

RICHARD JANKO

PARMENIDES IN THE DERVENI PAPYRUS: NEW IMAGES FOR A NEW EDITION

aus: Zeitschrift für Papyrologie und Epigraphik 200 (2016) 3–23

© Dr. Rudolf Habelt GmbH, Bonn

PARMENIDES IN THE DERVENI PAPYRUS: NEW IMAGES FOR A NEW EDITION*

*in memory of Walter Burkert and Martin West, ὀρθῶς γινωσκόντων,
and for Cagri Beşirli, Grant Comer and Jonathan Greene, eye-surgeons*

§1. The need for further work on the papyrus

The carbonized Derveni papyrus contains the most sensational new evidence to emerge since the Renaissance for Hellenic religious and philosophical views in the late fifth century BC. The treatise it contains has variously been ascribed to an early Stoic, a μάντις commenting on Persian religion, an Orphic initiator, a follower of Heraclitus, Socrates' acquaintance the religious fanatic Euthyphro,¹ a disciple of Anaxagoras like Diogenes of Apollonia or Socrates' teacher Archelaus of Athens,² or the 'atheist' Diagoras of Melos.³ There seems no end to the variety of suggestions, speculations, and conjectural readings; some may even feel that all the work that can be done to resolve such questions has already been done, and mere confusion is taking over. Fortunately this is not so; human ingenuity can pierce the Stygian darkness into which the flames of its pyre plunged this text.

The papyrus was officially published by T. Kouremenos, G. M. Parássoglou and K. Tsantsanoglou (henceforward KPT) in 2006, forty-four years after its discovery in a rescue-excavation at Derveni near Thessaloniki on 20 January 1962.⁴ 'Officially' means that they had full access both to the papyrus itself, which is conserved in the Archaeological Museum of Thessaloniki, and to the sets of infrared photographic prints which were made of it by Spyros Tsavdaroglou in 1962 and by Makis Skiadaresis in 1978. Both sets survive, largely complete, in the archives of the Archaeological Museum at Thessaloniki. The philologist originally in charge of the publication, S. G. Kapsomenos, who died in 1978, also contributed to the constitution of the text, an early version of which was published without authorization in 1982.⁵ Tsantsanoglou

* Early versions of this article were presented at the University of Michigan in October 2014 and at the Annual Meeting of the Society for Classical Studies on 11 January 2015 (I thank Michael McOsker for presenting it for me while I was recovering from major eye-surgery). I also thank the students from various North American universities who took part in my course on the papyrus at the American School of Classical Studies at Athens in winter 2014, before I had been able to study the original; I learned much from their intelligence and enthusiasm, and from that of participants in an informal seminar at the University of Michigan in autumn 2014. I also thank the editors of this journal for obliging me to clarify many important points. Finally, I thank the Greek Archaeological Service and the staff of the Archaeological Museum in Thessaloniki for generously allowing and indeed helping me to work on the papyrus, the University of Michigan and the ASCSA for supporting this project, and the staff of the libraries of those institutions and of the Institute of Classical Studies in London. This manuscript was closed in August 2015, and takes no account of subsequent publications.

¹ Kahn 1997; Tsantsanoglou 2014, 6–10.

² Burkert 1968; Janko 1997, 80–7, favouring Diogenes or Diagoras; Hladký 2011 (in Czech), favouring Archelaus.

³ I suggested that the papyrus is by the 'atheist' Diagoras (Janko 1997, 87–92; 2001). Several scholars have brandished his ancient epithet ἄθεος as if this were a shorthand way to discredit my proposal (e.g. Edmonds 2013, 131). But Epicurus claimed that Diagoras is an atheist in the modern sense, i.e. one who believes in no gods at all, *because* Diagoras and those like him 'change the letters in the names of the gods' (κα[ὶ] γὰρ] παραγραμμίζ[ουσι] τὰ τ[ῶ]ν θεῶν [ὀνό]ματα, *De nat.* 12, quoted by Philodemus, *De piet.*, col. 19). To say that Diagoras believed in no god is almost certainly a misrepresentation, since very few such people existed in antiquity, at least openly (Sedley 2013, esp. 330–2). Diagoras was surely an ἄθεος in an earlier sense of the term, i.e. 'one who believes in gods other than those in whom the city believes', as Socrates probably did also. Once I read the Derveni papyrus, I came to suspect that Diagoras was another disciple of Anaxagoras, like Diogenes of Apollonia and Socrates' erstwhile teacher Archelaus of Athens, people whose views were certainly 'representative of the most avant-garde trends in theological discourse', as Edmonds rightly describes the Derveni papyrus (2013, 131). Does believing that Reason (*Nous*) is God make one an atheist?

⁴ Kouremenos, Parássoglou, and Tsantsanoglou 2006.

⁵ Anon. 1982. The late Walter Burkert (1931–2015) has finally revealed how this text came to be published (2014, 113–14). Over the years I have heard several independent corroborations of his whole account, including of the roles of Sir Eric Turner (1911–1983) and of the late Martin West (1937–2015).

brought out the first seven surviving columns in 1997.⁶ On the basis of the texts, translations, and photographs that had been published down to that date, G. Betegh and I independently reconstructed versions of the entire Greek text, but of course without the same level of evidential support.⁷

The edition of 2006 has many merits, as reviewers remarked at the time, but there were then, and have not been since, any independent reports by which to verify the editors' work. It was even possible, without seeing the papyrus, to be sure that their edition could be improved upon in several ways.⁸ On the basis of that edition, I proposed to change the order of the opening fragments, by applying methods that have been developed for reconstructing the carbonized papyri from Herculaneum.⁹ In turn, my new reordering has been challenged,¹⁰ and yet another arrangement has been proposed.¹¹ The papyrus is of course so important that, at a conference in 2008, the proceedings of which appeared in 2014,¹² scholars have continued to try, on the basis of the published edition, to interpret this controversial treatise: topics include whether its author was an Orphic practitioner,¹³ Presocratic philosopher,¹⁴ or some combination of the two,¹⁵ new readings in the opening columns¹⁶ and in the Orphic poem,¹⁷ and new arrangements of the fragments.¹⁸ The sole contributor with direct access to the original, K. Tsantsanoglou, offered new readings in the papyrus, and announced that he had discovered a series of column-numbers written in the upper margins above the columns of writing.¹⁹ Despite all the work that has gone into this valuable survey of the state of opinion, there is little agreement about the nature and authorship of the papyrus.

Without the benefit of autopsy it has often remained unclear, on the basis of the edition of 2006, in exactly what state the papyrus is at present, which readings are actually possible and which are not, and whether its 266 fragments had been transcribed and reconstructed successfully. Its original conservator, Anton Fackelmann, mounted it on blotting-paper between sheets of glass. Nine glass frames contain the pieces in roughly descending order of size. For the future conservation of the papyrus, it is best that these frames never be opened.

In order to edit carbonized papyri, which constitute the most difficult class of papyri in existence, one needs to study not only the surviving fragments but also old photographs, since it is an inevitable fact of nature that carbonized papyri tend to deteriorate over time, however carefully they are conserved. Hence the best edition of such a papyrus is not an accurate account of its present state, but an account of its original state when found, insofar as that can be reconstructed on the basis of the extant material and the earlier records of it. The infrared photographs by Tsavdároglou remain unpublished, and Skiadaresis' set can be studied only in the reproductions of the official edition, which of course pixellate when magnified. The papyrus itself is in stable condition, except that several pieces in frame 5 (called frame E by the editors) have cracked and fr. E 12 has shattered, no doubt in the earthquake of 1978. The papyrus has also lost small pieces at the edges, particularly in the smaller fragments; this probably occurred when it was first

⁶ Tsantsanoglou 1997.

⁷ The most determined attempts to arrive at the correct text while relying on published sources, without access to the papyrus or to unpublished photographs, were by Janko 2002 and Betegh 2004.

⁸ R. Janko, review of KPT in *BMCR* 2006.10.29, with the reply by the editors at *BMCR* 2006.11.02 and a response to this reply at *BMCR* 2006.11.20.

⁹ Janko 2008.

¹⁰ Piano 2011.

¹¹ Ferrari 2011*b*.

¹² Papadopoulou and Muellner 2014.

¹³ So Calame 2014, Graf 2014, Johnston 2014, and Sistikou 2014; similarly Edmonds 2013, 124–35.

¹⁴ Burkert 2014; Papadopoulou 2014, xv–xxiv; similarly Hladký 2011 (in Czech).

¹⁵ Bierl 2014.

¹⁶ Bernabé 2014.

¹⁷ Sider 2014.

¹⁸ Ferrari 2014.

¹⁹ Tsantsanoglou 2014. This discovery has been widely welcomed, but see §3 below.



Fig. 1. ΕΙΦΑ in col. xxiv,6 (microphoto by R. Janko): height of E 1.9 mm. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

conserved. Also, the ink is sometimes harder to see than in the early photographs. This is exactly what one must expect, and the same is true of the Herculaneum papyri; none of these materials will endure for ever, but are very slowly degrading. We must work on the papyrus while we still can. It also follows that photography and other imaging of it by every non-harmful means that exists make an essential contribution to their conservation. The Museum is absolutely right to facilitate such documentations of its state.

§2. Technologies old and new for reading the papyrus

It is almost impossible to read the Derveni papyrus by conventional means. Through the glass, the fragments are almost completely illegible. The reflections from the panes are horrible, and the glass also cuts down the amount of light that reaches the surface and can then return to the eye. Only with new techniques of photography that eliminate the reflections can one see just how well preserved most of the papyrus still is, as is seen in fig. 1: this photograph shows very clearly the letters ΕΙΦΑ in col. xxiv,6. I cannot emphasize too heavily that the new images which this article will present are, for most of the surface of the papyrus, of the same superlative quality. However, since the aim of research must be to make progress, and the better-preserved parts of the papyrus are already well known, the rest of the illustrations in this article will be of its most dismal, damaged and difficult places, since these are the passages where progress is most needed.²⁰ To this end, with the gracious permission of the Greek Archaeological Service, and the most kind and generous assistance of the Director and staff of the Archaeological Museum of Thessaloniki, and through the good offices of the American School of Classical Studies at Athens, I began in May 2014 a study both of the papyrus and of the old photographs, which will result in a new edition.²¹

In May 2014, I created a digital archive of images at 2400 dots per inch of the conservation archive and of the early photographs of the papyrus.²² The 133 scans that resulted, many containing multiple photographs, have been deposited with the Museum. In May 2014 and again in May 2015 I was also able to study the original papyrus in its entirety at very high magnifications, using forms of microscopy and microphotography that did not exist until very recently and that are free of the reflections that bedevil standard approaches; the secret was to use light-emitting diode light-sources around the point of magnification and to bring the microscope so close to the glass and to work at so high a magnification that the reflections fall

²⁰ I am grateful to the editors of this journal for requiring me to make these as legible as possible, which I have done by enhancing the brightness and by superimposing onto the rest of the images small letters in white indicating where to look for the actual letters. The new images are much more easily interpreted on the computer, particularly with a very large screen, than in any reproduction.

²¹ I thank in particular the Director of the Museum, Dr Polyxeni Adam-Veleni, Dr Despina Ignatiadou (now in Athens), the head of the Conservation Laboratory Demetrios Karolides, Demosthenes Kechagias, Evangelia Tsagaraki, and Electra Zographou, all of Archaeological Museum of Thessaloniki, and Director James Wright and administrator Ioanna Damanaki of the ASCSA. I am also grateful to the Fulbright Commission, which has now given me an award so that I can complete this work in 2017.

²² I thank the staff of the Museum and Michèle Hannoosh for indispensable help in scanning these materials on their flat-bed scanner.



Fig. 2.]ΕΦΥ[in fr. I 26 bis (infrared photo by M. Skiadaresis): height of Φ 2.8 mm.

© Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

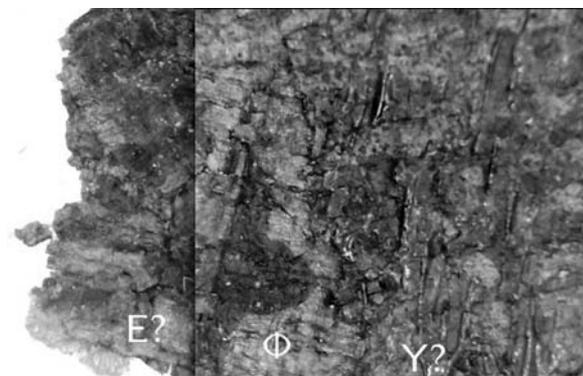


Fig. 3.]ΕΦΥ[in fr. I 26 bis (montage of microphotos by R. Janko): height of Φ 2.8 mm. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

outside the area to be photographed.²³ This is the first time that such equipment has been applied to reading carbonized papyri; it will be found highly beneficial for reading all carbonized papyri that are mounted between glass, such as the Petra papyri and those of the Herculaneum papyri that were conserved by Anton Fackelmann.

In the course of this work, I have taken almost 10,000 microphotographs of the difficult letters and traces; the complete imaging of the papyrus by these means remains a major desideratum, but I have tried to photograph every trace that seemed problematic. There are still gaps in the coverage. It was often impossible to see what one is photographing while one is photographing it, especially near an edge; at the edges of the fragments, the white paper on which Fackelmann mounted the papyrus is so bright that the traces of black ink on a black background only become visible via subsequent enhancements. Hence I sometimes failed to photograph the exact trace at which I aimed. At other times my photographs do comprise entire letters, but divide them between different images, because I could not see where the lines of writing were and photographed between the lines. Where their quality is sufficiently good, they can be stitched together into larger panoramas, but this is often difficult, because the focus varies within each image, being better in the middle than at the sides; a greater density of images would be needed for them to become completely stitchable. In addition, the infrared-images may have better contrast toward the edges, but tend to overexpose in the middle, whereas those made with visible light tend to blur at the edges. For all these reasons, I have been able to read even more than I have yet managed to document with photographs, and cannot yet produce photographs that will verify for others everything that I have seen.

In 2014 the microphotographs I took with visible light were at various magnifications, since I was experimenting, but in 2015 all are at 31 times actual size. In 2015 I also photographed in the near-infrared spectrum (850 nanometers), always at 37 times actual size. Since each microphotograph shows only a few letters at most, such images have proved difficult to label, track, and manipulate. A complete set of my images, like that of the old photographs, has been deposited with the Museum. Here I will briefly present some preliminary results, and indicate how greatly the new readings of the text will change our under-

²³ I thank the Museum, Demosthenes Kechagias, and Aleydis van de Moortel for the loan of equipment that I used in addition to my own. I have used, variously, a Digimicro Scale 2.0, a Dino-Lite digital microscope, and a Mightyscope near-infrared digital microscope, always adapted with a foam head to prevent any scratching of the glass.

standing of it. A first version of my text will serve as the basis for the German introduction, translation and commentary by Dr Mirjam Engert Kotwick that will be published later in 2016.²⁴

First, the two fairly complete sets of infrared photographs made by Tsavdároglou and Skiadaresis soon after the papyrus was found are extraordinarily valuable, and of course especially so with digital enhancement. They were taken with great skill, but they are not of equal worth. One set is not uniformly better than the other, in terms of exposure or quality of detail; individual photographs vary unpredictably. The important difference, however, is that they were made at successive stages in the conservation of the papyrus. The earlier set, those made by Tsavdároglou, uniformly show, so far as one can tell, the front (recto) of the papyrus, with the horizontal fibres uppermost; if some of them actually show the verso, this cannot be proved, since the extant pieces are still mounted with the same side facing the viewer. However, the later set of photographs made by Skiadaresis includes two small pieces (I 49 and I 87) showing the back (verso) of the same piece, i.e. those that are empty of writing, uppermost. These pieces still look just as they did when Skiadaresis photographed them. However, by flipping Skiadaresis' photographs digitally, one can prove that they are the same pieces as those photographed by Tsavdároglou: the shape is reversed, the surface now lacks writing, and the fibres run in a different direction. Another piece, I 26, exists only in the photograph by Tsavdároglou that the editors include in their plate of column xiii, where it bears the letters]πειδ[. However, its place in the frame is filled by a different fragment, neither published nor illustrated, which I shall call 'I 26 bis'; the latter preserves at its lower left corner only the letters]εφϋ[, none of which appears in fr. I 26. The phi is visible in the old photograph (Fig. 2), which shows that the rest of the surface is damaged or stripped; a montage of two of the new microphotographs also shows the horizontals of an E and perhaps the left arm of a Y (Fig. 3).

The overturning of these pieces, so that the 'verso' rather than the 'recto' lies uppermost, proves that Tsavdároglou's photographs were taken *before* the glass frames that protect the fragments were closed. This is confirmed by the quality of the preservation of the papyrus. Skiadaresis' photographs often show minor damage to its edges, which does not appear in those of Tsavdároglou. For instance, Tsavdároglou's unpublished photograph of fr. I 90 (Fig. 4) appears to show a left margin with γα[ρ in the upper line and c[below (the letters are to the right of the guide-letters in white that I superimposed on the image). However, Skiadaresis' photograph published as I 90 in KPT Plate 30 shows a fragment with no legible letters; the editors transcribed only] .[, which they construed as]α[. It turns out that they based their transcriptions mainly on the later set of photographs. If we lacked other aids, their work could be improved even on the basis of the prior set alone.

Some smaller fragments have been published, and indeed transcribed, sideways or upside-down. Thus fr. I 44, where the editors print nothing but remark that an E may be visible, has been illustrated sideways; even in KPT's Plate 30, if one rotates Skiadaresis' photograph of fr. I 44 to the right by 90°, one can clearly read at the left]εcττv, apparently at the end of a column, since there is no writing to the right (but the surface is damaged there). At least five fragments have been transcribed and illustrated upside down. Thus H 66, read by the editors as containing parts of two lines,] . εç.[above and] . . . [below, is, when turned the other way up, legible in the new images as] . θυϋγτ[, with a pellucid initial Θ with its diagonal crossbar sloping down to the right as usual (Fig. 5); the guide-letters are below the actual letters.²⁵ Other pieces shown upside-down include I 46, I 62, I 97, and possibly I 24. This is of particular significance in the case of I 24, on which Ferrari

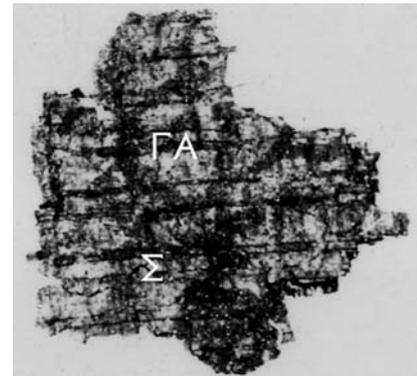


Fig. 4. ΓΑΡ[above Σ[in fr. I 90 (infrared photo by S. Tsavdároglou): height of Σ c. 2.8 mm. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

²⁴ Kotwick 2016.

²⁵ KPT Plate 29. Ferrari finds in it a fragment of Heraclitus by deciphering it the wrong way up (2014, 62–3).

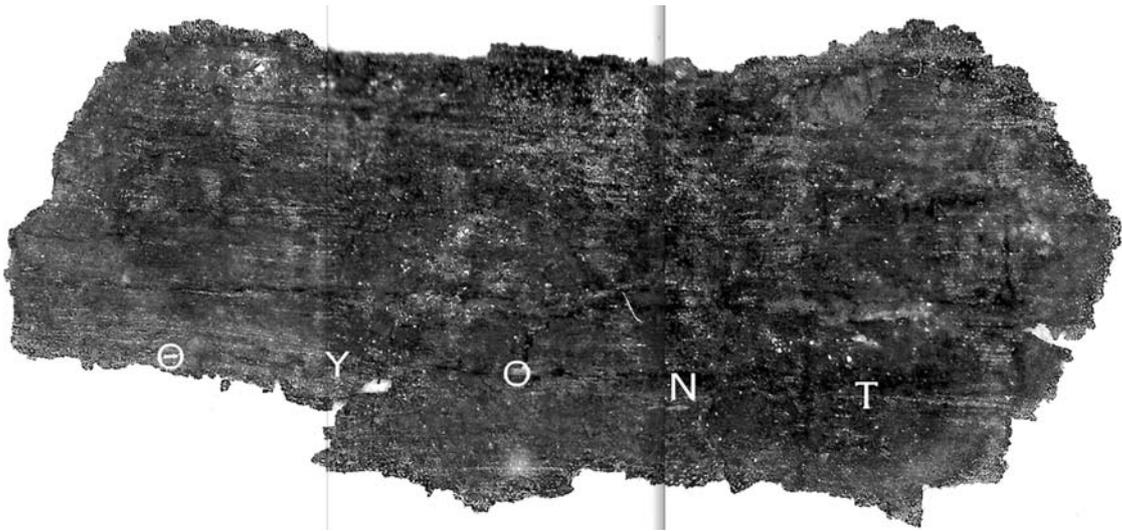


Fig. 5.]ΘΥΘΝΤ[in fr. H 66 (montage of microphotos by R. Janko): height of Θ 1.4 mm.
© Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

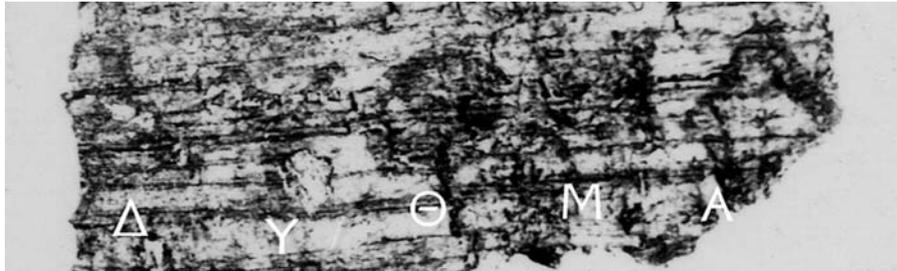


Fig. 6. ΔΥΘΜΑ in fr. I 32 (infrared photo by S. Tsavdaroglou): height of Θ 2.3 mm.
© Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

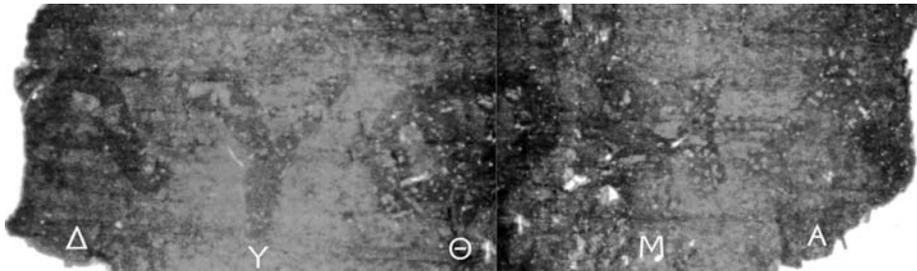


Fig. 7. ΔΥΘΜΑ in fr. I 32 (infrared microphoto by R. Janko): height of Θ 2.3 mm.
© Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

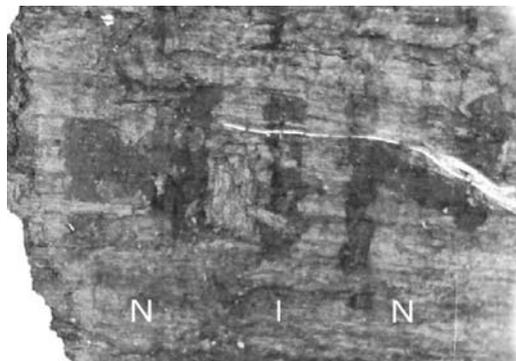


Fig. 8. ΝΙΝ at col. iv line 9, showing burnt edge (microphoto by R. Janko): height of Ι 1.8 mm.
© Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

controversially restored the Iranian term ἀ]ρτᾶδ[αc.²⁶ However, this scrap is particularly difficult to read. I transcribed the relevant line when inverted as] .δομ[, but this is far from certain on the images (cf. KPT plate 29).

The early photographs, where extant, proved much more legible than one expected. For instance, the bottom line of fr. I 32, where the editors transcribe]αυθ̄ .α[, reads in these photographs]δ̄υθ̄μα[(Fig. 6), as a montage of two infrared images confirms (Fig. 7). The scribe's usual Δ with raised base-line and trailing ink at its right end sometimes resembles alpha, as in the initial deltas of lines 3 and 4 of xiv. The rare dialectal variant δ̄υθ̄μαί instead of the usual δ̄υcμαί seems to be Doric, since, if we leave aside citations in the grammarians, it occurs only in Pindar,²⁷ Callimachus,²⁸ and (inexplicably) Didymus the blind.²⁹ It can be added to other Doric forms in the papyrus, such as viv in columns iv,9 (Fig. 8) and xi,3.³⁰

The new microphotographs represent a quantum leap in clarity, far surpassing in level of detail any images hitherto known. They vividly depict the slightest drops of ink from the scribe's pen, erasures and corrections, tiny traces of letters, horizontal fibres, cracks, holes, burnt patches (especially near the beginning, where the fibres often began to burn from the outside), a thin but completely black zone of burning along the edge, as seen in Fig. 8 (again especially near the beginning of the roll, where the old photographs can be misread as bearing ink), the diagonal fibres that sometimes alert one to a nearby *kollesis*, attesting the work of the *glutinator*,³¹ stripped surfaces with vertical fibres only, and the presence of overlying or underlying layers or pieces of papyrus. The presence of a *kollesis* can readily be verified, as in Fig. 9, where the lowest tip of the Σ clearly crosses the vertical line of the *kollesis* by the right edge of the fragment; the darker colour of the right-hand *kollema* is caused by its greater distance from the light-source.

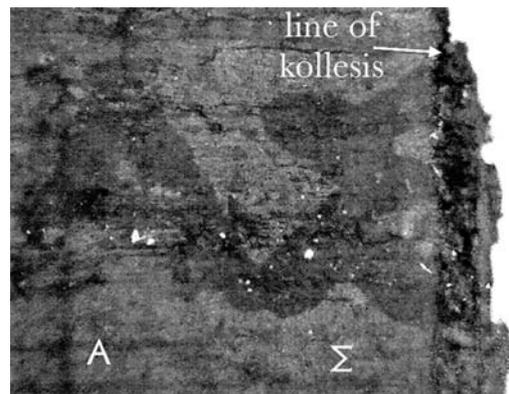


Fig. 9. ΑΣ running across the kollesis in fr. G 6 (infrared microphoto by R. Janko): height of Σ 2.8 mm. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

These images carry three other tremendous advantages. (i) They can be studied wherever one wishes, repeatedly, and at leisure, if one ever has any. (ii) By taking a few images that contain a scale,³² the scale of all the others that contain the same number of bytes or pixels can be measured precisely, so that the exact heights of letters and of the leading between lines, both of which vary from column to column, can be verified; one can also trust the scaling of the microscopes' manufacturers. Since the sizes of the letters and of the leading between the lines varies somewhat from column to column, and some columns have distinctly small or large letters, establishing exactly the letter-sizes and leading offers hope that stray fragments can be put into their proper columns. (iii) Wherever the papyrus is well preserved, these images will settle, often with absolute certainty, disputes about traces of ink and the presence of extraneous layers of papyrus.

Although the papyrus is almost flat, shadows in the old photographs can occasionally be misread as letters, and disappear in images taken from a different angle. This problem would be obviated by using

²⁶ See now Ferrari 2014, 63–5, with his fig. 9.

²⁷ *Isth.* 3/4,83.

²⁸ *Hy.* 6,10, which Callimachus wrote in Doric dialect, and *Aetia* fr. 54c,6 Harder = 177,6 Pfeiffer, which he composed in Homeric diction. Lobel restored δ̄υ[c]μ̄έων in the *Hecale* (fr. 74,14 Hollis), which also uses Homeric diction. However, the parallel in the *Aetia* shows that he ought to have put δ̄υ[θ]μ̄έων, despite the Ionic form -έων of the genitive plural ending.

²⁹ *Comm. in Iob* cod. p. 139,16–17 Henrichs, ἐὼν ἐνεχυράτης, πρὸ ὄδ̄υθ̄μῶν | ἠλίου ἀποδώσει αὐτό. The reading is not in doubt.

³⁰ The column-numbers are incorrect (see below), but for the reader's convenience I will continue to use the conventional column-numbers for the moment.

³¹ Capasso 1995, 60 with Tav. V.

³² I have not illustrated any of these, because the scale takes up most of the image.

Reflectance Transformation Imaging ('RTI'), and the Archaeological Museum has imaged a few pieces with this method;³³ it would be desirable to record the whole papyrus in this way. However, shadows rarely affect the microphotographs because their magnification is so large.

The images of the bulk of the text, from columns vii to xxv, show that it is superbly preserved. Many parts of it are as fresh as when it was written (compare Fig. 1). At bottoms of columns and at the end of the roll there is some burning, which impedes legibility because burnt patches and fibres can be hard to distinguish from ink, especially in visible light. I estimate that the innermost circumference was 3.9 cm. Hence, dividing by π , the innermost diameter was 1.24 cm. This implies that there was an *umbilicus* of almost that diameter, which is comparable to the diameters of the later *umbilici* from the library at Herculaneum.³⁴ This *umbilicus* must have ignited and brought extra heat into the heart of the scroll; this is why column xxvi is somewhat damaged.

However, the opening columns, when observed at high magnification, manifest the terrible effects of fire on their material support; these will often make even images of so high a quality hard to interpret. A completely black zone along the edges becomes more common towards the start of the text (Fig. 8); at least the colour of these can readily be distinguished from that of ink. As one proceeds towards the outside of the roll, the letters also become fainter; sometimes a letter that is not clear in nine images will stand out in a tenth, according to how the light happened to fall on it. One instance is the controversial reading in column v line 6, where KPT print $\epsilon\upsilon$ 'Αἴδου but West and Tsantsanoglou suggested $\epsilon\gamma$ 'Αἴδου. The letters $\epsilon\upsilon$ are in fact completely clear, but appeared on only two of my ten new microphotographs, one taken with visible light (Fig. 10), the other with infrared (Fig. 11).³⁵ In the outermost and lowest parts of the papyrus, many apparent traces of ink, often in either circular or rectilinear shapes that, in the latter case, follow the fibres, turn out to be mere igneous blackening that occurred as the fire began to take hold. Since the ink and the burning are essentially the same material, it is sometimes difficult to know, especially on the small pieces, whether the dark patterns that one sees are real or illusory; an exact sense of the scale of what one is looking at is essential to avoid being misled. In visible light the colour is the same, and sometimes I cannot tell which is which. Debate over the interpretation of such traces will probably continue until yet another technology supervenes.

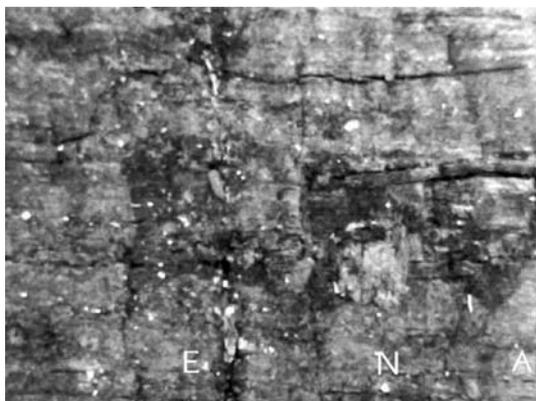


Fig. 10. EN at the start of col. v line 3 (microphoto by R. Janko): height of E 2.2 mm. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

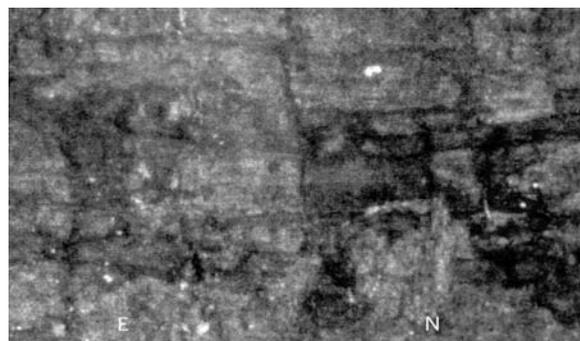


Fig. 11. EN at the start of col. v line 3 (infrared microphoto by R. Janko): height of E 2.2 mm. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

The infrared images are often inferior to those made with visible light, and frequently have an overexposed area in the middle which washes out the ink there: multiple images are necessary for complete coverage of the surface. However, these images are sometimes vastly superior. This mostly happens where the papy-

³³ I thank Dr. Karolides for sharing with me a magnificent print of fr. C 11 (col. xiii) produced by this method.

³⁴ Capasso measured these as two at 0.6 cm, six at 0.7, three at 0.8, one at 0.9, two at 1.0, two at 1.3, four at 1.5, one at 1.6, one at 1.0–1.7, one at 1.5–1.8, one at 1.9, and four at 2.5 (1995, 82–90).

³⁵ Tsantsanoglou (2014, 4) saw the arms of the E, but proposed to eliminate them on the grounds that they are horizontal fibres, which the microphotographs show them not to be.

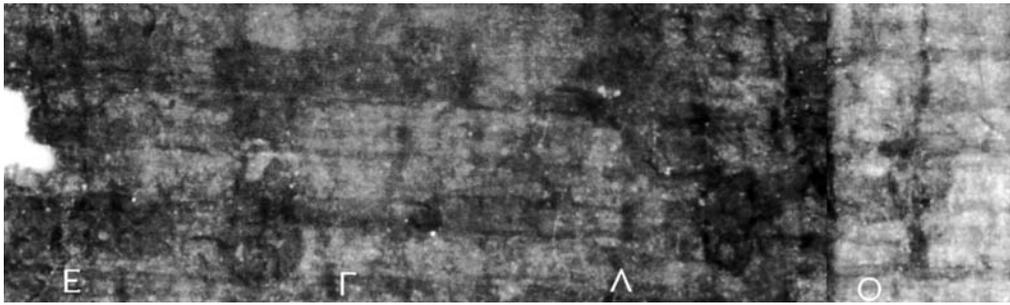


Fig. 12. ΕΓΛΟ in col. xviii line 15 (montage of infrared microphotos by R. Janko): height of Γ 2.2 mm.
© Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

rus is badly burned, as it is both in its lower and in its outer parts. Thus at column xviii,15 the editors had supplied π[ρ]ωτόγονο[ν]. Micro-imaging with visible light had suggested to me]υπογεγο[, but to my astonishment the infrared images plainly read]εγλογηνο[, which I supplement as διὰ ἐγλογὴν ὀνόματος. A montage of four infrared images (Fig. 12) shows εγλο (the ο is harder to distinguish in the montage, because it straddles the border between a darker and a brighter image); see further below, §4. In all difficult cases one needs to look simultaneously and on large screens at enhanced microphotographs made with visible light, at enhanced infrared images, and at enhanced scans of the old photographs, generally increasing the exposure; every different image makes a contribution to the interpretation of what can be seen. This laborious process demands much time, but there is no other way forward.

§3. Bibliological results

The new images contribute much to our understanding of the papyrus as a book-roll. Unfortunately, there is still no *subscriptio* at the end stating the author and the title of the treatise that it contains. An exhaustive examination lasting a whole day confirmed that the entire surface of the final 20 cm is completely blank. The final unwritten portion is mostly mounted right side up, i.e. with the horizontal fibres uppermost; when Kouremenos, Parássoglou, and Tsantsanoglou³⁶ say that Fackelmann ‘had placed a largish fragment (fortunately a piece of the unwritten last section of the roll) upside down’, they mean that he placed it face down, i.e. with the verso upwards; they are referring to the second of the six segments in which I photographed it. However, the portion that is mounted upside down is not wide enough to have contained a whole *subscriptio*. Hence the *subscriptio* must have been written at the bottom of the last column, on a portion of the *volumen* that is now lost. There was no *eschatokollon* with the vertical fibres uppermost.

The old photographs suggested that fr. G 6, which the editors placed in column ii but which I placed in column iii, broke along a *kollesis* at its extreme right edge.³⁷ The first microphotographs ever made of the papyrus were of this piece; they were taken with the Archaeological Museum’s microscope and are reproduced in Piano 2011, Tav. 13.³⁸ Piano holds that they do not show a *kollesis* along this edge, on the grounds that the right tips of the sigma are broken off where the lower layer begins.³⁹ However, study of her images at high magnification and in bright light seemed to show that a *kollesis* is indeed present, and that the right tips of the Σ in line 6, especially the bottom one, do indeed cross this *kollesis* onto the lower level of the next *kollema*. The new microphotographs, which are at higher magnifications and resolutions than hitherto, confirm this (Fig. 9), and also show that the omicrons in lines 8 and 9 cross the *kollesis* too.

A *kollesis* is also visible down the right sides both of fr. F 10, where it runs through the left side of the Α in κοί[in line 3 (Fig. 13), and of fr. F 14, where it crossed the tips of the K in the ΣΙΚ of φουκί[ός in my line 6 (Fig. 14); note that, since the iota is on the right edge of the circular hole, one’s eye at first interprets this letter as rounded. It so happens that in 2008 I placed both of these fragments in column i, and indeed

³⁶ In *BMCR* 2006.11.02.

³⁷ Janko 2008.

³⁸ Cf. Ferrari 2014, 56 Fig. 3.

³⁹ Cf. Ferrari 2014, 55–7.

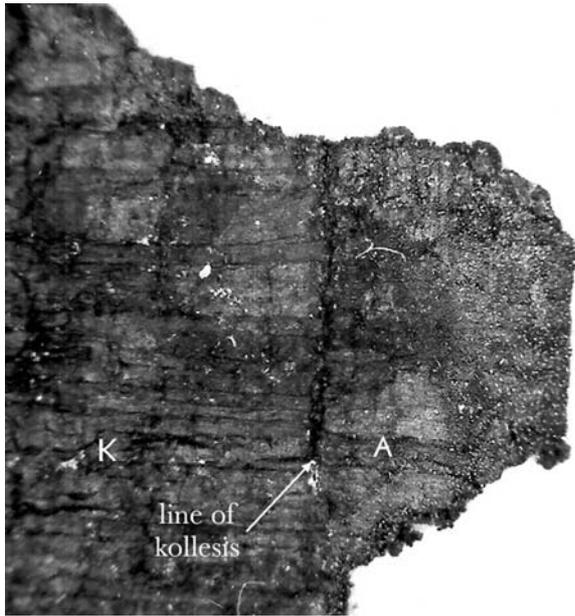


Fig. 13. KA running across the kollesis in fr. F 10 (microphoto by R. Janko): height of K 2.4 mm.
© Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. 14. ΣIK[preceding the kollesis in fr. F 14 (microphoto by R. Janko): height of K 2.5 mm.
© Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

approximately in a vertical alignment relative to each other, even though I was unaware of any possible *kollesis* there. As I noted at that time, the presence of a *kollesis* in column *i* requires that the widths of the *kollemata* in this part of the roll were much less than the average of 16–17 cm or so. Hence Piano suggested that the shortness of my second *kollema* invalidates my reconstruction of 2008.⁴⁰ According to my reconstruction, the first two measurable *kollemata* were each 12.2 cm wide, whereas the next pair were 14.6 cm wide. This precedes a pair at 16.6/16.2 cm and another at 16.0 and 16.2 cm. This is certainly anomalous, but in fact the pairing of similar measurements matches a pattern observable throughout the roll, where there is a tendency for successive *kollemata* to be of the same width.⁴¹ The unexpected narrowness of the first two *kollemata* helps to explain why the reconstruction of these columns *i*–*iii* has proved so controversial and difficult. Prolonged trial and error on a paper model of the papyrus have taught me that my proposal is better than any alternative.

Tsantsanoglou has recently proposed, on the basis of microscopic autopsy of the papyrus, that the upper margins above the columns contain, about 2.5–3 mm above the upper line of writing and near its left-hand margin, column-numbers written in large letters and lighter ink, e.g. the alleged ψ in fr. D 4 above col. xx.⁴² Sadly, however, as I well know from many summers passed in the *Officina dei Papiri* in Naples, microscopes easily spawn phantasms in carbonized papyri, especially if the light-source is at an angle and there are reflections; as the light weakens, the shadows darken. I regret to report that I could see none of these alleged letters. The microphotographs present only cracks, fibres, burning, and shadows, as is crystal-clear where the papyrus is still extant. I expended a whole day in 2014 on verifying that these supracolumnar numbers are illusory.

However, I did find a hitherto unnoticed marginal sign in fr. H 18, namely \underline{O} , i.e. an omicron with a short dash beneath it, in the left margin of column *vi* between lines 14 and 15 (Fig. 15). This sign, which

⁴⁰ Piano 2011; cf. Ferrari 2014, 55.

⁴¹ See the table in KPT (2006, 6), where the measurements are close to my own calculations. I will be grateful to hear of any parallel for this phenomenon, since I know of none, and of any explanation for it. Did the person who prepared the *kollemata* fold originally longer sheets of papyrus, c. 24–32 cm wide, and cut them exactly in half for further manufacture, with the result that this pairing often remained when they were put together as a roll?

⁴² Tsantsanoglou 2014, 14–15.

is even visible in KPT's plate 6, lies to the left of, and below, the peculiarly angular bottom left corner of the O at the start of line 14, and to the left of, and above, the upright of the Φ that begins line 15. This O looks exactly like the kind of stichometric sign which was standard in later papyri to count the number of lines (στίχοι) in the roll, so that the scribe could be paid the right amount for his labour. Such signs occur every one hundred lines in papyri which, like this one, contain lines that are the length of hexameters. Since O is the fifteenth letter of the alphabet, this sign marks line 1500 (= 15 × 100). Its presence proves that the Derveni papyrus was a full-length book-roll written by a professional copyist who already used this convention. This is the earliest known example of such a sign.

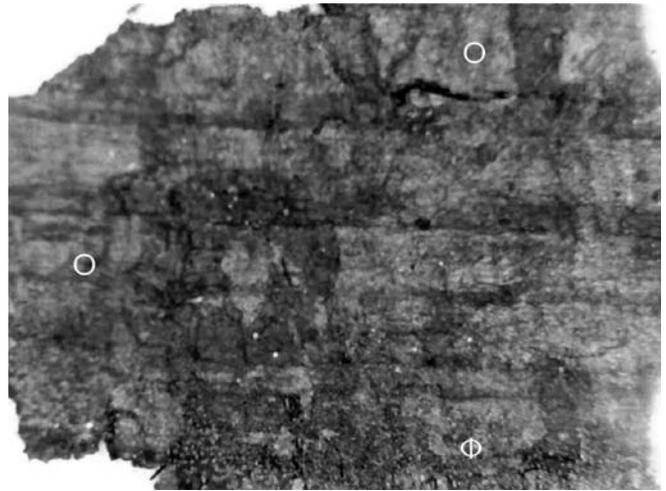


Fig. 15. Stichometric O in the left margin of col. vi lines 15–16 (microphoto by R. Janko): height of O 2.0 mm.
© Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

The presence of this O means that one should be able to calculate how long the roll originally was. If the residue of lines before the start of column vi, namely 1,486 (= 1,500 – 14), is exactly divisible by a whole number greater than 20 (since there were at least 20 lines per column), this will probably tell us how many columns are lost. Experiments with division show that each column should have contained 27, 28 or 33 lines, because these integers divide into 1,486 almost exactly (slight imprecision would be caused by minor variation in the number of lines per column). Among these possibilities, each column probably contained an average of 33 lines. This is because only that number predicts that all the later stichometric letters will fall in the lower parts of the columns, which are now lost. Since, despite a dedicated search of all the left margins, I found no other stichometric signs, this hypothesis is likely to be correct, though the discovery of another sign could still disprove it. Hence the present column vi was almost certainly column 46, and all the column-numbers need to be increased by exactly 40. Until the new edition appears, I will use the previous column-numbers, in case more stichometry comes to light, but I will apply the correct numbers in the new edition.

Since 26 columns survive, the entire roll contained roughly 2,160 lines arranged in 66 columns; in terms of the number of columns, 60% have perished. If the loss of about 18 lines at the bottom of each extant column of 33 lines is brought into the calculation, only 18% of the whole *volumen* survives. Tsantsanoglou is right that the treatise had plenty of room for other topics in addition to the interpretation of the poem ascribed to Orpheus.⁴³

§4. The interpretation of the Orphic poem

My study of the papyrus confirms that the official edition of columns viii–xxvi is largely correct, especially at the end; many letters that have had sublitteral dots can be decisively confirmed, and many that were correctly supplied within lacunae can now be partially read. However, my study also confirms many proposals that the editors rejected or did not acknowledge, and offers some totally unexpected readings. At a time when my sight was sorely deficient I had the good fortune to examine images of the *cruces* in the company of Dr Mirjam Kotwick. She has not only made her own contribution to the constitution of the text, but saved me from aberrations into which my usual reluctance to take the common path had led me. For lack both of time and of vision, my work on the text is not yet finished; given the extreme difficulty of the material, more changes to it are likely, but a few highlights of the work so far are given below.

⁴³ Ibid. 15.

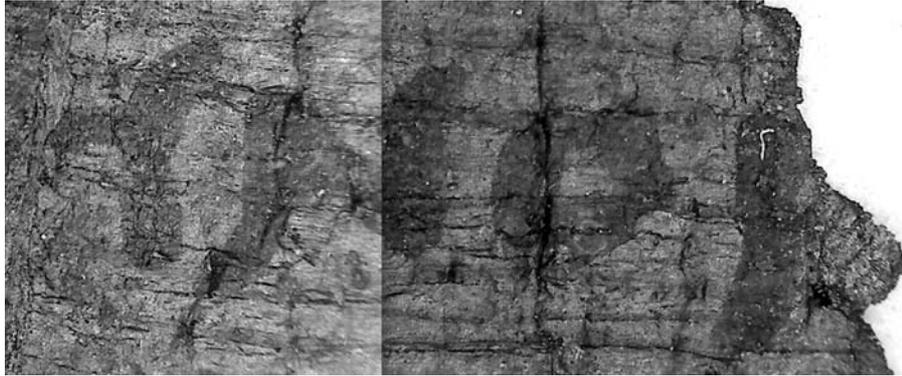


Fig. 16.]HNOK[in col. vii line 3 (microphotos by R. Janko): height of O 1.75 mm.
© Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

Among several significant changes in column vii, the editors' supplement 'wholesome hymn' ([ύ]μνον [ύγ]η) in their line 2 will disappear, since the correct text is]ηνοκ[(Fig. 16), with no uncertain letters; they were confused by how the right half of the H emerges from under the overlying piece F 5b which belongs to the next circumference. Nor did they see the central strokes of the K at the right edge, including the start of the arm that slopes upward, which can be seen to run under the small *sovrapposto* that forms a bulge at the right edge of Fig. 16, which is a montage of two microphotographs. In place of the 'wholesome hymn' I supply γρ[αφ]ήν ὁκ[νο]ίη 'would be repelled by the scripture'. In KPT's line 15 (now to be renumbered line 16, since there was another line before their line 1), where they read εἰγ[.]κ[α]τ[.] what must have been the second verse of the Orphic poem is partly legible (Fig. 17). In it 'Orpheus' must have announced as his topic the bold deeds of Zeus, who carried out ἔργ' ο[ύ]κ ἀτέλεστα, 'deeds that were not unfulfilled'; εἰγ is legible even in the published plate, and the bars of the E and the right two-thirds of the small final O at the right edge are clearly visible.⁴⁴

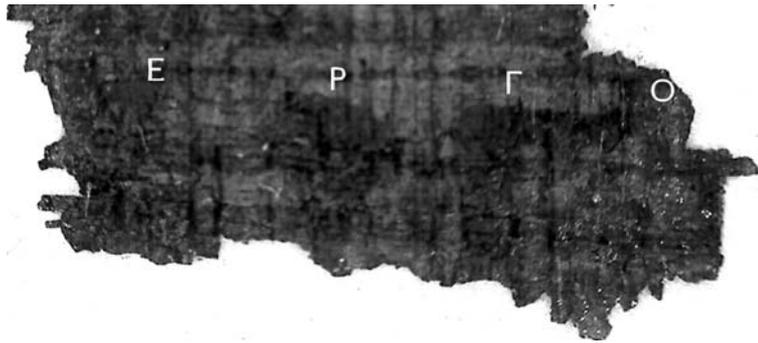


Fig. 17. EPFO[in col. vii line 16 (montage of microphotos by R. Janko): height of O 1.8 mm. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

In column xiii the controversy in line 2 over τότε versus τότε, which was printed in the official edition, is decided in favor of τότε (Fig. 18), where the left tip of the second T is clearly seen at the right edge of fr. E 2; the alleged Δ was a shadow in the old photographs, as the new images prove. This yields οὔτε γὰρ τότε ἤκουσεν, ἀλλὰ δεδήλωται ὅπως ἤκουσεν, i.e. 'for neither did Zeus hear it then, but it has been shown that he had heard it', where the aorist has a pluperfect force.⁴⁵

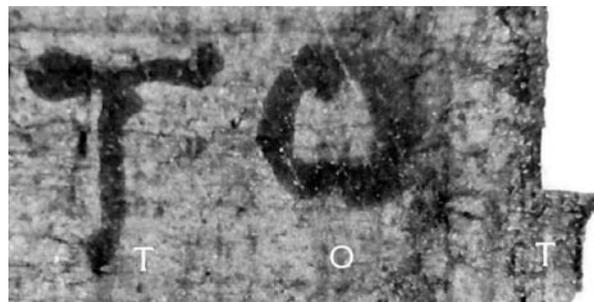


Fig. 18. TOT[in col. xiii line 2 (microphoto by R. Janko): height of T 2.4 mm. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

⁴⁴ Regarding the P, KPT oddly remark 'the next letter looks like ρ but can only be ι' (2006, 75). This fragment is not in Bernabé 2004–5 or in Sider 2014. For my supplement compare ἔργ' ἀτέλεστα τελεῖ in a pentameter at Theognis 1290. Note also that at vii,11 ἀ[ρ]εβ[ε]ῖν replaces νομ[ο]θετεῖν.

⁴⁵ For the Ionic usage of ὅπως after verbs of saying to mean simply 'that', like ὅς, cf. *LSJ* s.v. ὅπως II. 1.

We considered above (§2 with Fig. 12) the new reading ἐγλογῆν at column xviii,15. In the light of this and other improvements, I restore the whole passage thus:

12 [Ὀρφεὺς δὲ λέ]γει “**Ζεὺς πρῶτος**
γένετο”, πρ[ῶ]τόγ γ’ ὄντα, [τὰς γραφὰς ἐν] ἔπει τ[ὰς] ιεράς // [π]ω[ρ]
 φρά]των. οἱ δ’ ἄνθρω[ποι, οὐ γινώσκοντ]ες τὰ λεγόμενα,
 15 διὰ] ἐγλογῆν ὀνόματος νομίζουσιν αὐ]τὸν Ζῆνα [λέγειν
 16 [“γενέσθαι”].

In line 13 the letters τογγοντα are in their original place, where they still stand in the papyrus. In KPT’s plate 18 the portion containing the word ὄντα has been labelled fr. D 2a, cut out and moved to line 15, but the unbroken fibres of fr. D 1 prove that it belongs in its original position. The]ω[at the end of line 13, contrariwise, is on a small and mostly blank *sovrapposto*, fr. D 1b, which the editors rightly transposed into its correct position one circumference from its apparent place in fr. D 1, as the fibres confirm.⁴⁶ The sense is perhaps as follows: ‘but Orpheus says “Zeus was born first”, although Zeus existed “first”, because he intended somehow to express his holy scriptures in hexameters. But since people do not grasp what is meant, because of his choice of word they think that he means that Zeus himself was “born”.’ The Derveni author plays on the ambiguity of γενέσθαι as ‘be’ and ‘come to be’, in order to deny that the poem says that Zeus was born, which would be a scandal according to both his physics and his theology.

The end of column xx has always been very difficult. In my long-held view, after chiding the initiates for lack of curiosity (and for wasting their money) the author resumes his discussion of the Orphic poem, of which a λόγος or ‘account’ must be given. KPT read very little here:

13 τῶ[.] υοντ[. . .] λόγος . . [. . .]ται . [. .]να
 . [.] .ι τῆι ἐαυτοῦ ο . . [. . .] μ]ητρὶ μὲν
 15]δ’ ἀδεληφ[.]]ωσειδε

The presence of words for ‘mother’ and ‘sister’ led me to suppose long ago that the author begins to prepare the ground for his interpretation of Zeus’ multiple rapes, first of his own mother, which is discussed in column xxvi, and then of his sister. Rape is also mentioned at column xxii,12–14: καλε[ῖται] γὰρ καὶ “Δηιώ”, ὅτι “ἐδηι[ώθη]” ἐν τῆι μείξει· δηλώσει δέ, [ὅ]ταν κατὰ τὰ ἔπη γέν[ηται], i.e. ‘for she is also called “Deio” because she was violated in intercourse: but Orpheus will make it clear when, according to the verses, she is born’. This shows that her ‘birth’, in which the author does not believe (since she always existed), will happen later, and that he will discuss it when it occurs in the poem. However, this event does not occur within that part of the poem that is discussed in the extant papyrus; so it must have happened in the next *volumen* of what was clearly a treatise in at least two books.

The new images have enabled me to confirm many traces and suggest new supplements in this passage.⁴⁷ The letter at the start of line 14 (Fig. 19) is not γ, ε, or π, as KPT would have it; although viewing and photographs with visible light (not illustrated) suggest β, the image in infrared light shows the top of μ or ν, and proves that the top of the apparent β is not ink. The letters between slashes in line 15 belong one circumference before their current position in fr. D 6. I tentatively reconstruct:

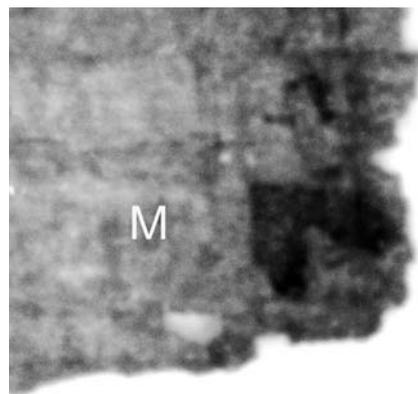


Fig. 19. M[at the start of col. xx line 14 (infrared micro-photo by R. Janko): letter height c.2.3 mm.
 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

⁴⁶ They mark it ‘(D 2a)’, but it should be renumbered fr. D 1b, as it is the upper layer of fr. D 1, the most part of which must itself therefore be renumbered fr. D 1a.

⁴⁷ During my Athenian seminar on the papyrus, Hilary Boussein of the University of Virginia proposed δ[έ]χε]ται; the spacing also admits δ[εί]ξε]ται.

- 13 τῶ[ι δὲ ταῦτ' ἀκ]ουόντ[ι . (.) ὁ] λόγος δ[έχεται π[λεί]ονα
 μ[οχθηρά, ὅτι λέγ]ει τῆι ἑαυτοῦ Ὀλ[ύμπιον Ζῆνα μ]ητρὶ μὲν
 15 θόρνυθαι, τῆι δ' ἀδελφῆ[ι συμμ]//εἰξ//[αι κρατερ]ῶς. εἰ δὲ

This yields the following sense: ‘For the person who hears these things (*word lost*) the account admits several repugnant things, because it says that Olympian Zeus mates with his own mother and violently rapes his sister, but if ...’. Presumably the hearer was admonished not to take this account literally, but rather to follow the author’s interpretation.

§5. The opening columns

Changes to the early part of the treatise will be both more extensive and more drastic.

Firstly and perhaps most surprisingly, the Derveni author apparently quoted Parmenides in fr. G 16 line 3 (probably the actual line 5). This piece, containing the ends of lines, precedes the fragments that compose column i, whether in KPT’s order, Ferrari’s, or mine (in my reconstruction it falls in column 39, according to the new numeration); both the fact that it belongs to the G-series and the lack of gaps in the roll as reconstructed preclude it from belonging anywhere in the Orphic commentary that begins in column vii. The letters are relatively small. The official edition here reads merely] ξη [. With visible light the letters are very obscure (Fig. 20): I could read only]υμ [; the Y at the left edge has lost part of its upper left arm, while the M is a well-spaced, sprawling, sloping M, as can be seen in col. xi,4; it precedes a dark circular smudge that could be O but is not visible in reproductions. The old infrared photographs have further illegible traces right across to the right edge, which are dimly visible in KPT’s plate 27, but nothing could be made of them. However, in the new infrared images (Fig. 21) I was amazed to read the letters]ΥΜΟΣΙΚΑ[. My collage of four such images, shows the right half of the Y, the right half of the M, ΟΣΙ clear beyond any doubt, and the upright and lower arm of K. Since the final trace looks like an apex from A or Λ and is certainly not Ω, we can exclude a quotation of *Il.* 18. 178, θυμὸς ἰκέσθω. I was still more astonished to realize that these letters match the end of the first verse of Parmenides’ poem (fr. 1. 1 D.–K.):

“ἵπποι ταί με φέρουσιν, ὄσον τ’ ἐπὶ θυμὸς ἰκάνοι.”

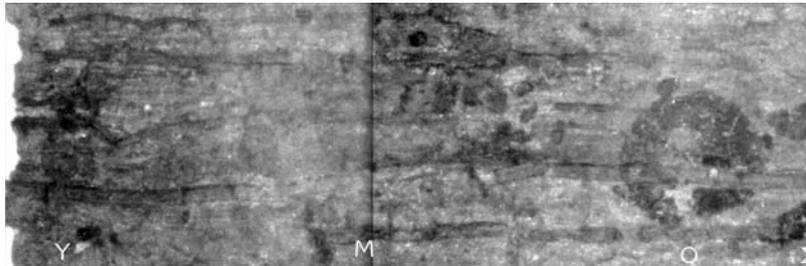


Fig. 20.]ΥΜΟΣ in fr. G 16 line 3 (montage of microphotos by R. Janko): height of O 1.6 mm.
 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. 21. ΟΣΙΚΑ[in fr. G 16 line 3 (montage of infrared microphotos by R. Janko): height of Σ 2.7 mm.
 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

A search of the Thesaurus Linguae Graecae reveals that the sequence]υμοικα[is paralleled in other Greek literature, but only in contexts that are almost certainly irrelevant to a text such as this one.⁴⁸ The fact that these letters appear near the end of the line confirms that Parmenides is in question. The context is so badly damaged that it is unlikely ever to reveal why this verse was quoted. However, Parmenides refers only two verses later to δαίμονες, which are mentioned in column iii. Also, at the opening of his poem he is a natural scientist (φυσικός) who is speaking like an allegorist or mythographer, as does Heraclitus in column iv,6, where I accept Parássoglou's supplements ἔκλε[α ἱερῶ] λόγῳ λέγων. These are good reasons why the author of this treatise would have wanted to cite this verse in the context of such arguments. Similarly the letters φυσικ[in fr. F 14 (partly seen in Fig. 14), which I restore as φυσικ[ός and place in col. i,7, indicate that the author compared the interpretations of diviners with those of natural scientists in some way. Finally, the presence of Parmenides neatly confirms that the Derveni author was writing 'in the post-Parmenidean tradition that posits an ultimate unity of existence'.⁴⁹

Many surprises await in cols. i–iii. The arrangement of the fragments of these columns that I proposed in 2008 is substantially confirmed by the discovery that a *kollesis* ran down the middle of column i, as we saw in Figs. 13–14. This also proves that fragment F 14 belongs there (Ferrari has reassigned it to column iv).⁵⁰ However, many details will change since my edition of 2008. Column i discusses how to interpret signs from burnt offerings in relation to the prayers that are offered with them. Just as hope, the Erinyes, the initiates, and the mist will evaporate from column i, so too the temple, the music, and the bird will fly out of column ii, but this column seems likely to remain no less obscure than before.⁵¹

Column iii argues that the Erinyes are δαίμονες who, according to the μάγοι, increase the honours of the gods as servants of justice (just as Heraclitus says that the Erinyes are the helpers of justice in col. iv); they also oversee oaths. This affirmation by the μάγοι suggests that this term denotes local religious practitioners rather than Persian priests. Fragment G 9 fits in shape and sense into column iii, and shows that, as scholars have desiderated,⁵² the rites to the Erinyes are 'wineless'. There, where KPT already read] οἶν [, they wrongly suspected that different layers are present. However, the word ἄοινα is legible, with patience, even in an enhancement of Tsavdároglou's infrared photograph (Fig. 22), in which it runs from just after the left edge across to the right, with the O, as often, slightly raised above the base-line and the final alpha partly hidden under a *sovrapposto*.⁵³

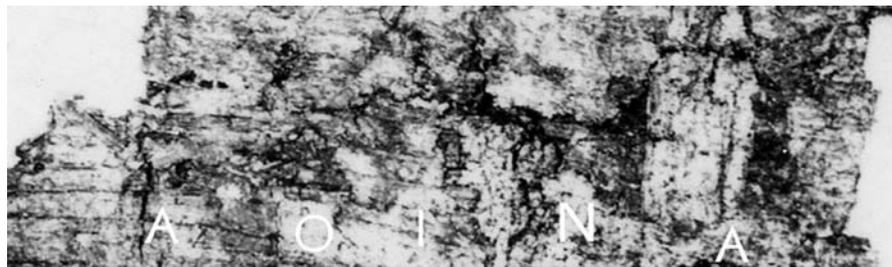


Fig. 22. ΑΟΙΝΑ in fr. G 9 line 3 (infrared photo by S. Tsavdároglou): height of O 2.0 mm.
© Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

The second word of the famous fragment of Heraclitus (fr. 3 + 94 D.–K.), quoted in column iv,7–8, has been highly controversial: as we will see, my own supplement μεθό]δου and Ferrari's περιό]δου are now proved equally wrong. Tsantsanoglou, presumably dissatisfied with previous efforts, has suggested ἥλι]ος, ἀλλ]ῶ

⁴⁸ Galen, *De rebus boni malique suci*, vi. p. 794,4 Kühn, κακόχουμος ἱκανῶς, and later writers who cite him; also Eustathius, *Comm. in Il.* i. 295,23, ἐπώνυμος Ἰκάροῦ. I thank David Sider for pointing out these parallels.

⁴⁹ Rusten 2014, 124. On the relevance of Heraclitus and Parmenides to the world of the Derveni author see Bierl 2014, 190–1.

⁵⁰ Ferrari 2010.

⁵¹ My text of columns i–iii will be very different from those in Bernabé 2014, 20–6, who relies on the reconstruction in Ferrari 2011b; as we saw (§3 above), this depends on the denial that there is a *kollesis* in fr. G 6.

⁵² E.g. Bernabé 2014, 30. Cf. Soph. *OC* 100 and schol. Eur. *Or.* 319.

⁵³ So far my microphotographs of this piece are not good enough to reproduce.

οὐ κατὰ φύσιν, ἀνθρώ[πι]ν εὖρος ποδός [έ]στι].⁵⁴ However, the traces (a right-hand diagonal, apex and downward stroke) which he read as]Α are actually far too steep for that letter, as appears both on the old photographs and on the new images with visible light (Fig. 23); the letter can only be M, of which the right diagonal, apex and the start of the down-stroke survive. Adopting the supplement κό[σ]μου first advanced by Lebedev,⁵⁵ I read and punctuate ἥλιος, [κό]μου κατὰ φύσιν, ἀνθρώ[πι]ν εὖρος ποδός [έ]στι, i.e. ‘the sun, in accord with the nature of the world, is the breadth of a man’s foot’ (the spacing is too narrow for ἀνθρώ[πι]ν). The supplement δρό[σ]μου might also be possible, but Lebedev’s supplement has the advantage that κόσμος is the topic just above in column iv,4, where KPT restored the question ἄρ’ οὐ τὰ ξιν ἔχει διὰ τό γδε κόσμος; However, a better supplement is needed in iv,4, because the α[is more likely to be ο[or ω[. Hence I suggest ἄρ’ οὐ τω[ἔχει διὰ τῶ]νδε κόσμος;

My reconstruction of the upper portion of the controversial column v will differ from all previous attempts, including my own, where I had suggested for line 5, on the basis of published reports of the traces, the scandalous supplement εἰ θέμι[σ] ἀπιτ[η]χ[α]ι, i.e. we will ask an oracle ‘whether it is right to disbelieve’ in the terrors of Hades.⁵⁶ In the official edition the crucial passage reads as follows:

- 4 αὐτοῖς πάριμεν [εἰς τὸ μα]ντεῖον ἐπερ[ω]τή[σ]οντες,
 τῶμ μαντευομένων [έν]εκεν, εἰ θεμι[. . .] ηδ[α]
 6 ἄρ’ Ἄιδου δεινὰ τί ἀπιτοῦσι;

Tsantsanoglou’s latest proposal⁵⁷ is this:

- 4 αὐτοῖς πάριμεν [εἰς τὸ μα]ντεῖον ἐπερ[ω]τή[σ]οντε[ς],
 τῶμ μαντευομένων [έν]εκεν, εἰ θέμι[σ] ταῦτ]α δρᾶν,
 6 ἄρ’ Ἄιδου δεινὰ τί ἀπιτοῦσι;

The traces read by KPT in lines 5 and 6 as ων and πις (actually αη and μις) are from their fr. F 5a, which should correctly be renumbered fr. F 5b. According to the principles developed in Herculanean papyrology for the placing of *sovrapposti*, fr. F 5b must in fact belong one circumference after where it is found in its

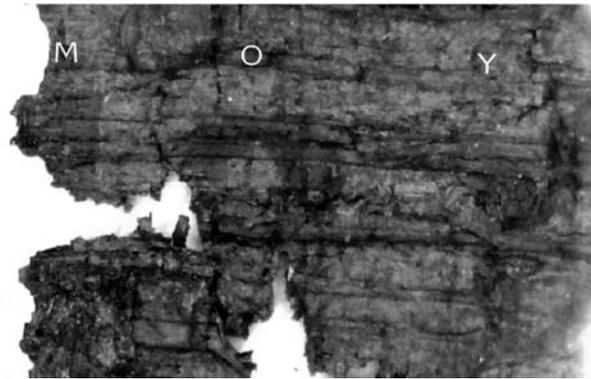


Fig. 23.]MOY in col. iv line 7 (microphoto by R. Janko): height of O 1.8 mm. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

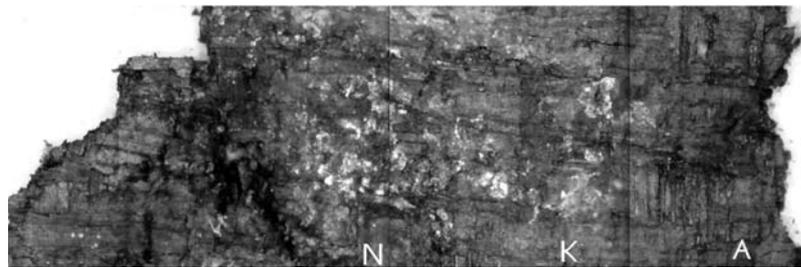


Fig. 24.] . . . ΝΚΑ in col. v line 5 (montage of microphotos by R. Janko): height of A 2.4 mm. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

⁵⁴ In Papadopoulou and Muellner 2014, 3–4.

⁵⁵ In Parásoglou and Tsantsanoglou 1992. With the knowledge that the letter was M, both M. Kotwick and I thought of this supplement independently.

⁵⁶ Janko 2008, 50–1.

⁵⁷ Tsantsanoglou 2014, 5.



Fig. 27.]PEA in col. vi line 1, with T below (infrared microphoto by R. Janko): height of T 2.3 mm. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports



Fig. 28.]EOI in col. vi line 4 (microphoto by R. Janko): height of I 2.7 mm. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

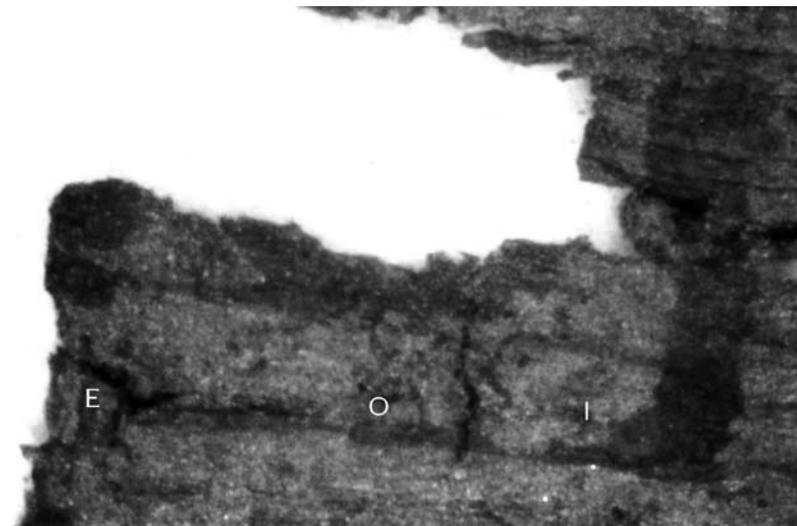


Fig. 29.]EOI in col. vi line 4 (infrared microphoto by R. Janko): height of I 2.7 mm. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

only a possible trace of the base of P survives. Next there is an upright with two horizontals extending to its right, with a line in between that slopes down to the right. I at first disregarded this diagonal as stray ink, and wished to read zeta I, supplying $\mu\hat{\omega}]ζαί$. However, the horizontals do not extend to the left of the upright and the upper one is not curved; hence I eventually concluded that E is inevitable. The middle horizontal of E, which is usually shorter than the others and was always the last stroke that the scribe made, after writing the upright plus the lowest horizontal and then the upper cross-bar, is followed by a large diagonal blot that starts at the right end of the middle horizontal and trails down towards, but without meeting, the base of the following A; the scribe always starts A with its left foot, which is all that survives of it in this case. The iota is against the vertical edge. Below the E an unexplained T stands in the interlinear space above the M of $\mu\acute{\alpha}\gamma\omega\nu$ in line 2; this T is probably an attempt to insert the article $\tau(\hat{\omega}\mu)$, which for some reason the scribe never finished.

In column vi, 3–4 somehow relate $\delta\acute{\alpha}\iota\mu\omicron\nu\epsilon\varsigma$ that get in the way to souls. KPT print $\delta\acute{\alpha}\iota\mu\omicron\gamma\epsilon\varsigma \acute{\epsilon}\mu\pi\omicron[\delta\acute{\alpha}\nu \acute{\omicron}\nu\tau\epsilon\varsigma] \mid \psi[\nu\chi\omicron\iota\varsigma \acute{\epsilon}\chi\theta\eta]\rho\omicron\iota$, but other supplements have been suggested like $\tau\iota\mu\omega]\rho\omicron\iota$. Where they read ρ , KPT saw ‘a midline spot. What seems like the foot of the right-hand stroke of α or λ is probably not ink.’ However, both visible light (Fig. 28) and infrared (Fig. 29) show that this word ends with the two lower horizontals of a characteristically small E (like that at the start of col. v,6 seen in Figs. 10–11) and an O of similar size, all of it lost except the lower curve, before the I; the E is secure. Hence I suggest that $\psi[\nu\chi\omicron\iota \kappa\lambda\eta\tau]\epsilon\omicron\iota$ be supplied, i.e. ‘daimons that are a hindrance must be called souls’. We may compare column vi,9–10, which says unambiguously that the Eumenides are souls ($\acute{\epsilon}\nu\mu\epsilon\nu\acute{\iota}\delta\epsilon\varsigma \gamma\acute{\alpha}\rho \psi\nu\chi\omicron\iota \epsilon\acute{\iota}\varsigma\iota\nu$).

Another surprise in column vi is that KPT’s reading $\phi[\rho]\gamma\acute{\iota}\theta[\epsilon]\iota\omicron\nu$ ‘bird’ in line 11 should probably become $\phi[\omicron]\rho\tau\acute{\iota}\omicron\nu$ ‘burden’. The first letter is indeed, as they write, ‘a circular letter crossed by a vertical’; but they exclude Φ on the grounds that the vertical slopes to the right and the circle seems larger than usual, and therefore suggest a corrected letter. But Φ does occasionally slope to the right with a larger circle, as near the ends of col. x,1 and x,2. Their entire supplement is also too long for the space. The remaining traces are puzzling, but after a gap there does seem to be the top of P or B with a prominent burnt fibre above, and then the top of a curved letter or a high horizontal (see Fig. 30 in visible light and Fig. 31 in infrared). In the previous line, the microphotographs (not illustrated) confirm beyond any doubt my lection

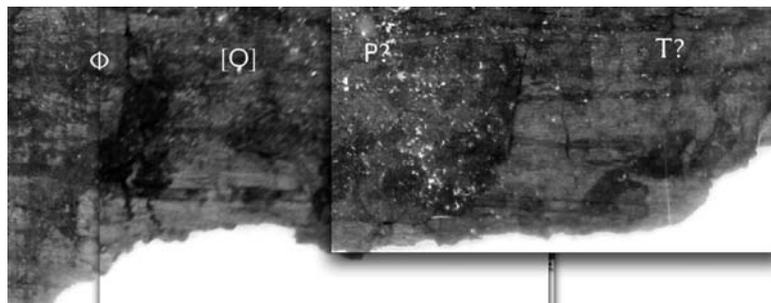


Fig. 30. $\Phi[\omicron]P\tau$ in col. vi line 11 (montage of microphotos by R. Janko): average height of letters in col. vi c.2.4 mm.
© Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

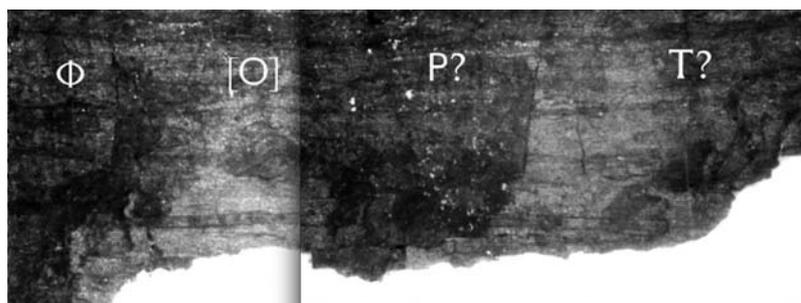


Fig. 31. $\Phi[\omicron]P\tau$ in col. vi line 11 (montage of infrared microphotos by R. Janko): average height of letters in col. vi c.2.4 mm.
© Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

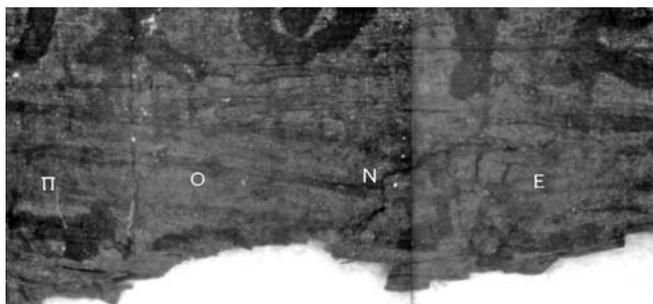


Fig. 32.]ΠΙΟΝΕ[in col. vi line 11 (montage of infrared microphotos by R. Janko): average height of letters in col. vi c.2.4 mm.
© Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports

ἰ]ερά. However, my proposal μέλλων was too long for the space and is accordingly replaced by θέλων. Also, πογε can now be read at the end of line 11 (Fig. 32), where the right upper corner of Π is followed by an upper trace of the curve of a rounded letter, a high upper right tip like that of Ν, and an upper left corner and upper horizontal which can only be Ε. I suggest the supplement πογέ[ον]ται. The author is surely explaining that the souls need to be placated with offerings because they are burdened. πογε[ὺν]ται is also possible; neither form of a contracted verb is paralleled in the papyrus, where instead, on the basis of what was previously known, we would expect πονοῦνται, but the supplement seems hard to avoid. In the light of these observations I suggest restoring the passage as follows:⁶²

- 10 ψυχὰί εἰςιν. ὧν ἔνεκ[εν ὁ θέλων ἰ]ερά θεοῖς θύειν
 φ[ο]ρτίον πρότερον [ἀείρει ταῖς ψυχ]αῖς πογέ[ον]ται
 13 γάρ]. ὥ[ς]τε καὶ τὸ κα[.....]σι.

To conclude, further work may well lead to changes in many of these proposals, since this text is so extraordinarily difficult to photograph, read and interpret, especially in its early columns. Much remains to be done, and I have been able here to give only a sample of my results so far. However, the new εἶδωλα will certainly exorcise at least as many of the old demons as they will conjure up new ones.

Bibliography

- Anon. (1982): Der Papyrus von Derveni, *ZPE* 47: after p. 300.
 Bernabé, A. (2004–5): *Poetae epici Graeci: testimonia et fragmenta. Pars 2, Orphicorum et Orphicis similibus testimonia et fragmenta* (Munich).
 – (2014): On the Rites Described and Commented upon in the Derveni Papyrus, Columns I–VI, in Papadopoulou and Muellner (2014): 19–52.
 Betegh, G. (2004): *The Derveni Papyrus* (Cambridge).
 Bierl, A. (2014): Riddles over Riddles: Mysterious and Symbolic (Inter)textual Strategies, in Papadopoulou and Muellner (2014): 187–210.
 Burkert, W. (1968): Orpheus und die Vorsokratiker: Bemerkungen zum Derveni-Papyrus, *Antike und Abendland* 14: 93–114.
 – (2014): How to Learn about Souls: the Derveni Papyrus and Democritus, in Papadopoulou and Muellner (2014): 107–14.
 Calame, C. (2014): The Derveni Papyrus between the Power of Spoken Language and Written Practice, in Papadopoulou and Muellner (2014): 165–86.
 Capasso, M. (1995): *Volumen: aspetti della tipologia del rotolo librario antico* (Naples).
 Edmonds, R. G. III (2013): *Redefining Ancient Orphism: a Study in Greek Religion* (Cambridge).
 Ferrari, F. (2010): Democrito a Derveni?, *PP* 65: 137–48.
 – (2011a): Rites without Frontiers: Magi and Mystae in the Derveni Papyrus, *ZPE* 179: 71–83.
 – (2011b): Frustoli erranti: per una ricostruzione di *P.Derveni* coll. I–III, *Papiri Filosofici: Miscellanea di Studi VI* (Florence), 39–54.

⁶² Ferrari 2014, 57, wished to read ἰπά.

- (2014): Democritus, Heraclitus, and the Dead Souls: Reconstructing Columns I–VI of the Derveni Papyrus, in Papadopoulou and Muellner (2014): 53–66.
- Graf, F. (2014): Derveni and Ritual, in Papadopoulou and Muellner (2014): 67–88.
- Harder, A. (2012): *Callimachus*, Aetia (Oxford).
- Henrichs, A. (1968): *Didymos der Blinde*, Kommentar zu Hiob (*Tura-Papyrus*) (Bonn).
- Hladký, V. (2011): *Papyrus Derveni* (Červený Kostelec).
- Hollis, A.S. (1990): *Callimachus*, Hecale (Oxford).
- Janko, R. (1997): The Physicist as Hierophant: Aristophanes, Socrates, and the Authorship of the Derveni Papyrus, *ZPE* 118: 61–94.
- (2001): The Derveni Papyrus (Diagoras of Melos, *Apopyrgizontes Logoi?*): a New Translation, *CPh* 96:1–32.
- (2002): The Derveni Papyrus: an Interim Text, *ZPE* 141: 1–62.
- (2008): Reconstructing (again) the Opening of the Derveni Papyrus, *ZPE* 166: 37–51.
- Johnston, S. I. (2014): Divination in the Derveni Papyrus, in Papadopoulou and Muellner (2014): 89–106.
- Kahn, C. (1997): Was Euthyphro the Author of the Derveni Papyrus?, in Laks and Most (1997): 55–63.
- Kotwick, M. E. (2016): *Der Papyrus von Derveni. Griechisch-deutsch. Eingeleitet, übersetzt und kommentiert*. Berlin and New York.
- Kouremenos, T., Parássoglou, G. M., and Tsantsanoglou, K. (2006): *The Derveni Papyrus* (Florence). (= KPT)
- Laks, A., and Most, G. W. (1997): *Studies on the Derveni Papyrus* (Oxford).
- Papadopoulou, I. (2014): Testing our Tools: Open Questions on the Derveni Papyrus, in Papadopoulou and Muellner (2014): ix–xxiv.
- Papadopoulou, I., and Muellner, L. (edd.) (2014): *Poetry as Initiation: the Center for Hellenic Studies Symposium on the Derveni Papyrus* (Washington DC).
- Parássoglou, G. M., and Tsantsanoglou, K. (1992): Heraclitus 1T, *Corpus dei Papiri filosofici* I.1** (Florence): 221–6.
- Piano, V. (2011): Ricostruendo il rotolo di Derveni, *Papiri Filosofici: Miscellanea di Studi* VI (Florence), 5–37.
- Rusten, J. S. (2014): Unlocking the Orphic Doors: Interpretation of Poetry in the Derveni Papyrus between Presocratics and Alexandrians, in Papadopoulou and Muellner (2014): 115–34.
- Sedley, D. (2013): The Atheist Underground, in V. Harte and M. Lane (edd.), *Politeia in Greek and Roman Philosophy* (Cambridge), 329–48.
- Sider, D. (2014): The Orphic Poem of the Derveni Papyrus, in Papadopoulou and Muellner (2014): 225–54.
- Sistakou, E. (2014): Reading the Authorial Strategies in the Derveni Papyrus, in Papadopoulou and Muellner (2014): 211–24.
- Tsantsanoglou, K. (1997): The First Columns of the Derveni Papyrus and their Religious Significance, in Laks and Most (1997): 93–128.
- (2014): Some Desiderata in the Study of the Derveni Papyrus, in Papadopoulou and Muellner (2014): 1–18.

Richard Janko, University of Michigan
 rjanko@umich.edu