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**Empedocles on the Origin of Plants:
P. Strasb. gr. Inv. 1665-1666, sections d, b and f**

Simon Trépanier

Abstract: This study seeks to improve the text of section **d** of the Strasbourg papyrus of Empedocles. It builds on the reconstruction advanced by Janko 2004, who proposes attributing sections **f** and **b** to the same column as section **d** and that all three sections are from column 12 of the ancient roll. My main departure from Janko will be to argue that the unity of lines **d** 11-18 plus sections **b** and **f** can be better shown if we assume that the passage is a description of the origins of plants alone, not of animals or of living things in general.

This study aims to improve the text of section **d** of the Strasbourg papyrus of Empedocles.¹ In particular, I will test the reconstruction advanced by Janko 2004, who proposes attributing sections **f** and **b** to the same column as section **d** and argues that all three sections are from column 12 of the ancient roll. I offer several new suggestions to improve the text and thereby reinforce Janko's reconstruction of the column. My main departure from Janko will be to argue that the unity of lines **d** 11-18 plus sections **b** and **f** can be better shown if we assume that the subject of the passage is a description of the origins of plants alone, not of animals or of living things in general. This in turn provides a new reason for thinking that section **b**, a catalogue of animals with hard, earthy parts on the outside, belongs to the bottom of the same column as section **d**. The catalogue is offered to support an analogy in which trees, where hard, earthy bark is on the outside, are likened to animals with hard, earthy outsides, such as conches, turtles and hedgehogs.

The study is in four parts. Part one introduces the papyrus, part two is my edition of the unified sections **d** plus **f** and **b**, while parts three and four offer various

¹ References to Empedocles follow the numbering from Diels-Kranz (1934-7), henceforth DK. For the testimonies or A series I have also consulted the edition of Aëtius Book II in Mansfeld and Runia (2009). For the Strasbourg papyrus, unless noted I quote from the *editio princeps* by Martin and Primavesi (1999), who should be consulted for all papyrological and palaeographic specifics. Some of my introductory remarks in section 1 are recycled, with modifications, from the introduction to Trépanier (2017a).

arguments and exegetical comments to support the reconstruction.

1. *On Nature* I and the position of section d: Janko's Reconstruction.

The Strasbourg papyrus of Empedocles, *P. Strasb. gr. Inv. 1665-1666*, was first published in 1999 by Alain Martin and Oliver Primavesi. The papyrus consists of four main continuous *ensembles* or sections (**a**, **b**, **c** and **d**) and a few smaller left-overs (**e** to **k**) in a nicely legible book-hand from the first century A.D. The passages are not quotations, but the remains of an ancient edition, making it our first witness to the direct textual transmission of Empedocles' didactic epic *On Nature*. The identification of the poem as the *On Nature* is secured by a number of overlaps with known fragments from that work.

The papyrus marks a new era in the study of Empedocles, for its importance extends far beyond merely adding new lines to the *corpus*. The new evidence it brings to light has repercussions on a number of debates affecting the overall interpretation of Empedocles. Let me briefly touch on a few of them.

The single most important advance provided by the papyrus is its demonstration of the unity of Empedocles' thought, more precisely, the non-segregation of religion from science in his poetry. According to the standard reconstruction of the *corpus*, as found in Diels-Kranz, Empedocles was the author of two major but theoretically incompatible works, a scientific poem *On Nature* and a Pythagorean-religious work, the *Purifications*. Now, however, we find that in lines 5-10 of section **d**, Empedocles laments his meat-eating sins and refers to reincarnation. At a minimum, therefore, the reference to reincarnation in lines **d** 5-10 shows that the *On Nature* also contained material on reincarnation, and the unity of Empedocles' thought follows from it. Beyond that, however, the doctrinal details of that unity are

controversial. I have argued my own version of this unity elsewhere, but will not enter that debate here.²

In another respect, the unity of Empedocles' thought, as demonstrated by section **d**, strengthens the case for the alternative reconstruction of the Empedoclean *corpus* in terms of one original work, against the standard division of Empedocles' output between two poems as described above. That question, however, is complex and here the contribution of the papyrus is not as conclusive. In the interest of clarity I can put my own cards on the table by declaring that I belong to the single-work camp, but again space precludes a full airing of the issue here.³ At most, in my text below I print my supplement of *nomos* in line **d** 7, which I think is a reference back to the exile of the soul as first presented in fragment B 115, a fragment I would accordingly place in the proem of the *On Nature* —at least on the two work assumption. I will say a little more about this below, but again in this paper my focus is on the text of section **d**.

If we leave the debate on the number of works aside, as a still-open question, then after the unity of Empedocles' thought, probably the second most important contribution of the papyrus is the marked improvement it has made to our grasp of the structure of Book I of what I will call —for convenience— the *On Nature*. Thanks to the overlap of section **a** with the last lines of the 35-line fragment B 17, combined with a stichometric mark in the margin of that same section, it is now possible to specify the content and exact location of Book I, lines 232-300 of the *On Nature*.

These lines contain what was most likely the main exposition of Empedocles'

² Very roughly, my own view is that the reincarnated soul was something like an early form of *pneuma*, a compound or mixture of air and fire that resides in the blood during life. See Trépanier (2014) for the *daimon* as a substance and body part, and Trépanier (2017a) for the cosmic habitats of soul. I offer a fuller examination of the relation of soul to the body in another paper 'The Spirit in the Flesh: Empedocles on Embodied Soul', currently under review.

³ My case for the single poem is Trépanier (2004), following Inwood (2001; 1st ed. 1992) and Osborne (1987).

doctrine of the cosmic cycle and its relation to the elements (= I.232-290), followed by a ten-line transition to what looks like biology or a discussion of the effects of Love and Strife on life (= I.291-300).⁴

Section **d**, my subject, is the second-longest continuous section. No conclusive evidence for the location of section **d** has been so far identified. Because of the similarity of content between lines **d** 11-18 with B 62 on the origins of plants, discussed below, known to be from Book II of the *On Nature*, Martin and Primavesi (1999) originally proposed that it belonged to that book. Five years later, however, in an important article, Richard Janko proposed some important modifications to the (1999) reconstruction. Janko argued 1) that section **c**, which is itself poorly preserved, but which overlaps with DK fragment B 20 (7 lines), is the top of the next column (11) of the roll, extending the continuous sequence from I.232 to 308; and 2) that sections **d**, as well as **f** and **b**, should all three be placed in the next column, number 12 of the roll. If correct, that would make section **d** lines I.331 to 360 of the *On Nature*, after a 22-line gap. We can best grasp Janko's reconstruction if we try to place the extant papyrus sections within the columns of the ancient roll. In the simplified illustration below, the dotted lines represent the text known to us from the fragments, the full lines the text from the papyrus, while the highlighted sections give a rough idea of the physical extent of the papyrus, showing where the two texts overlap:

⁴ Section **a** contains 39 whole or partial hexameter lines spread over two columns, 9 lines in **a (i)**, 30 in **a (ii)**, and overlaps with and continues fragment B 17, Empedocles' main exposition of the cosmic cycle. B 17 is securely identified as belonging to Book I of the *On Nature* by its source, the Aristotelian commentator Simplicius. In addition, the last line of section **a (ii)** contains a stichometric note showing it to be line 300 of the roll, which means that we can reconstruct B 17 plus section **a** as one continuous stretch of text, see Martin and Primavesi (1999) for all details. For a defense of lines I.232-89 as devoted solely to cosmology, and a reconstruction of the text, see Trépanier 2017b.

Col. 8	Col. 9	Col. 10	Col. 11	Col. 12
<p>B 17.1/I. 232-----</p> <p>-----</p> <p>I.240-----</p>	<p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>B 17.31/I. 262/a (i) 1--</p> <p>B 17.35/ a (i) 5-----</p> <p>(=Arist <i>Metaph.</i>)-----</p> <p>I.270/ a (i) 9-----</p>	<p>I,271/ a (ii) 1</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>I. 300/ a (ii) 30</p>	<p>I. 301/c 1</p> <p>I. 302/B 20. 1-----</p> <p>-----</p> <p>I.308/B 20.7-----</p> <p>-----</p> <p>(22 line gap)</p> <p>(I.330)</p>	<p>I. 331/d 1</p> <p>-----</p> <p>-----</p> <p>f 1 d15</p> <p>f 4 d18</p> <p>f 8</p> <p>1 line gap</p> <p>B 76.1-----</p> <p>b 2/B 76.3 -----</p> <p>I.360/ b 6</p>

Janko’s first suggestion, locating section **c** atop column 11, has been accepted by others and I agree as well so I will not argue for it here. (The field is so small I am not sure it makes sense to call that a consensus). After that, we face two separate questions. First, whether to place sections **d**, **b** and **f** together in the same column, and second, whether they belong in column 12. Of the two, the location of section **d** in column 12 is not conclusively provable, yet Janko is surely right that barring any positive evidence for placing section **d** elsewhere, the most economical assumption is that section **d** stood close by within the same papyrus roll, following upon lines I.232-308 and so ultimately from book I of the *On Nature*. Thus, although I am not completely wedded to the position of section **d** as column 12, for ease of reference I will adopt Janko’s numbering of the lines. More importantly, what I do hope to offer is an improved text of **d** and through that, a vindication of Janko’s co-location of sections **d**, **f** and **b** in one column.

2. Empedocles *P. Strab. gr. Inv. 1665-1666*, sections **d + f + b**.

For the relative positions of the different sections **d**, **f** and **b**, readers should refer to figure 1, where the column has been virtually reassembled. (Note: the darker shade of

section **b** is an artefact of the combination of different photographs; it has no bearing on its position in the roll.) As can be seen from the extant margins, section **d** belongs to the top of its column, **b** to the bottom of its respective column, while **f** contains the left margin of its text and the final letters of four line-ends of from the previous column. From that it follows that, if Janko's reconstruction holds, as a bonus we also have a few end-letters of the missing bottom 22 lines of the previous column.

Empedocles *P. Strab. gr.* Inv. 1665-1666, sections **d + f + b**, Trépanier ed.

- d 1/I.331** [ἄν]διχ' ἀπ' ἀλλήλω[ν] πρεσέ[ει]ν καὶ π[ότ]μον ἐπισπεῖν
 [πό]λλ' ἀεκαζομέν[ο]ισιν, ἀ[να]γκα[ίης ὕ]πο λυγρῆς
 [. . .]πο[μ]ένοις· Φιλίην δὲ [.] . νυν ἔχουσιν,
 [Ἄρ]πυιαί, θανάτοιο πάλοι . [. . . .] παρέσ[ο]νται.
- d 5/I.335** Ἰοῦμοι ὄτ(ι) οὐ πρόσθεν με διώλεσε νηλεὲς ἤμαρ, DK B 139.1
 ἰπρὶν ἠχλαῖς ἰσχεῖτ' ἔργα βοριᾶς πέρι μητιῖσαισθαι· DK B 139.2 (?)
 [νῦν δ]ὲ μάτη[ν ἐπὶ] τῶιδε νό[μω]ι κατέδ[ε]υσα παρειάς.
 [ἔξικ]νούμε[θα γὰρ] πολυβενθ[έα χώρον], ὄϊω,
 [ἦμῖν τ(ε) οὐκ] ἐθέλουσι παρέσσε[ται ἄλγ]ξα θυμῶι
- d 10/I.340** [ἔνθαδε νῦν· ἦ]μεῖς δὲ λόγων ἐπιβ[η]σόμ[ε]θ' αὔθις
 [κείνων· ἀλλ' ὄτ]ε δὴ συνετύγχανε φ[λογο]μὸς ἀτειρήs
 [ἔξεστηκῶς γ]ῆs, ἀνάγων π[ο]λυπή[μο]να κρᾶσιν
 [μυρία δὴ τότε φῦλ]α φυτάλμια τεκνώθ[η]σαν
 [οὐλοφυῶν, τῶν ν]ῦν ἔτι λείψανα δέρκεται Ἡῶs.
- f1/d15/I.345** ὀππ[ό]τε γὰρ πῦρ ὄρνυθ' ἴν' εἰς τόπον ἐσχάτι[ον β]ῆι,
 δὴ τότ' ἀνήϊξεν πυρὰ πολλ' αὐ]γῆι καὶ αὐτῆι
 θεσπε[σίη]· ὄμβρου δὲ ὅσ' ἀν λει]μῶνα λαχόντα
- d 18/I.348** χόρ[τος δένδρα τε γέντο, πέπηγεν δ' α]ὔτε πέρι χθῶν.
 ὡς δ[ὲ] ὅτε]
- f 6/I.350** χαλ[κεὺς]
 αἰ δὲ [φλόγες τῶς δὴ τότ' ἔπηξαν γῆν περὶ δένδρα (?)]
- f 8/I.352** τη[λεθάοντα]
- I. 353** [e.g. Consider among the animals how many have this structure:]
 [τοῦτο μὲν ἐν κόγχαισι θαλασσονόμοις βαρυνώτοις] DK B 76.1
- b 1/I.355** [ἦδ' ἐν πε]τραίοισι κα[λύμμασι τῶν] ὀστρείων] τοῦτ'

- ἰένθ' ὄψει χθόνα χρωτῶσις ὑπέριρτατα ναιετάουσας·₁ DK B.76.3
 [τοῦτο δ' ἐπ' αὖτε κραταιν[ώ]των ἄ[κροισιν ἐχίνων]
 ἰναὶ μὴν κηρύκων τε λιθορρίνων χιελύων τε₁ DK B 76.2
 [τοῦτο δ' ἐπ' ἄκ[ρῆ]ς(ι)σιν κερᾶων ἐλά[φων ὀριπλάγκτων.]
b 6/I.360 [ἀλλ(ὰ) οὐκ ἂν τελέσαιμι] λέγων σύμ[παντα γένεθλα]
 (?) I.361 [τῶν δ' ὅσ' ἔσω μὲν μανὰ, τὰ δ' ἔκτοθι πυκνὰ πέπηγε (?)]
- I.331 ... to fall apart from one another and meet their fate
 much against their will, [*word missing*] under harsh
 necessity. But [*1-2 words*] now holding on to Love
 Harpies, the lots of death [*1-2 words*] will be present.
- I.335 Woe that the pitiless day did not destroy me sooner,
 before I plotted horrible deeds with my claws for the sake of food!
 But now in vain on account of that law have I drenched my cheeks,
 For we have come to a very deep place, I believe,
 and against our wishes torments will beset our hearts
- I.340 here now. But we will embark another time upon these
 matters. When an inextinguishable fire happened
 to have stood out from the earth, leading up a much suffering-mixture,
 countless life-sustaining tribes of whole-natures
 were begotten, whose remains still now the dawn looks upon.
- I.345 For when fire was rising to go to the furthest place,
 then many fires sprang up, with a terrible flash
 and roar. But all that obtained a share of rain along the meadow
 became grass and plants, and round about [them] earth was fixed.
 Just as when...
- I.350 A smith [gilds a statue? ...
 [the flames then, just so, fixed earth around the trees]
 as they flourished...
 [Consider among the animals how many have this structure (?)]
 here in the sea-grazing, thick-backed nautilus
- I.355 and in the stony mantles of oysters,
 where you will see earth residing atop of flesh;
 or here again on the summits of strong-backed hedgehogs
 yes, and of stony-skinned conches and turtles,
 or here on the crests of horned deer that roam the mountains.
- I.361 But I could never finish telling [you] all the races,

[All that are fashioned soft on the inside, but hard on the outside (?)]

Unless specified, all supplements are from Martin and Primavesi (1999) = M-P edd. = all editors
Janko = Janko (2004) P = Primavesi (2008) or P (2011), where different. Rashed = Rashed (2011)
GM = Gemelli Marciano (2013) All A testimonia cited are as in Viték 2006

I.333 [ση]προ[μ]ένοις West, in M-P, edd.] . illegible trace δὲ [καί Ε]ϋν[οίην]ν M-P, GM
δ'έ[ρατ]ήν Janko [ήμι]ν P

I.334 θανάτοιο πάλοις [ήμῖν παρέσ]ονται M-P; [ῆδη παρέσ]ονται P

I.335-6 = DK B 139 οἴμοι ὅτι οὐ πρόσθεν με διώλεσε νηλεὲς ἡμαρ, / πρὶν σχέτλι' ἔργα βορᾶς περὶ
χείλεσι μητίσασθαι, from Porphyry *De abstinentia* 2.31 who relates the passage to purifications: 'All
that remains for them is to make amends through purifications, διὰ τῶν καθαρῶν...' On the
discrepancies with B 139.2 see M-P. ιΟἴμοι στ 1st hand; ιΟἴμοι ὄτ(ι) 2nd hand, between dots. The
model is Hesiod, *Works and Days* 174-9.

I.337 ἐπὶ τῶιδε νό[μωι κατέδ]ευσα *scripsi*.]τῶι δε and]τῶι γε 1st hand, . There is no ligature after
o, see figure 1 no. 3. ἐπὶ] cf. B 9.5 νόμωι δ' ἐπίφημι καὶ αὐτός. [νῦν δ]ἐ μάτη[ν ἐν] τῶιδε νότ[ωι
M-P, P μάτη[ν τού]τωι γε νότ[ωι Janko

The reference is to DK B 115, esp. 1-2 ἔστιν Ἀνάγκης χρῆμα, θεῶν ψήφισμα παλαιόν, / αἰδίων,
πλατέεσι κατεσφρηγισμένον ὄρκιοις. Plutarch *De exilio* 607c, places the passage in the proem, ὁ δ'
Ἐμπεδοκλῆς ἐν ἀρχῇ τῆς φιλοσοφίας προαναφωνήσας... On νόμος, see testimonia in Viték (2006)
'ad B 115' including Hippolytus 7.29.23 τοῦτον εἶναί φησιν ὁ Ἐμπεδοκλῆς νόμον μέγιστον τῆς τοῦ
παντὸς διοικήσεως λέγων ὧδέ πως· ἔστιν ... ὄρκιοις' (1. 2), ἀνάγκην καλῶν τὴν ἐξ ἑνὸς εἰς πολλὰ
κατὰ τὸ Νεῖκος καὶ ἐκ πολλῶν εἰς ἓν κατὰ τὴν Φιλίαν μεταβολήν. Compare B 135 ἀλλὰ τὸ μὲν
πάντων νόμιμον διὰ τ' εὐρυμέδοντος / αἰθέρος ἠνεκέως τέταται διὰ τ' ἀπλέτου αὐγῆς.

I.338 πολυβενθ[έα χώρον] *scripsi*, cf. B 118 ἀσυνήθεα χώρον, B 121.1 ἀτερπέα χώρον
πολυβενθ[έα δῖνον] edd. On depth applied to a non-maritime context: *Od.* 17.316-17 οὐ μὲν γάρ
τι φύγεσκε βαθείης βένθεσιν ὕλης / κνώδαλον. Plutarch *De exilio* 607c: διὰ τὸ μὴ ἀναφέρειν μηδὲ
μνημονεύειν ἔξ οἷης τιμῆς τε καὶ ὅσσου μήκεος ὄλβου' (B 119, 1) μεθέστηκεν, οὐ Σάρδεων Ἀθήνας
οὐδὲ Κορίνθου Λήμνον ἢ Σκῦρον ἀλλ' οὐρανοῦ καὶ σελήνης γῆν ἀμειψαμένη καὶ τὸν ἐπὶ γῆς
βίον...

I.339 [ήμῖν τ(ε) οὐκ] ἐθέλουσι *scripsi* μυρία τ(ε) οὐκ] edd. **I.340** [ἔνθαδε νῦν. ή]μεῖς δὲ *scripsi*.
Life in Hades via an Odyssean echo? At *Od.* 11. 484-6 Odysseus addresses Achilles: πρὶν μὲν γάρ σε
ζῶν ἐτίομεν ἴσα θεοῖσιν / Ἀργεῖοι, νῦν αὖτε μέγα κρατέεις νεκύεσσιν / ἐνθάδ' ἑών· [ἀνθρώποις.
ή]μεῖς δὲ edd. ἐπιβ[η]σόμ[εθ] 1st hand, ἐπιβ[η]σόμ[ε]ν 2nd hand, between dots. ἐπιβ[η]σόμ[εθ] edd.
(σ') ἐπιβ[η]σόμ[ε]ν M-P

I.342 [ἐξεστηκῶς γ]ῆς *scripsi*, cf. B 53 οὔτω γὰρ συνέκυρσε θεῶν τοτέ, πολλὰκι δ' ἄλλως; B
35.9-11, retreat of Strife: οὐ γὰρ ἀμεμφῶς / τῶν πᾶν ἐξεστήκεν ἐπ' ἔσχατα τέρματα κύκλου, /
ἀλλὰ τὰ μὲν τ' ἐνέμιμνε μελέων τὰ δὲ τ' ἐξεβεβήκει. πᾶσιν ἄμ' ἀλλήλο]ις Janko θνητῶν
ἠνεκέ]ως Rashed, P (2011) αἰθέρι, καρπαλίμ]ως GM

I.343 [μυρία δὴ τότε φῦλ]α *scripsi*, φῦλα is supplemented at a (ii) 25/ I.295 ὄσ[σ]α τε νῦν ἔτι
λοιπὰ πέλει τοῦτοιο τ[όκοιο,] / τοῦτο μὲν [ἄν] θηρῶν ὀριπλάγκτων ἄγ[ρια φῦλα]; B 35.7 τῶν
δέ τε μισγομένων χεῖτ' ἔθνεα μυρία θνητῶν [δὴ τότε καὶ τὰ ζῶ]ι]α Janko [δὴ τότε πρῶτα
ζῶ]ι]α Rashed [δὴ τότε πολλὰ ζῶ]ι]α P (2011)

I.344 οὐλοφῶν, τῶν ν]ῦν *scripsi* cf. B 62.4 οὐλοφῶν μὲν πρῶτα τύποι χθονὸς ἐξανέτελλον. The
οὐλοφῶν are 'whole natured' because asexual, see A 70 (Aëtius V 26, 4, Diels ed. 438) 'E. πρῶτα τὰ
δένδρα τῶν ζῴων ἐκ γῆς ἀναφῦναί φησι, πρὶν τὸν ἥλιον περιπλωθῆναι καὶ πρὶν ἡμέραν καὶ
νύκτα διακριθῆναι· διὰ δὲ συμμετρίας τῆς κράσεως τὸν τοῦ ἄρρενος καὶ τοῦ θήλεος περιέχειν
λόγον. αὐξεσθαι δὲ ὑπὸ τοῦ ἐν τῇ γῆι θερμοῦ διαιρόμενα, ὥστε γῆς εἶναι μέρη καθάπερ καὶ τὰ
ἔμβρυα τὰ ἐν τῇ γαστρὶ τῆς μήτρας μέρη. [πάντι τρόπῳ καὶ ν]ῦν Janko [οὐλομελῆ, τῶν καὶ
ν]ῦν Rashed, P (2011)

I.345 β]ῆι 1st Hand; β]ῆν 2nd Hand β]ῆι edd. β]ῆν GM. ὀππό[τε γὰρ πῦρ ὄρνυθ' ἴν'] εἰς τόπον ἐσχάτι[ον β]ῆι *temptavi*, cf. *Il.* 11.1-2 (= 19.2) Ἠὼς δ' ἐκ λεχέων παρ' ἀγαυοῦ Τιθωνοῖο/ ὄρνυθ', ἴν' ἀθανάτοισι φῶς φέροι ἠδὲ βροτοῖσι. Or e.g. a) ὀππό[τ' ὄρουσεν πῦρ ὄφρ'] εἰς τόπον ἐσχάτι[ον β]ῆι, b) ὀππό[τε πῦρ ἔτι νέρθ' ὦρτ'] εἰς τόπον ἐσχάτι[ον β]ῆν c) ὀππό[τε γὰρ πῦρ ὦρτ' ὄφρ'] εἰς τόπον ἐσχάτι[ον β]ῆι. ὀππό[τε πῦρ ἀνόρουσεν ἴν'] is a bit too long, as is ὀππό[τ' ὄρουσεν πῦρ θέλον] εἰς τόπον ἐσχάτι[ον β]ῆν. If we emend the extant subjunctive to the indicative, we could have ὀππό[τε πῦρ ἀνόρουσε καί] εἰς τόπον ἐσχάτι[ον β]ῆι. Compare B 30.1-2 αὐτὰρ ἐπεὶ μέγα Νεῖκος ἐνὶ μελέεσσιν ἐθρέφθη/ ἐς τιμάς τ' ἀνόρουσε τελειομένοιο χρόνιοιο and B 62.6 τοὺς μὲν πῦρ ἀνέπεμπε θέλον πρὸς ὁμοῖον ἰκέσθαι. On the rise of the sun, *Od.* 3.1-2. Ἥλιος δ' ἀνόρουσε, λιπῶν περικαλλέα λίμνην,/ οὐρανὸν ἐς πολύχαλκον, ἴν' ἀθανάτοισι φαεῖνοι. On the place of the sun in Empedocles, cf. A 49: Ἐ. τὸν τοῦ ἡλίου περιδρομον εἶναι περιγραφὴν τοῦ πέρατος τοῦ κόσμου. For the final clause, cf. ὄφρ' ἂν ἐγὼ βεῖω προτὶ Ἴλιον, *Il.* 6.113 ὀππό[τε δὴ γ' αἰθὴρ μιχθ]εἰς τόπον Janko ὀππό[τε δὴ γ' ἀέρι μιχθ]εἰς Rashed ὀππό[τε δ' ἠλεκτωρ ἀρθ]εἰς P (2011). Compare also B 9.1 ed. Primavesi (2011) οἱ δ' ὅτε μὲν κατὰ φῶτα μιγὲν φῶς αἰθέρι<ον β]ῆι> from Plutarch, *Adv. Col.* 1113AB

I.346 δὴ τό[τ' ἀνηίξεν πυρὰ πολλ' αὐ]γῆι καὶ αὐτῆι *temptavi* or δὴ τό[τ' ἀναίξεν πυρὰ γῆς αὐ]γῆι καὶ αὐτῆι. Compare Achilles' flight from the Scamander at *Iliad* 21.246-7 ὃ δ' ἄρ' ἐκ δίνης ἀνορούσας/ ἦίξεν πεδίοιο ποσὶ κραιπνοῖσι πέτεσθαι. Otherwise, a running metaphor is attested in the doxography: A 30 ἐκ πρώτης φησὶ τῆς τῶν στοιχείων κράσεως ἀποκριθέντα τὸν ἀέρα περιχυθῆναι κύκλωι μετὰ δὲ τὸν ἀέρα τὸ πῦρ ἐκδραμὸν καὶ οὐκ ἔχον ἑτέραν χώραν ἄνω ἐκτρέχειν ὑπὸ τοῦ περὶ τὸν ἀέρα πάγου. So perhaps: δὴ τό[τ' ἀνέδραμε πῦρ ἐκ γῆς αὐ]γῆι καὶ αὐτῆι or δὴ τό[τε πῦρ προθέεσκ' ἐκ γῆς αὐ]γῆι καὶ αὐτῆι. For αὐ]γῆι compare *Ilias* 9.206 ἐν πυρὸς αὐγῆι. For αὐ]γῆι καὶ αὐτῆι compare Lucretius *DRN* 1.722-5 *hic Aetnaea minantur/ murmura flammaram rursus se colligere iras,/ faucibus eruptos iterum vis ut vomat ignis/ ad caelumque ferat flammai fulgura rursus* as well as 5.783-7. κλαγ]γῆι καὶ αὐτῆι edd. δὴ τό[τ' ἀνέπτουτ' οἰωνοὶ κλαγ]γῆι καὶ αὐτῆι Janko δὴ τό[θ' ἕκαστα διετμήθη κλαγ]γῆι καὶ αὐτῆι Rashed, P (2011)

Some other possibilities: 1) δὴ τό[τ' ἀνέπτατο πῦρ ἐκ γῆς αὐ]γῆι καὶ αὐτῆι/ θεσπε[σίηι, compare Plutarch *de facie* 934B who quotes *Il.* 9.212-3 αὐτὰρ ἐπεὶ πυρὸς ἄνθος ἀπέπτατο παύσατο δὲ φλόξ/ ἀνθρακίην στορέσας, with 212 being an Empedoclean-sounding variant reading of the received text αὐτὰρ ἐπεὶ κατὰ πῦρ ἐκάη καὶ φλόξ ἐμαράνθη. 2) δὴ τό[τ' ἀνεβλάστησε τὸ πῦρ αὐ]γῆι καὶ αὐτῆι On flames and flowers, compare a) Aeschylus, *Prom.* 6-7 τὸ σὸν γὰρ ἄνθος, παντέχνου πυρὸς σέλας,/ θνητοῖσι κλέψας ὥπασεν b) Lucretius *DRN* 1.900 on Anaxagoras: *flammai fulserunt flore* c) Lucretius *DRN* 5.783-7 *Principio genus herbarum viridemque nitorem/ terra dedit circum collis camposque per omnis,/ florida fulserunt viridanti prata colore,/ arboribusque datumst variis exinde per auras/ crescendi magnum inmissis certamen habenis.*

I.347 θεσπε[σίηι· ὄμβρου δὲ ὄσ' ἂν λει]μῶνα λαχόντα *scripsi* cf. B 62.5-6 ἀμφοτέρων ὕδατος τε καὶ εἶδος αἶσαν ἔχοντες·/τοὺς μὲν πῦρ ἀνέπεμπε θέλον πρὸς ὁμοῖον ἰκέσθαι; alternatively, ὕδατος δὲ ὄσ' ἂν λει]μῶνα. On λαγχάνειν cf. B 96.2, and A 70, quoted at line I.343. θεσπε[σίηι· τὰ δ' ὑπαὶ γαίης κευθ]μῶνα λαχόντα Janko θεσπε[σίηι· τὰ πρὶν ὤκεανοῦ λει]μῶνα λαχόντα Rashed κευθ]μῶνα λαχόντα P (2011)

I.348 χόρ[τος δένδρα τε γέντο, πέπηγεν δ' α]ῦτε πέρι χθῶν *scripsi*; or χόρ[τος καὶ φυτὰ γέντο]υτο πέρι 1st Hand]υτε πέρι, 2nd Hand, τε between dots. For γέντο, cf. B 98.5 ἐκ τῶν αἰμά τε γέντο; for πέπηγεν cf. B 75 τῶν δ' ὄσ' ἔσω μὲν πυκνά, τὰ δ' ἔκτοθι μανὰ πέπηγε; for α]ῦτε πέρι cf. B 154 περὶ δ' ἦγαγεν αὐθις ὀπίσω χόρ[τους τ' ἐξεγένοντο, ὅπη εἴλ]υτο πέρι χθῶν Janko χόρ[τους τ' ἀνθεμόεντας, ὅπη εἴλ]υτο πέρι χθῶν Rashed χόρ[τους ὅπη εἴλ]υτο πέρι χθῶν Primavesi (2011)

I.349 ὡς δ[ι' ὅτε *scripsi* cf. B 84.1 ὡς δ' ὅτε τις ὡς δ[ι' ὀπόταν edd. **I.350** χαλ[κεὺς Janko, cf. Hippolytus, *Ref.* 7.18 αὕτη ἐστὶν ἡ κόλασις ἣν κολάζει ὁ δημιουργός, καθάπερ χαλκεὺς τις μετακοσμῶν σίδηρον καὶ ἐκ πυρὸς εἰς ὕδωρ μεταβάπτων.

I.351-2 αἰ δὲ [φλόγες τῶς δὴ τότ' ἔπηξαν γῆν περὶ δένδρα (?)] *temptavi*, or αἰ δὲ [φλόγες τότε γῆν πυκινὴν πῆξαν περὶ δένδρα] or αἰ δὲ [φλόγες τότε ὥδε πεπήγασι γῆν περὶ δένδρα] /τ[η]λεθάοντα cf. B 85 ἡ δὲ φλόξ ἰλαίειρα μινυθησάτης τύχε γαίης, and for φλόγες Aratus, *Phaen.*

979, 999, 1034; B 86 ἐξ ὧν ὄμματ' ἔπηξεν ἀπειρέα δι' Ἀφροδίτη, B 73 ὡς δὲ τότε χθόνα Κύπρις, ἐπεὶ τ' ἐδίηεν ἐν ὄμβρωι,/ εἶδεα ποιπνύουσα θοῶι πυρὶ δῶκε κρατῦναι τη[λεθάοντα cf. B 153b Viték (2006) on trees τῶν γὰρ ὅσα ῥίζαις μὲν ἐπασσυτέρ', [α]υτὰ[ρ ὕ]περθε/ μᾶνοτεροις ὄρηξιν καταστῆ(ι) τηλεθάο[ντα]

I.353-60 = section **b**, after Janko **I.353** *exempli gratia*: ἄθρει δ' ἐν ζώοις ὅσα ταύτην τάξιν ἔχουσι, cf. **a** (ii) 13/I.283 [καὶ πο]τὲ μὲν γὰρ γαί(α) [ὑπ]άτη θέει ἠέλ[ιός τε]/ **a** (ii) 14/I.284 [νέρτα]τος, ἦν δὴ κα[ί ν]υν ἐπ' ἀνδράσι τ[άξιν ἔχουσι.] in Trépanier ed. (2018)

I.354 = DK B 76.1 **I.355** [ἦδ' ἐν πε]τραίοισι κα[λύμμασι τῶν ὀστρείων] *scripsi* cf. Plutarch *De facie* 927 f οὐδὲ τοῦ πυρὸς τὸ μὲν ἄνω περὶ τὰ ὄμματα ἀποστίλβον κατὰ φύσιν ἐστὶ τὸ δ' ἐν κοιλίᾳ καὶ καρδίᾳ παρὰ φύσιν, ἀλλ' ἕκαστον οἰκείως καὶ χρησίμως τέτακται. ἵνα μὴν κηρύκων τε λιθορρίνων' χελωνῶν τε' (B 76.2) καὶ παντὸς ὀστρέου φύσιν, ὡς φησὶν ὁ Ἐμπεδοκλῆς, καταμανθάνων ἔνθ' ὄψει χθόνα χρωτὸς ὑπέρτατα ναιετάουσιν' (B 76.2) [ἦδ' ἐν πε]τραίοισι κα[λύμμασι, τοῦτο δὲ πίναις] Janko **I.356** = DK B.76.3

I.357 [τοῦτο δ' ἐπ' αὔ]τε κραταιν[ώ]των ἄ[κροισιν ἐχίνων] *scripsi*. For ἄκροισιν cf. B 3.8 καὶ τότε δὴ σοφίης ἐπ' ἄκροισι θοάζειν. [θώρηξ δ' αὔ]τε M-P [θώρηξ δ' αὔ]τε κραταιν[ώ]των ἀ[λίων τε παγούρων] Janko **I.358** = B 76.2. ἵνα μὴν κηρύκων τε λιθορρίνων χιελύων τε, parygus κηρύκων γε

I.359 [τοῦτο δ' ἐπ' ἄκ]ρη(ι)σιν κεραῶν *scripsi*. A small curved trace is extant for the rho, compare the sequence κρατ in I.357.] μελίαι κεραῶν ἐλά[φων M-P [ὄστρακα κα]ἰ μελίαι κεραῶν ἐλά[φων ὀριπλάγτων] Janko

I.361 [τῶν δ' ὅσ' ἔσω μὲν μανὰ, τὰ δ' ἔκτοθι πυκνά πέπηγε (?)] οἱ [...τυχόντα (?)] cf. B 75 τῶν δ' ὅσ' ἔσω μὲν πυκνά, τὰ δ' ἔκτοθι μανὰ πέπηγε,/ Κύπριδος ἐν παλάμησι πλάδης τοιῆσδε τυχόντα

3. Section d lines 11-18: DK B 62 and the Origins of plants

This section covers the reconstruction of lines **d** 11 to 18 and the integration of the top part of section **f** to these lines. Section four deals with the bottom half of the column and the link to section **b**. Before arguing my case, I start with some questions of context, that is, the nature of Strife in Empedocles, the content of lines 1 to 10, and a look at the most potent parallel to lines **d** 11-18, fragment B 62.

Strife in the cycle and section d

For lines **d** 1-18 as a whole, the unifying thread is a focus on the separating force of Strife, with Empedocles exploring its negative aspects over lines 1-4, and its more creative aspects in lines 11-18, where the separating action of Strife results in the 'begetting' of living beings. This bivalency of Strife is well attested in the corpus,

where it applies equally to Love. Indeed, when Empedocles considers his two moving or psychological powers at their broadest, he views them as both destructive and creative. This comes out most clearly in the (macro)cosmic cycle where, according to the more standard, symmetrical reconstruction, the cosmic phases are produced by the interplay of the two opposite influences of Love and Strife, while the outer or ‘a-cosmic’ boundaries of the cycle are defined by the complete sway of one or the other over the four elements. Under the unopposed reign of Love, the elements form the *Sphairos* god, when they are all fused into a single blessed unity (see B 27-30). Under the reign of Strife the elements either arrange themselves into separate, concentric circles, or move about without regular motions and without forming any permanent mixtures or bonds —the evidence is unclear. In between, we have worlds like ours, where both powers operate.⁵ Within that wider context, therefore, the bivalency of Strife we find in section **d** is typical. More specifically, the material in lines **d** 11-18 almost certainly describes the agency of Strife during its rise.

Lines 1 to 10

In lines **d** 1-2, where we pick up the text mid-sentence, the negative aspects of Strife are to the fore. The subjects which ‘fall apart from each other’ and ‘meet their fates’ must be either whole animals or at least their limbs, and Empedocles relates the process to Necessity. Lines 3 and 4, however, are harder to make out. (Above I have left the gaps blank as I am unsatisfied with all suggestions so far.) At a minimum Love is mentioned, most likely as a counter to the agency of Strife, then in line four

⁵ See especially B 17.3-5 and now the papyrus at **a** (ii) 30/ I.300 ὄψει γὰρ ξύνοδόν τε καὶ διάπτυσιν τε γενέθλη[ς,] ‘for you will see the coming together and the development that is birth [life].’ On the double cosmogony and zoogony, O’Brien (1969) 196-236; Trépanier (2003); Sedley (2007) 40-52 (with a novel twist). According to Aristotle, we now live in the world (but not the reign) of Strife (*De Gen. et Corr.* 334a6).

Empedocles mentions ‘Harpies’ and ‘lots of death’. Although the meaning of these lines remains uncertain, Strife here appears related to death.

Lines **d** 5-10 then mark a break in the exposition as Empedocles suddenly and dramatically bewails his fallen state for his sins of meat-eating. As recognized by Martin and Primavesi (1999), and most since, these lines are the key passage for the unity of Empedocles’ thought. The overlap of **d** 5 and 6 with the previous B 139, known to us from Porphyry, who relates the passage to ‘purifications’ removes any doubt that the lines refer to the story of the exile of individual souls, which must therefore have had its place in the *On Nature*.⁶ Although I have printed my text of these lines above, my full case for their reconstruction is in Trépanier (2017a), and here I will only discuss my two most important departures from previous editors.

The most important of all comes at line 7, [νῦν δ]ἔ μάτη[ν . .] τῶιδε νο[. . κατέδ]ευσσα παρειάς (or perhaps τῶιγε). There, based on a trace to the right of the omicron in the sequence τῶιδενο, earlier editors posited a ligature after the omicron, leading them to posit that the missing letter was a *tau* and to supplement the whole word as *notos* ‘storm’ understood figuratively as a reference to tears. Thus M-P (1999) have μάτη[ν ἐν]τῶιδε νότ[ωι, while Janko (2004) proposes μάτη[ν τοῦ]τῶι γε νότ[ωι and renders the whole line ‘now to no end my cheeks I wet with tears.’ But as can be seen in the detail picture 3 of figure 1, the extant squiggle does not in fact support a ligature, and is no more than a *lapsus calami*.⁷ This then leaves the field open to speculation based on the first two letters alone. I propose instead [νῦν δ]ἔ μάτη[ν ἐπὶ] τῶιδε νό[μωι κατέδ]ευσσα παρειάς ‘But now in vain on account of that law

⁶ *De abstinentia* 2.31, p. 161.13-20: “Since none is without sin, all that remains is for them to later be healed through purifications for their former sins of food. This would be like if one were to put the horrible deed before one’s eyes and to cry out, in Empedocles’ words: ‘Woe that...’ ” The discrepancy between our text and B 139.2 could attest a variant, rather than a mistake.

⁷ The trace goes up rather than across, as in other ligatures of OT. More importantly, it does not reach the edge of the papyrus and tapers in width as the pen is lifted off the page. Nor is there any evidence of abrasions on the edge of the papyrus, to lead us to think any ink has flaked off.

have I drenched my cheeks.’ The word *nomos* is attested at Empedocles B 9.5, although not exactly in the same sense, but *nomos* as a reference to the law of exile of souls is well attested in our secondary sources.⁸ If correct, this passage would imply a reference back to the law that regulates the exile of the *daimones* as described in B 115, which would here be presupposed, and that in turn would add to the evidence for locating B 115 in the *On Nature*, most likely in the proem.⁹

This integration of the story of the exiled *daimones* into the story of the cosmos is the basis for my other supplements in **d** 5-10. Of these, let me mention only **d** 8 [ἐξικ]νούμε[θα γὰρ] πολυβενθ[έα χώρον], οἶώ, ‘For we have come to a very deep place, I believe.’ The notion of depth is guaranteed by the extant πολυβενθ[so that if we combine that with my suggested supplement place, χώρος, rather than Martin and Primavesi’s δῖνος, ‘whirl’, the passage can be taken as a hint—one among others in the *corpus*— at the doctrine of life in Hades. Once more this is not a claim I can substantiate here, but the idea is that Empedocles suggested, with respect to the exiled *daimones*, that their place of exile is identical with this, our current terrestrial life, which is Hades. This Pythagorean (?) notion of life in Hades is well attested in Plato, in particular the myth of the *Phaedo*, but again I refer the matter to my fuller discussion in Trépanier 2017.

Finally, this reading of lines **d** 5-10 as an interjection and a reference back to the theme of the exile of the *daimones* is in part of the reason why, following a

⁸ For my reconstruction of lines **d** 5-10, see part 3 of Trépanier (2017a). For *nomos*, see for example Plotinus *Ennead* IV8.1.18, who there paraphrases B 115: Ἐμπεδοκλῆς τε εἰπὼν ἀμαρτανούσαις νόμον εἶναι ταῖς ψυχαῖς πεσεῖν ἐνταῦθα καὶ αὐτὸς φυγὰς θεόθεν γενόμενος ἤκειν πίσυνος μαινομένῳ νείκει τοσοῦτον παρεγύμνου.

⁹ Even among upholders of the two-poem view, the location of B 115 is debated, some placing it in the *On Nature*, others keeping in the *Purifications*, as in DK. Those who locate B 115 in the *On Nature* include Van der Ben (1975), Sedley (1998), 8-10, Graham (2010), = his F 8; for the *Purifications*: O’Brien (1981) and (2001); Gemelli Marciano (2013). = no. 160; Primavesi (2011) = no. 8. As some audience members helpfully pointed out at Trier, the deictic τῶιδε should imply a more proximate reference. For my attempted defense of it, see my (2017a). But otherwise the alternative reading τῶιγε can be used, which still presupposes the story of the *daimones* from B 115.

suggestion from Sedley, I take ἐπιβ[ησούμ]εθ' αὖθις at **d** 10 as promise to return to the topic of transmigration and exile, rather than, as in Primavesi and Janko, a transitional sentence signaling a return to the ongoing cosmological exposition.¹⁰ As I see it, Empedocles combined both themes in his poem, and cut back and forth between them. This allowed him not only to vary its content but also to keep the hearers on their toes. The exclamation found in **d** 5-10 is a 'teaser', referring back to the exile of the *daimones* and promising future revelations on the postmortem destiny of the soul. Yet, surely deliberately, it also holds back from full disclosure on these matters, ensuring that the audience remains keen for more.

Lines d 11 to 18 and fragment B 62

We can now begin to focus upon lines 11 to 18 themselves. As noted above, Martin and Primavesi (1999) originally proposed locating section **d** as far away as Book II on the basis of its closeness to that fragment. Whether that provides good reason to locate section **d** in book was already doubted by Osborne (2000), but otherwise it is certainly true that B 62 is our best guide to the process described in **d** 11-18.¹¹ Any attempt to make sense of lines **d** 10 to 18 has to start from here:

νῦν δ' ἄγ', ὅπως ἀνδρῶν τε πολυκλαύτων τε γυναικῶν
 ἐννουχίους ὄρπηκας ἀνήγαγε κρινόμενον πῦρ,
 τῶνδε κλύ'· οὐ γὰρ μῦθος ἀπόσκοπος οὐδ' ἀδαήμων.
 οὐλοφρεῖς μὲν πρῶτα τύποι χθονὸς ἐξανέτελλον,
 5 ἀμφοτέρων ὕδατός τε καὶ εἶδος αἴσαν ἔχοντες·
 τοὺς μὲν πῦρ ἀνέπεμπε θέλον πρὸς ὁμοῖον ἰκέσθαι,
 οὔτε τί πω μελέων ἐρατὸν δέμας ἐμφαίνοντας
 οὔτ' ἐνοπήν οἶόν τ' ἐπιχώριον ἀνδράσι γυῖον.

¹⁰ Janko renders: 'but we'll embark once more upon our tale.' Sedley's suggestion is found in Osborne (2000), 336 n. 9.

¹¹ Osborne (2000) 335-6 already voiced strong doubts about the placement in Book 2, before Janko suggested the new placement.

But come: how, of men and much-weeping women
Separating fire led up the benighted shoots,
Hear now. For the tale is not aimless or unlearnable.
First, whole-natured forms sprang out of the earth,
Having an allotment of both water and heat.
These fire was sending up, wanting to reach its like,
nor were they yet displaying the lovely frame of the limbs
nor voice (face?) nor organ local to man.

Our source for B 62, Simplicius, explains that these lines occurred in Book II, before Empedocles described the emergence of sexual differentiation.¹² The account of sexual differentiation itself he does not quote, but what he does quote looks like a recapitulation of earlier content by Empedocles, in order to provide the setting for the emergence of this new phenomenon. In this recapitulation Empedocles describes the rise from the earth of the ‘benighted shoots’ of men and women, led along by ‘separating fire.’ As already noted above, this context of separation implies that in B 62 the agency—and hence world—of Strife is presupposed by Empedocles. As we can learn from the doxography, the passage also presupposes a prior cosmological context, in which air and fire have already begun to separate themselves out from the central mixture, A 30:

He says that air was first separated off from the blend of the elements and poured round in a circle; after air, fire, springing out and having no other place [to go] springs out upwards [and lodges] under the solidified air. There are two hemispheres moving in a circle round the earth, the one wholly of fire, the other mixed from air and a little fire, which he thinks is night. The initial motion occurred from it so happening that a certain accumulation of fire caused it to start falling. The sun is not by nature fire, but a reflection of fire similar to that occurring off of water...

transl. Inwood (2001)

¹² *In Phys.* 381, 29 εἰπόντος δὲ τοῦ Ἐμπεδοκλέους ἐν τῷ δευτέρῳ τῶν Φυσικῶν πρὸ τῆς τῶν ἀνδρείων καὶ γυναικείων σωμάτων διαρθρώσεως ταυτὶ τὰ ἔπη. Empedocles says the following verses in book two of the *Physics*, before the articulation of male and female bodies:

In B 62 it is the upper fire that draws along, by the attraction of like to like, the fire within the earth, and so draws up the ‘whole-natured forms’ out from the earth. The central interpretative difficulty of B 62 is whether or not the ‘benighted shoots of men and women’, are the same things as the ‘whole natured forms’ of line 4. Both alternatives have some plausibility. In favor of identity, Empedocles encourages us to see them both as drawn up by fire. Against it, he tells us that the ‘whole-natured forms’ grew out of the earth first, before men and women were on the scene.¹³ But if so, why then does he call them the shoots ‘of men and women’? What does seem certain is that the ‘whole natured forms’ must be plants. First, they rise from the earth. Second, as shown by testimonium A 70 (Greek text in the *app. crit.*), their designation as ‘whole natures’ is best explained as pointing to the absence of sexual differentiation among them:

Empedocles says that trees first grew out of the earth, before the sun was gathered together and before night and day were separated. On account of the balance of their blend they contain the ratios of male and female. They grow by being pulled apart by the heat within the earth, so that they are part of the earth, as embryos are parts, inside the womb, of the mother.

That must be why Empedocles mentions them before launching into the origins of men and women: the introduction of sexual differentiation by Strife is the novelty he is about to describe.

All in all, therefore, it is probably better to understand the ‘benighted shoots’ as plants. The epithet ‘benighted’ must reflect the fact, as related in A 70, that plants arose before the full separation of night and day. The point of calling them the shoots

¹³ Wright (1995), 216-217 stresses the differences. Bollack (1965-9 vol. 3 p. 429), ad 510, combines them: ‘Les hommes, dans leur état de prototypes, sont assimilés à des végétaux.’

‘of men and women’ would then be to anticipate the eventual continuity between those first forms of life and the more differentiated forms that succeeded them.¹⁴

The collocation of sections d and f: the origins of plants

We are now ready to undertake the reconstruction of the text. As recognized by all previous editors, the extant portions of the papyrus describe the same mechanism as in B 62. Separation by fire, here an ‘unwearing flame’ φ[λογ]μὸς ἀτειρήs, is the driving force leading to the production of living creatures, the things that ‘were begotten’ τεκνώθ[η]σαν. The link to Strife (and perhaps life in Hades) is further shown by the characterization of the thing led up as ‘a much suffering mixture’, π[ο]λυπ[η]μόνα κρᾶσις. Based on B 62, Martin and Primavesi (1999) therefore suggested that d 11-18 describes the origins of all living things, and accordingly supplemented line d 13/ I.343 to: ζῶια φυτάλμια τεκνώθ[η]σαν. In this they were followed by all subsequent editors. Now the word ζῶια ‘living creatures’ here is very poorly preserved. No great weight need attach to the word itself—at a stretch, it could include plants, alongside animals—but what I do want to query is the assumption that generated that particular supplement. Instead of animals or living creatures in general, I propose that we can make better sense of the passage on the slightly narrower basis that the origins of plants, and plants alone, is Empedocles’ subject.

At the level of content, here then is where I part with Janko (2004), whose edition is built on a general zoogonic understanding of the passage, and the same goes for Rashed (2011) and Primavesi (2008 and 2011). At the papyrological level, however, that is, with respect to the reconstruction of the column, I stay with Janko

¹⁴ Through transmigration perhaps? Beyond Simplicius himself, the Aristotelian context at *Physics* 199b also strongly implies a discussion of plants, not animals.

beyond Rashed and Primavesi, who retain Janko's collocation of section **f** with **d** but disregard the possible addition of **b**. But against them all I will argue that we can make more headway in reconstructing the whole sequence by staying closer to B 62 and the doxography. Not only that, but if the origins of plants is indeed the topic of these lines, I hope to show that the link to **f** becomes much stronger, while this also opens a new and very plausible thematic link to section **b**.

We have already seen that if B 62 does refer to men and women, it does so only by specifying that they are yet to come, and that plants were first on the scene. More importantly, and now to start my positive case, the legible portions of sections **d** and **f**, prior to any supplements, can be unified around the topic of the origins of plants. Section **f** on its own offers 8 line-openings of no more than 2 to 4 letters each, but enough for us to be confident of most of the words. The first two lines offer a set of related temporal coordinating conjunctions $\delta\pi\pi\acute{o}\tau\epsilon$ and $\delta\eta\ \tau\acute{o}\tau\epsilon$, not by themselves indicative of any specific content, but the third line preserves $\chi\acute{o}\rho\epsilon$ for which the most likely supplement, for lack of alternatives, is $\chi\acute{o}\rho\epsilon\tau\omicron\varsigma$ 'grass' or 'fodder' as first suggested by Janko. More tentatively, the first two letters of **f** 8/I.352 are compatible with the epithet $\tau\eta\lambda\epsilon\theta\acute{\alpha}\omicron\nu\tau\alpha$, known to us from B 153b Viték (2006) where it is applied to trees. If so, the word $\delta\acute{\epsilon}\nu\delta\rho\alpha$ probably figured in the lost portion. Thus, even before we consider a single supplement to the text, we have two plausible connections between **d** and **f** on the subject of plants, and no mention of animals.

With that as my entry-point, let us now consider gains to be made in reconstructing I.341-52 once we assume that Empedocles is describing the rise of plants, driven along by fire's prior ascent to the heavens. (For parallels and alternative suggestions, see the apparatus in section 2.) This ascent I understand as contained in the opening of my restored line **d** 14/I.342 $[\acute{\epsilon}\xi\epsilon\sigma\tau\eta\kappa\acute{\omega}\varsigma\ \gamma\eta\varsigma, \acute{\alpha}\nu\acute{\alpha}\gamma\omega\nu\ \pi\omicron\lambda\upsilon\pi\acute{\eta}[\mu\omicron]\nu\alpha$

κρᾶσιν, which specifies the prior separation of fire from the earth, as in the doxography, and gives more point to the participle ἀνάγων, which then has the exact same function as in B 62. In other words, we should assume that although much or most of the fire has now left the earth for the upper regions, there is also still much fire in the earth, cf. B 52 πολλά δ' ἔνερθ(ε) οὕδεος πυρὰ καίεται, 'many fires burn beneath the earth'. It is the fire seeking to reach its like in heaven that 'leads up' the growth of plants from the earth. For plants specifically I also therefore suggest as an alternative to ζῶ]α φυτάλμια at line **d** 15/I.342 [μυρία δὴ τότε φῦλ]α φυτάλμια. The term φῦλ]α, 'tribes' or 'race' or 'kind', is of course very general, but their description as φυτάλμια may also include the meaning 'life-nourishing' and therefore hint at plants (see also below).

Next, and skipping I.344-6, at **d** 17/ I.347 I understand the participle λαχόντα as a neuter plural, either denoting the races or creatures or perhaps plural fires (see below on πυρὰ) produced by the multiple instances of these eruptions, as suggested by ὁππότ]ε and δὴ τό]τε, 'whenever... then...' The element these creatures or fires 'obtain a share of', in the genitive, I supply with ὄμβρου, 'rain', as in B 62 (but ὕδατος also meets all criteria, see B 21), while the act of creation, I propose, occurs along a 'plain' or 'meadow' ἀν λει]μῶνα, itself yet another indication of botanical content. Thus for I.347/8 together we get: [ὄμβρου δὲ ὅσ' ἀν λει]μῶνα λαχόντα/ χόρ]τος δένδρα τε γέντο, which we can compare to B 62.5 ἀμφοτέρων ὕδατός τε καὶ εἶδεος αἴσαν ἔχοντες where we have a similar stress on fire and water.

Lines I.344-6 present a number of challenges, for which there may be no definitive answer, only possibilities. Let me take them up in order of plausibility rather than in the order which they appear in the text.

First is the enjambment over lines I.345/6. Throughout this study my central assumption has been that, if the ultimate agent of these changes is Strife, the more proximate cause, and the subject of the verbs in lines I.345/6 is fire. If so, then for I.346 this subject allows me to supplement ἀύ]γῆι καὶ ἀύτῆι/ θεσπε[σίῃι ‘with a terrible flash and roar’ as a description of fire’s eruption from the earth, rather than κλαγ]γῆι καὶ ἀύτῆι. For this specific point and for my reconstruction of the passage as a whole, a number of Lucretian parallels are especially helpful, although I cannot analyze them here in any detail.

The first of them, from the praise of Sicily in Book 1, an overtly Empedoclean passage, provides a combination of volcanic fire erupting from the earth, where roaring and the flash of fire are intermingled, *DRN* 1. 722-5:

*hic Aetnaea minantur
murmura flammaram rursum se colligere iras,
faucibus eruptos iterum vis ut vomat ignis
ad caelumque ferat flammai fulgura rursum.*

...here Aetna’s rumblings threaten that the angry flames are gathering again, that once more its violence may belch fires bursting forth from tis throat and once more shoot to the sky the lightnings of its flame. transl. Rouse-Smith (Loeb)

The second passage, *DRN* 5.1087-93, is unfortunately lacunose but Lucretius appears to evoke Empedocles in describing how fire, according to a rival, non-Epicurean account, leaves the central earth for the outer heaven:

1090 *at contra tenuis exponunt aeris auras
et calidos simul a medio differrier ignis,
atque ideo totum circum tremere aethera signis
et solis flammam per caeli caerula pasci,
quod calor a medio fugiens se ibi conligat omnis,
nec prorsum arboribus summos frondescere ramos
posse, nisi a terris paulatim cuique cibatum
* * **

but on the other hand [they] explain that the thin breezes of air and the hot fires are at the same time carried away from the middle; and that the whole firmament twinkles with constellations and the sun’s flame feeds through the blue sky, because all the heat

fleeing from the middle gathers itself together there. And that the topmost branches of trees could not even produce leaves, if food were not [distributed] to each from the earth, gradually [supplied by an internal fire...]¹⁵ transl. Rouse-Smith (Loeb)

Somewhat surprisingly, Lucretius suddenly turns to report that this rival account explained that this natural upward movement of fire **what was** the means whereby nourishment from the soil reaches the top of the tree: it is drawn up from within the earth by the ascent of fire. Whatever else is going on here, Lucretius seems to have Empedocles in mind. Lastly a passage from book 5 connects the Lucretian origins of plants with fire through its use of color and light imagery, *DRN* 5.783-7:

*Principio genus herbarum viridemque nitorem
terra dedit circum collis camposque per omnis,
florida fulserunt viridanti prata colore,
arboribusque datumst variis exinde per auras
crescendi magnum inmissis certamen habenis*

In the beginning the earth gave forth the different kinds of herbage and bright verdure about the hills and all over the plains, and flowering meadows shone with the color of green; then to the various kinds of trees came a mighty struggle as they raced at full speed to grow up in the air.¹⁶ transl. Rouse-Smith (Loeb)

Lucretius denotes the brightness of the first plants by using the verb *fulgeo*, usually used of lightning.

A more difficult problem over lines I.345-6 is how to reconstruct the missing verbs in the central gap. Our only positive clue is the end of line I.345, but unfortunately the verb is not fully preserved. If restoring the initial β is obvious, less obvious is the choice between the first hand's aorist subjunctive, $\beta\eta\iota$, and an infinitive ending, $\beta\eta\nu$, suggested by the second hand, between two dots. (I exclude the first person, which seems highly unlikely). As it is, the central gap deprives us of the evidence needed to decide between them. Janko opts for the subjunctive and fills

¹⁵ Compare this passage as well to the Theophrastian criticism of Empedocles on the nourishment of plants, *De Causis Plantarum* I.12.5

¹⁶ This passage, also noted by Rashed (2011) is immediately followed by a simile which is almost certainly connected to Empedocles' fragment B 82.

the 14-15 letter gap with a participle, using the last three partial letters εἰς to restore ὀππό[τε δὴ γ' αἰθηρ μιχθ]εἰς. Although he is followed by others in this, I would rule this option out on general grounds of context: if we are dealing with fire's ascent to heaven from the earth, then the more obvious prepositional phrase εἰς τόπον ἐσχάτι[ον] should stand until proven non-viable. To go back now to the choice between βῆν and βῆι, the infinitive, used to indicate finality, could produce an intelligible phrase, εἰς τόπον ἐσχάτιον βῆν, 'to go to the furthest place' which would be dependent on either a verb of motion in the middle lacuna, whether in the indicative or a participle. So, if the second hand is right, one could supplement ὀππό[τε πῦρ ἔτ' ἔνερθ' ὦρτ'] εἰς τόπον ἐσχάτι[ον β]ῆν or ὀππό[τ' ἔνερθεν πῦρ ὦρτ'] εἰς τόπον ἐσχάτι[ον β]ῆν.¹⁷ Alternatively, if we go with the first hand's β]ῆι, we can explain the aorist subjunctive as either final or stating a more general indefinite condition. So, if final, one attractive possibility, based on Homeric parallels, is ὀππό[τε γὰρ πῦρ ὄρνυθ' ἴν'] εἰς τόπον ἐσχάτι[ον β]ῆι, which I offer in my text.¹⁸ But other constructions are also possible, so perhaps e.g. : ὀππό[τ' ὄρουσεν πῦρ ὄφρ'] εἰς τόπον ἐσχάτι[ον β]ῆι or ὀππό[τ' ε γὰρ πῦρ ὦρτ' ὄφρ'] εἰς τόπον ἐσχάτι[ον β]ῆι. The second also makes the statement an explanation. What would otherwise be the most obvious reconstruction, based on B 30, where Strife 'rises' to his prerogatives, would give ὀππό[τε πῦρ ἀνόρουσε καὶ] εἰς τόπον ἐσχάτι[ον β]ῆι, but requires that we emend the aorist subjunctive to the indicative, which seems rather strong.¹⁹ Lastly, it could be that the missing verb states a more general and

¹⁷ Or, combining B 30 and B 62.6, and keeping the mid-line caesura in mind, one could reconstruct ὀππό[τ' ὄρουσεν πῦρ θέλον] εἰς τόπον ἐσχάτι[ον β]ῆν, but this is slightly too long for the available space. For my general reasons for preferring the second hand's corrections, see Trépanier (2017b). In this instance I leave it open. The ending is between two dots, which may indicate some hesitation.

¹⁸ Based on *Iliad* 11.1-2 (= 19.2) Ἠώς δ' ἐκ λεχέων παρ' ἀγαυοῦ Τιθωνοῖο/ ὄρνυθ', ἴν' ἀθανάτοισι φῶς φέροι ἠδὲ βροτοῖσι. In section **d**, note the stress on dawn Ἠώς in the extant previous line. The relative rarity of attested optative forms for βαίνω would justify the final subjunctive.

¹⁹ But adopted by Rashed (2011) and Primavesi (2011). For a subjunctive βῆι at line end, compare καταβαίνω, in B 9.1 as in ed. Primavesi (2011; = his n. 54) οἱ δ' ὅτε μὲν κατὰ φῶτα μιγὲν φῶς αἰθέρι<ον βῆι> from Plutarch, *Adv. Col.* 1113AB.

indefinite statement in the subjunctive, with ὁππότ[ε meaning ‘whenever’, so we could have e.g. ὁππό[τ’ ὀρόυση φλόξ καὶ] εἰς τόπον ἐσχάτι[ον β]ῆι. ‘whenever fire springs up and sets out for the furthest place.’ But even if there are too many possibilities to chose from, the meaning does not seem much in doubt.

For I.346 we also face an abundance of possibilities. A number of these I have listed in the apparatus, with relevant parallels, but for now I offer as one possible reconstruction δὴ τό[τ’ ἀνήϊξεν πυρὰ πολλ’ αὐ]γῆι καὶ αὐτῆι or, with a slight variation, δὴ τό[τ’ ἀνήϊξεν πυρὰ γῆς αὐ]γῆι καὶ αὐτῆι. If we put the two together, then largely *exempli gratia*, and without insisting on all details, this gives:

- f1/d15/I.345** ὁππό[τε γὰρ πῦρ ὄρνυθ’ ἴν’] εἰς τόπον ἐσχάτι[ον β]ῆι,
 δὴ τό[τ’ ἀνήϊξεν πυρὰ πολλ’ αὐ]γῆι καὶ αὐτῆι
 θεσπε[σίηι· ὄμβρου δὲ ὅσ’ ἀν λει]μῶνα λαχόντα
- d 18/I.348** χόρ[τος δένδρα τε γέντο,

I.345 For when fire rose to set out for the furthest place,
 then many fires shot up from the earth with a terrible flash
 and roar. But all that upon the plain obtained a share of rain
 became grass and trees.

Lastly, this only leaves the gap at **d 14/I. 344**, where I offer

- [μυρία δὴ τότε φύλ]α φυτάλμια τεκνώθ[η]σαν
d 14/I. 344 [οὐλοφυῶν, τῶν ν]ῦν ἔτι λείψανα δέρεται Ἡώς.

The suggestion οὐλοφυῆ was first made by Rashed (2011: 42-4), who however rejected it on grounds of space (once we combine it with τῶν ν]ῦν the result is too short by one letter space). Instead, Rashed offers οὐλομελῆ as an equivalent term. I prefer to keep οὐλοφυῆ but fill the missing letter by using the genitive plural,

construed with φύλα φυτάλμια in the previous line, cf. B 35.7 ἔθνεα μυρία θνητῶν.²⁰

The epithet φυτάλμια, if now taken as a reference to the race of plants, would include the sense ‘generative’ (they are the first and eldest plants), but can also include the sense ‘nurturing’ or ‘nutritive’, which would resonate against Empedocles’ general Pythagorean abhorrence of meat-eating, and even more pointedly, against the specific reference to his own carnivorous behavior in the lines immediately above. The same might be said for the vegetal connotations of the term, φύλα, which brings to mind φύλλον, leaf or plant. As for ούλοφυῆ, its point would be to mark plants out as asexual beings, as opposed to sexually divided animals and ‘the double race of men and women’ mentioned earlier at a (ii) 27/ I.297. Beyond that, however, an identity with ‘partless’ primordial creatures does not seem necessary.²¹

4. Sections d and f and the Link to Section b

The second half of section f, lines 5-8 is the opening of an epic simile, one which attracted a scribal note, the visible *paragraphos* after f 4 by the first hand. Most likely

²⁰ For other reasons, I am not inclined to accept ούλομελῆ as a valid synonym for ούλοφυῆ. First, ούλομελῆ is not attested in the Empedoclean corpus. Second, where it does occur, the term is used by Parmenides to describe Being (B 8.4). Starting from that, Rashed suggests a more specific doctrinal interpretation of the passage, which describes the ‘splitting’ or cutting apart of primaeva ‘whole-limbed’ ‘single-limbed’ creatures. His grounds for this are the parallel with Aristophanes’ myth in Plato’s *Symposium* 190d-191, where Aristophanes describes the splitting of original a-sexual whole beings. Although I fully endorse the parallel, I think that ούλομελῆ is stronger than needed, for it suggests creatures more fully unified than plants, more along the lines of the divine *Sphairos* or the *holy phren* of B 134.

²¹ Aristotle discusses Empedocles’ belief in the asexual reproduction of plants in a number of places, see *De generatione animalium* 731a, and especially [*On Plants*] 817a and 817b14 ff., the source of B 79. But if Empedoclean plants are asexual, they certainly still have parts, which separate and come together via asexual pangenetic reproduction, that is, through all of the separate parts contributing to the seed. Notably, Aristotle at *Physics* 199b 9-13 complains that Empedocles gave no account in the creation under rising Love of hybrid plant-monsters like the men-bulls in B 60, but that he should have. Thus Aristotle understood Empedoclean plants to have parts, and therefore reproduction through separation and recombination of such parts. Unfortunately, the edition of the key relevant testimony (A 72) is itself problematic, since Diels (*Doxographi Graeci* p. 430), following Karsten (1838) has introduced the term ὀλοφυῆ into the testimony, over the received text, Aëtius V 19, 5: ‘Ε. τὰς πρώτας γενέσεις τῶν ζώων καὶ φυτῶν μηδαμῶς ὀλοκλήρους γενέσθαι, ἀσυμφυέσι δὲ τοῖς μορίοις διεzeugμέναις, τὰς δὲ δευτέρας συμφυομένων τῶν μερῶν εἰδωλοφανεῖς, τὰς δὲ τρίτας τῶν ὀλοφυῶν (MS ἀλληλοφυῶν), τὰς δὲ τετάρτας οὐκέτι ἐκ τῶν ὁμοίων κτλ. But this is not the place to try sorting this all out.

the simile was a small-scale Empedoclean technology-simile, in which some biological structure or process is likened to an artefact. In B 100 the lungs are likened to a small water carrier, in B 84 the eye to a storm-lantern. Thus, following Janko, the word χαλ[κεύς, ‘smith’ seems the best guess for I.350, which is doubly appropriate given the theme of fire as agent of transformation (I.341). And if so, then the most likely supplement for the nominative feminine plural at I.351 is flames, αἱ δὲ [φλόγες.

What then of the connection to section **b**? The last securely legible part of **d** 18 reads περί χθών, preceded by]υτο according to the first hand, corrected above the line to]υτε by the second hand. The noun ‘earth’ in the nominative preceded by the preposition περί shows that the preposition is not construed with the noun, but a missing verb. I return to the verb below but, before that, this bare mention of earth offers us a first connection to section **b**. The lines of section **b**, which we can supplement thanks to a partial overlap with fragment B 76, are an Empedoclean mini-catalogue of animal species with hard parts on the outside, intended to illustrate a situation ‘where you will see earth residing atop of flesh’ (I.356/B 76.3). Here as well, I suggest, assuming that the topic under discussion is plants provides a closer thematic link than animals or living things in general. Specifically, we can understand the notion of ‘earth on the outside’ as a reference to earth as the outer bark of trees or the outer sheath on grasses and plants. The catalogue would thus be intended to support the simile, in which Empedocles compared fire’s work, in this case ‘fixing’ bark around trees, to that of a smith.

Once more, the link can be no more than a suggestion, but it **is** can be strengthened through some good parallels. The first, most proximate parallel comes from Plutarch, the source of B 83, which paraphrases a similar but not identical

Empedoclean catalogue of animals with protective outer layers or at least either hard or dry parts on the outside, *De Fortuna* 98d:

Certainly, in so far as chance and nature's endowment at birth are concerned, the great majority of brute animals are better off than man. For some are armed with horns, or teeth, or stings, and Empedocles says,

αὐτὰρ ἐχίνοις
ὄξυβελεῖς χαῖται νώτοις ἐπιπεφρίκασι

But as for hedgehogs,
upon their backs sharp darts of spines stand bristling,

and still others are shod and clad with scales or fur, with claws or cloven hoofs (φολίσαι καὶ λάχλαις καὶ χηλαῖς καὶ ὄπλαῖς ἀποκρότοις).²²

The passage is close enough to be usefully exploited in reconstructing the rest of section **b**, which I have done in my text.²³ The other examples Plutarch lists following the quotation of B 83 match terms from other known passages, here especially claws, χηλαῖς, found above at I.336/d 5. More broadly, the parallel shows the plausibility of connecting the catalogue found in section **b** as supporting evidence for the account of the origin of plants given in section **d/f**. By listing animals with earthy or hard outsides, animals that will have been familiar to his audience, Empedocles makes his account of fire fixing earth/bark upon trees easier to visualize.

²² Empedocles' use of metaphor to instructive effects rather than as mere ornament is well recognized, as attested by Plutarch, *Quaest. conviv.* v 8, 2 p. 683e: "especially since he was not in the habit of tricking out facts for the sake of elegant writing by using grandiose epithets, as if he were laying on gaudy colours, but in every case aimed at simple description of an essential fact or property. For instance, he applies the expression 'earth that envelops a mortal' to the body that clothes us, and 'cloud-gatherer' to the air, and 'rich in blood' to the liver." Transl. by P.A. Clement and H.B. Hoffleit (Loeb). For some further musings on the structure of plants, Plutarch *Table Talk* 5, problem 8 (684 a; the speaker is Plutarch's father): "So," he went on, "consider whether Empedocles did not employ the term rather with this intention: whereas other fruits are encased by a *phloios* ('husk') on the outside (that is, they have what is called a rind, pod, capsule, or shell on the surface), apples have their *phloios* inside as a shiny, glutinous coat to which the seed is attached, so that the edible part surrounding all this on the outside is with good reason called *hyperphloion* ('outside the rind')." Loeb transl. by P.A. Clement and H.B. Hoffleit.

²³ The overlap of section **b** with B 76, known from two passages of Plutarch (*Quaest. conv.* 618 b for 1-3 and *De facie* 927f for lines 2-3), but with a different line ordering, shows that the two are not the same passage. Such repetition with variation is common in Empedocles and there is no need to force them both into a single text. The same may apply to B 139 and section d 4-5 above. Otherwise, the small catalogue at **a (ii)** 25/ I.295-28/298 provides some obvious suggestions for filling out the lines.

More remotely, but still pertinently, we can compare this specific process to the cosmogony of Empedocles' sixth century predecessor Anaximander, where an explicit comparison is made between the formation of the sky by means of a sphere of fire which grows around the upper air 'like bark on a tree:'

He says the earth is cylindrical in shape, and has a depth of one third its width. He says that part of the everlasting which is generative of hot and cold separated off at the coming to be of the world-order and from this a sort of sphere of flame grew around air about the earth like bark around a tree (καί τινα ἐκ τούτου φλογὸς σφαῖραν περιφυῆναι τῶι περὶ τὴν γῆν ἀέρι ὡς τῶι δένδρῳι φλοιόν).

DK A 10 /Graham (2010) F 4.

This comparison is likely to have been known to Empedocles. In Anaximander, the comparison proceeds from the known, natural microcosm to illustrate the formation of the equally natural macrocosm. Empedocles' own account of the formation of the glassy shell of the heavens in A 30, quoted above, is similar enough to have been influenced by it, although following his usual manner it is based instead on a technological simile, glass making. In our passage, as noted above, line I.350's χαλ[κεύς suggest that Empedocles deployed a metallurgical analogy. Janko suggests inlaying, although perhaps gilding is closer, to illustrate the process whereby trees were covered in dry 'earthy' bark. The original could have looked like this:

αἱ δὲ [φλόγες τῶς δὴ τότε ἔπηξαν γῆν περὶ δένδρα (?)]

f 8/I.352 τη[λεθάοντα

The simile thus offers a credible means of relating the two extant mentions of earth at **d** 18 and **b** 3, which are also notable for their choice of the same term, χθών, instead of possible variants such as γῆ or αἶα. For the verb in line I.348, I therefore supplement πέπηγεν δ' α]ῦτε πέρι χθών, siding with the second hand over Janko's

supplement ὅπῃ εἴληντο περί χθών , and following some criticisms of it by Rashed (2011: 38).

As a third and final parallel, we can note the similarity of this process with the set of fragments B 71, 73 and 75 that Simplicius quotes in his commentary to the *De Caelo*, and who there states that they stood within close range to one another.²⁴ The two latter fragments describe the agency of Love manufacturing limbs or body parts at the earliest stage of her zoogony, but B 75 shows that in this case Love's work resulted in a reverse organization of the elements, one where the hard parts, the bones, found themselves in the middle of the body. Here is B 73, which uses imagery from baking or the firing clay to describe Love's fashioning of what I infer are bones:

ὥς δὲ τότε χθόνα Κύπρις, ἐπεὶ τ' ἐδίηεν ἐν ὄμβρῳι,
εἶδεα ποιπνύουσα θοῶι πυρὶ δῶκε κρατῦναι

In the same way did Kypris then, when she had moistened earth in rain,
having fashioned it into shapes, gave them over to swift fire to harden.

The ὥς δὲ τότε phrase in particular is identical to B 84.7, which introduces the depiction of Love' fashioning of the eye in terms of the previously described storm lantern. From this context we can garner that B 75 is obviously a gesture towards a lost catalogue of animals with the 'hard parts' on the inside:

τῶν δ' ὅσ' ἔσω μὲν πυκνά, τὰ δ' ἔκτοθι μανὰ πέπηγε,
Κύπριδος ἐν παλάμησι πλάδης τοιῆσδε τυχόντα...

As many as are hard-set on the inside, but soft on the outside,
obtaining such a shape by the devices of Kypris...

Since Simplicius tells us that B 73 and 75 stood in the same vicinity, this in turn

²⁴ Along with B 86, B 87, B 95; see Inwood CTXT 45b for the complete sequence.

makes the pair a suitable parallel for our text, allowing us to posit a similar link between sections **d** and **b** via a metallurgical simile. The fact that the situation in B 73 is a symmetrical inversion of section **d-f-b** raises the suspicion that Empedocles intended his audience to notice these complimentary structures. Indeed, one significant asymmetry between the two processes is that in B 73 Love herself as ‘craftsman’ oversees the transformation, while fire is downgraded to her instrument, whereas in sections **d/f/b** fire alone effects the transformation. Such considerations raise issues of causation and design in Empedocles that are beyond the scope of this paper.²⁵ Overall, however, the passages are so close that B 75.1 suggests that a similar line, *mutatis mutandis*, may have stood after the last extant line of section **b**:

b 6/I.360 [ἀλλ(ὰ) οὐκ ἄν τελέσαιμι]ι λέγων σύμ[παντα γένεθλα]
 I.361 [τῶν δ' ὅσ' ἔσω μὲν μανὰ, τὰ δ' ἔκτοθι πυκνά πέπηγε (?)²⁶

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²⁵ The contrast squares with Aristotle’s complaint in *Metaphysics* I.4 (985b) that in practice fire is not just one of the four elements, but that it alone is usually opposed to the other three. Aristotle adds that this emerges from study of Empedocles: ἔτι δὲ τὰ ὡς ἐν ὕλης εἶδει λεγόμενα στοιχεῖα τέτταρα πρῶτος εἶπεν (οὐ μὴν χρῆται γε τέτταρσιν ἀλλ’ ὡς δυσὶν οὖσι (985b) μόνοις, πυρὶ μὲν καθ’ αὐτὸ τοῖς δ’ ἀντικειμένοις ὡς μιᾷ φύσει, γῆ τε καὶ ἀέρι καὶ ὕδατι· λάβοι δ’ ἄν τις αὐτὸ θεωρῶν ἐκ τῶν ἐπιπῶν).

²⁶ Against this, Janko (2004) places section **e**, a column-top, at the top of column 13.

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