite, which was ‘in the fourth and third centuries [BC] the normal metre for what may be called educated bourgeois lyric’, fell out of fashion shortly thereafter.

<sup>56</sup> See discussion and bibliography in West (1992a) 198–200. In what follows, I use West’s formulation of the general rules (p. 199). The rules are drawn primarily from the practice of the Delphic hymns: see Winnington-Ingram (1955) 64–7.

pair of notes (but *cf.* possible ποδῶν i.4, with a falling pair). The rule that ‘when the accent falls on the final syllable of a word, and is not circumflex, and not succeeded by a grammatical pause, then the melody does not fall again until after the next accent’ receives mixed treatment: followed at i.4 and ii.4, violated at i.3 and i.10 (unless a grammatical pause after βωμόν?). The inattention to these lesser rules, particularly the last, accords with the practice observed in other members of the group we isolated at the start (*POxy* 2436, the Oslo papyrus, the Berlin Paean, the Michigan papyrus),<sup>57</sup> a natural result perhaps of the weakening intonation of the accent in later Greek. Like so many other characteristics of the Yale papyrus, then, this may represent not simply the habit in a single papyrus, but a general feature of musical texts from the early empire.<sup>58</sup>

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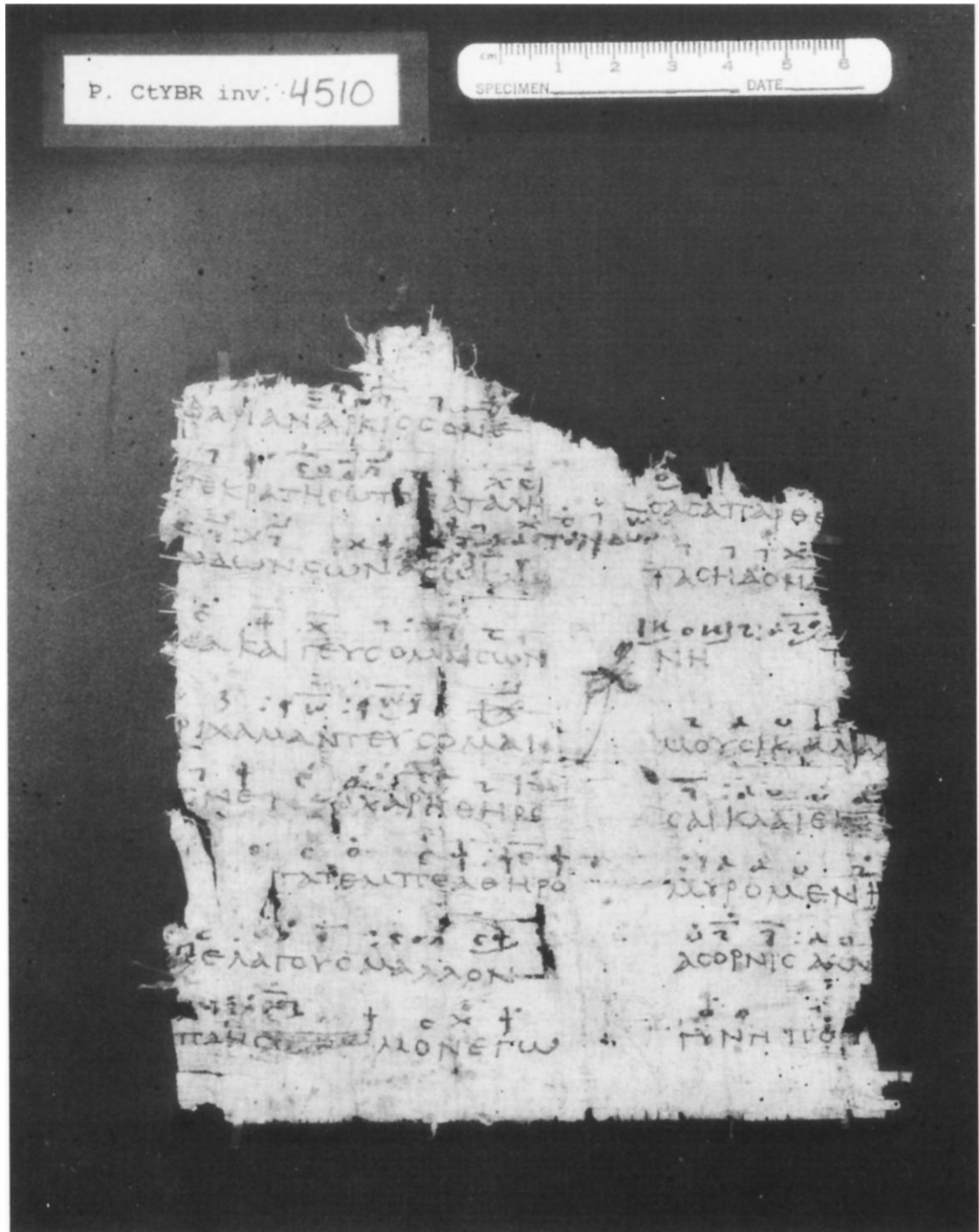
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<sup>57</sup> Winnington-Ingram (1955) 69–73; Pearl and Winnington-Ingram (1965) 187–8.

<sup>58</sup> I here record my deep gratitude for helpful comments and advice from R.G. Babcock, M.L. West, M.W. Haslam, B.P. Johnson; and for the Beinecke Library’s award of a John D. and Rose H. Jackson Visiting Fellowship in support of this study.

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A Greek papyrus of the early second century AD with musical notation:  
 PCtYBR inv. 4510 (13.0 x 14.2 cm).  
 Photograph by courtesy of the Beinecke Library,  
 Yale University, taken under infrared light.