

THE MANUSCRIPT TRADITION OF SENECA'S *NATURAL QUESTIONS**

A. THE PROBLEM

Since A. Gercke's fundamental work,¹ there has been no complete reappraisal of the manuscript tradition of the *Natural Questions*, yet a reappraisal is long overdue. Gercke divided the manuscripts into two branches, Δ and Φ, but this division has been seriously undermined from two quarters. First, H. W. Garrod² questioned the status which Gercke assigned to Δ, arguing, quite rightly, that in every case where Δ has the truth against Φ, Δ's reading can reasonably be attributed to conjecture, which is known to be rife in Δ. Certainly nothing is proved about Δ's integrity by the passages which Gercke adduced, such as the following (Δ's reading first):³

I. 1. 15 *coire*] *ire*; 5.7 *reliqua*] *aliqua*; 13.3 *autem* (post *pluuuuarum*)] *enim*; 14.4 *trans-ilit*] *transtulit*; IVb. 13. 1 *multo magis*] *multo*; 13.3 *stiparemus*] *isti paremus*; VII. 30. 6 *nos* (post *initiatos*)] *non*.

Garrod pointed out that one can offer more impressive-looking evidence of Δ's integrity, notably four places where a phrase in Δ is omitted by all the other manuscripts:

II. 12. 1 *ista iaculatio cum ictu* (post *ictu*); 12. 5 *nec exilire* (post *nec rumpi*); 18 *ictus inaequalis est*; 33 *quemadmodum exoremus* (ante *quemadmodum interpretemur*).

But in each case, as Garrod argued, the lacuna in the other manuscripts could have been filled conjecturally by Δ.⁴ Even if, for the sake of argument, we assume that Δ's reading is correct and genuine at II. 12. 1, 12. 5, and 33, the omissions of the other manuscripts are not valid conjunctive errors, since they may be caused by parablepsy, which can occur by chance coincidence in unrelated manuscripts. As for II. 18, the other manuscripts read: *Anaximandros omnia ad spiritum rettulit: 'Tonitrua' inquit 'sunt nubis ictae sonus.' quare inaequalia sunt? quia et ipse*. The last three words cry out for a supplement,

* This article is a sequel to two earlier articles, 'Escorial MS. O III 2 and related manuscripts of Seneca's *Natural Questions*', CQ N.S. 28 (1978), 296-311; 'The manuscript tradition of Seneca's *Natural Questions*; some manuscripts related to Z (Geneva lat. 77)', *Prometheus* 5 (1979), 63-72. The present article, too, is based, with modifications, on my thesis, 'An Edition with Commentary of Seneca *Natural Questions* Book Two' (Oxford D.Phil. Thesis, 1976, unpublished). Again I am grateful to Dr. R. W. Hunt, Prof. A. A. Long, Mr. L. D. Reynolds, Mr. D. A. Russell, and Dr. M. Winterbottom, for their help; to the numerous librarians who have allowed me to consult their manuscripts and have supplied microfilm and xeroxes of them; and to the staff of the Institut de Recherche et d'Histoire des

Textes in Paris, for allowing me to use their card indexes and their microfilm library.

¹ A. Gercke, *Seneca-Studien, Jabrb. f. class. Phil.*, Suppl. 22.1 (Leipzig, 1895; repr. Hildesheim, 1971); *Studia Annaeana* (Greifswald, 1900); *L. Annaei Senecae Naturalium Quaestionum Libri VIII. Edidit Alfred Gercke* (Bibliotheca Teubneriana, Leipzig, 1907; repr. Stuttgart, 1970).

² CQ 8 (1914), 273-4.

³ On conjecture in Δ or δ see CQ N.S. 28 (1978), 299-302. Several of the readings Gercke adduced are in fact not unique to Δ anyway, but we may let that pass.

⁴ Garrod argued against δ's text at II. 12.1, but his objections can be countered; he accepted δ's text in the other three places, but in each case δ is suspect. See the commentary on each passage in my thesis.

which Δ could have provided. It has *quia et ipse ictus inaequalis est*, which is unlikely to be right, because it is uninformative, failing to say how or why the *ictus* varies. In the remainder of the chapter several explanations are given in terms of the action of *spiritus* or *aer*, so Diels proposed: *quia et ipse spiritus inaequalis est*.⁵ But once Δ 's reading is recognized to be conjecture, we can read simply: *quia et ipse spiritus*. So there is no help for Δ from here. Garrod over-shot the mark by concluding that Δ can be ignored entirely, but at least he showed that the Δ/Φ stemma needs careful scrutiny. Yet his remarks have been virtually ignored.

The second attack on Gercke's stemma came from P. Oltramare's demonstration of the independence and value of Z (Geneva lat. 77).⁶ Oltramare could have presented the case for Z more effectively, for he overlooks some of the most telling evidence of Z's authority, adduces too many dubious or inconclusive readings, and exaggerates the amount of conjecture in Z,⁷ but nevertheless he showed that in many places Z has the truth where Δ and Φ are in error. Yet his stemma puts ΦZ on one side, Δ on the other. More recently,⁸ D. Vottero has tentatively suggested that Z represents a third, independent branch of the tradition, alongside Δ and Φ .⁹ But in fact, as we shall see below, $\Delta\Phi$ share conjunctive errors which show they form a single branch.

Besides being wrong about the Δ/Φ division, Gercke made other mistakes, failing to notice that manuscripts were composite or contaminated, or assigning them to the wrong class,¹⁰ and he had seen less than half of the manuscripts known to me. Yet one should keep his failings in perspective: it is, after all, over seventy years since he completed his work on the *Natural Questions*, and one is still greatly indebted to him for much that is sound in his work.

The following is an attempt to examine the whole tradition afresh. In the interests of clarity, I begin by examining the relationships between the ten

⁵ H. Diels and W. Kranz, *Die Fragmente der Vorsokratiker*⁶ (Zurich-Berlin, 1952), i.87, line 29. Compare the phrases *spiritus infirmior* and *acrioris deniorisque spiritus* later in the chapter. (Mr. Colin Hardie first pointed out to me that Δ 's reading begs the question.)

⁶ P. Oltramare, 'Le codex Genevensis des Questions Naturelles de Sénèque', *RPhil* 45 (1921), 5-44, and his edition, *Sénèque, Questions Naturelles* (Budé edn., Paris, 1929; repr. 1961). Earlier judgements on Z were based on inadequate knowledge of its readings: Gercke, *Studia Annaeana*, pp. 21-7 (where Z is called R); edn., pp. xxvii-xxviii; Garrod, op. cit., p. 275; H. Geist, *De L. Annaei Senecae Naturalium quaestionum codicibus* (Diss. Erlangen, publ. Bamberg, 1914), pp. 18-21.

⁷ Hence, perhaps, his failure to convince so exacting a critic as Axelson, who at one time said that he intended to examine Z afresh at some future date, and for the time being was leaving the question of Z's status open (B. Axelson, *Senecastudien, Kritische Bemerkungen zu Senecas Naturales Quaestiones*, *Lunds Universitets Årsskrift*, N.F.,

Avd. 1, Bd. 29, Nr. 3 (Lund, 1933), pp. 3-4). Later he abandoned his intention (id., *Neue Senecastudien, Textkritische Beiträge zu Senecas Epistulae morales*, *Lunds Universitets Årsskrift*, N.F., Avd. 1, Bd. 36 (Lund, 1939), p. 235 n. 24).

⁸ L. Castiglioni, 'De Naturalium quaestionum codice Veneto Marc. XII 141 (cod. lat. 1548)', *Miscellanea Giovanni Galbiati i, Fontes Ambrosiani* 25 (Milan, 1951), pp. 183 ff., noted that Z often shares readings with UW (for the sigla, see below), which he thought might indicate a common ancestor, or else contamination from a manuscript like Z in UW. But all the pertinent readings of ZUW are correct, or at least possibly correct, so he ought to have entertained the possibility that Z and UW derive them independently from the archetype.

⁹ D. Vottero, 'Problemi di critica del testo nelle "Naturales Quaestiones"'. *Nota I. L'ordinamento dei libri*, *AAT* 107 (1973), 249-69; his comments on Z are on pp. 264-7.

¹⁰ Cf. *CQ* N.S. 28 (1978), 310; below, *passim*.

manuscripts which I think should be used to reconstruct the archetype; then I show how the remaining manuscripts are related to those ten.

B. THE TEN PRINCIPAL MANUSCRIPTS

First of all the ten principal manuscripts will be listed and briefly described, in alphabetical order of sigla:

A Leiden, Bibliotheek der Rijksuniversiteit, Vossianus latinus 0.55, parchment, s. XII¹, 190 × 130 mm, ii + 51 + i fos., 35 lines to the page in single columns. The *Natural Questions* are on fos. 1–51; the books are in the traditional order, with a lacuna from III. 25. 6 *efferrantur* to the end of Book IVa (inclusive). There are corrections and variants in the original hand (A^c). On the basis of a decorated initial on fo. 33^v, Dr. J. J. G. Alexander thinks that A may have been written in the Low Countries.¹¹ This manuscript was perhaps known to Opsopoeus (see n. 78 below), and was collated by Gercke and Oltramare; their reports of this as of other manuscripts are incomplete.

*B¹² Bamberg, Staatsbibliothek, IV. 16, parchment, s. XII, 295 × 170 mm, 69 fos., 38 lines to the page in single columns. The *Natural Questions* are on fos. 9–45; the books are in the traditional order, with the same lacuna as in A. The manuscript is of German provenance, and belonged to the cathedral library at Bamberg.

A few of B's readings were reported by L. von Jan, and there is a fairly full collation in Fickert;¹³ the manuscript was recollated by G. Müller and by Oltramare.

E. Chatelain, *Paléographie des classiques latins*, ii (Paris, 1894–1900), pl. 168, gives a photograph of fo. 9 of B.

F Oxford, Merton College, 250, parchment, s. XII, 230 × 160 mm, 246 fos., 25 to 30 lines to the page in single columns. The *Natural Questions* are on fos. 156–246^v, with the book order I–III, IVb–VII, IVa; the end of Book IVa, from 2. 19 *reliquias eius* onwards, is omitted. In the early books there are many corrections in a second hand, taken from a δ source. John Renham bequeathed the manuscript of the *Natural Questions* (now bound with another manuscript) to Merton in the late 14th cent. (see F. M. Powicke, *The Medieval Books of Merton College* (Oxford, 1931), pp. 132–3).

F was partly collated by Gercke. (Note that in his *Seneca-Studien* F is called N.)

H Paris, Bibliothèque Nationale, lat. 8624, parchment, ii + 73 + i fos.; this is a collection of miscellaneous Seneca texts, with the *Natural Questions* on fos. 25–58, s. XII², 250 × 160 mm, 44 lines to the page in single columns; *Grandinem* book order (i.e. IVb–VII, I–IVa) with the end of Book IVa, from IVa. 2. 19 *temporibus imbres* onwards, omitted. H was in Colbert's collection in the seventeenth century. No indication of provenance.

¹¹ I am grateful to him for giving me this opinion, by letter.

¹² When an asterisk is prefixed to the first mention of a manuscript, it indicates that I have not seen the manuscript or microfilm or photographs of it, and am reliant on information published by

others.

¹³ L. von Jan, 'Neueste Literatur des Seneca', *NJPhP* 31 (1841), 261–72; L. *Annaei Senecae opera . . . recensuit . . . Carolus Rudolphus Fickert* (3 vols., Leipzig, 1842–5).

Collated by Gercke (IVa. 1-2 by Rossbach), and by Oltramare. (At one time H was called Q.)

- P Paris, Bibliothèque Nationale, lat. 6628, parchment, s. XII, 200 × 135 mm, iii + 114 fos., 31 lines to the page in single columns. The *Natural Questions* are on fos. 1-79^v; *Grandinem* book order. There are some corrections, perhaps by the original hand, but more likely by a second contemporary hand, or else by both. The manuscript is French, and belonged to the Abbey of St. Victor at Paris (see n. 54 below).

Collated by Rossbach, Gercke, and Oltramare.

- R El Escorial, O III 2, parchment, s. XIII, 245 × 160 mm, 198 fos., 36 or 37 lines to the page in double columns. The *Natural Questions* are on fos. 6 col. 1-72 col. 2; *Grandinem* book order. The script indicates French provenance, and a Minnelied on fo. 198^v suggests that the manuscript was in Germany at an early date.

- U Munich, Staatsbibliothek, 11049, s. XV, 280 × 205 mm, i + 79 (numbered 258-326) + i fos., 41 to 44 lines to the page in double columns. The *Natural Questions* are on fos. 258-318 and there follows an alphabetical index to the contents (fos. 318^v-325, single columns). *Grandinem* book order. The script indicates Germanic provenance.

Parts collated by Gercke; all collated by Geist, but only sporadically reported.

- V Vatican, Palatinus lat. 1579, parchment, 210 × 145 mm, iii + 64 + iii fos.; it consists of two separate manuscripts, the first s. IX, from Lorsch, the second, containing the *Natural Questions*, s. XII². The *Natural Questions* are on fos. 17-60, 31 lines to the page in single columns; traditional book order, with the same lacuna as A above. The script indicates that V was probably written in France.

Collated by Oltramare.

- W Venice, Biblioteca Marciana, Lat. Z. 268 (1548), parchment, s. XIV, folio, 52 lines to the page in double columns, with the *Natural Questions* on fos. 212^v col. 2-245 col. 1. The books are in the traditional order, except that Books II and III are transposed (giving the order I, III, II, IV, V, VI, VII). There are copious corrections in a second hand, taken from a δ-ρ-δ source (see below, p. 204, and some corrections in further hands; quite often the original reading is totally obscured by the correction, or is uncertain. W was written in Italy, and belonged to Bessarion.

Collated in full, and copiously cited, by Castiglioni, op. cit. (who refers to the manuscript as Marc. or v).

- Z Geneva, Bibliothèque Publique et Universitaire, lat. 77, parchment, s. XII^m, 230 × 150 mm, 62 fos., 35 lines to the page in single columns. Contains only the *Natural Questions*, with *Grandinem* book order; the last folio is lost, so that the text breaks off at IVa. 2. 29 *alternatis*. Z was written in France.

Gercke collated most of Z, and reported some of its readings. Oltramare recollated it, though his reports are not complete.

There is a photograph of fo. 8^v in Chatelain, op. cit., pl. 170. (Note that in Gercke, *Studia Annaeana*, Z is called R.)

I have collated FW themselves, and microfilm of AHPRUVZ. For B I use the fairly complete collation of Fickert, together with the reports of Gercke and Oltramare.

The relationships between these ten manuscripts will now be analysed.

1. All ten manuscripts derive from a common archetype (Ω)

All the manuscripts lack the beginning of Book IVb, which suffices to show that they derive from a common archetype. There are plenty of other errors shared by all of them, e.g.:

- I. pr. 11 *regna disponitis* Fortunatus] *regnatis ponitis*; II. 11. 1 *ima* Muretus] *iam*; III. 18. 1 *squamaeque* Leo, F. Skutsch] *quam aequae*; V. 12. 3 *separatis* Erasmus] *-tus*; VII. 32. 3 *mollius* Maduig] *illius*.

2. None of the ten manuscripts derives from any other

Besides the fact that each manuscript is independent of any other which is of later date, or which has a less complete text, each has unique separative errors. To illustrate this here are a few omissions and errors of word order from each:

- A: (a) OMISSIONS. II. 21. 2 *tamen*; 34. 2 *enim* (ante *nunc auem*); 45. 3 *hic est ex quo nata sunt omnia, cuius spiritu uiuimus*; IVb. 11. 5 *quidem*; V. 18. 5 *non* (post *non ideo*). (b) TRANSPOSITIONS. II. 1. 3 *sit aer*; 1. 4 *loco suo*; 4. 2 *id tamen*; 24. 3 *cuiusque leuissimi*; 26. 7 *ignium causas*.
- B: (a) OMISSIONS. I. 16. 4–9 *ille quasi . . . immolandus fuit*; I. 17. 2–10 *in nulla re . . . factum est*. (b) TRANSPOSITIONS. Ch. 18 of Book III is transposed to the end of Book IVb.
- F: (a) OMISSIONS. III. 14. 2¹⁴ *qua ardet . . . marem uocant*; VII. 5. 5 *habentis differentiam . . . enim flammam*. (b) TRANSPOSITIONS. II. 21. 3 *esse ignem*; 22. 2 *quantis uideamus*; 26. 5 *montis usti*; 31. 1 *durat ille rigor*; 38. 2 *adfatum protinus*.
- H: (a) OMISSIONS. I. 2. 3 *ab his*; II. 12. 3 *solis*; V. 10. 3 *magno*; VI. 16. 1 *atque* (post *baustu*); 32. 12 *mors* (post *lex est*); VII. 25. 3 *-que* (post *fines*); 32. 2. *et* (post *Academicici*). (b) TRANSPOSITIONS. VI. 13. 5 *esset hoc*. (This is the only transposition unique to H, a carefully copied manuscript.)
- P: (a) OMISSIONS. II. 1. 1 *mundus*; 1. 2 *tonitrua; iuris*; 2. 4 *cum*; 5. 1 *et* (post *terra*); 6. 3 *tibi inflata*. (b) TRANSPOSITIONS. II. 1. 1 *flectat solem retro*; 21. 2 *fulmen fuit causa*; 26. 5 *illud saxum*; 59. 11 *minas caeli*.
- R: (a) OMISSIONS. II. 39. 1 *fulminis ictu aut dissuadetur*; 47 *auerti tollique non possunt*; 59. 9 *si fulmen; maximum ex*; (b) TRANSPOSITIONS. II. 6. 6 *arbores erigit*; 10. 3 *sentiant siderum*; 40. 4 *est ustum* (post *at quod*); 54. 1 *alimentum fulminibus*.
- U: (a) OMISSIONS. II. 2. 3 *uidemus tractamusque . . . illa constant*; 6. 5 *et contra quam nihil ualidum*; 12. 2 *aut igneas esse*; 33 *rogare ut promissa firment deprecari*. (b) TRANSPOSITIONS. II. 39. 4 *proprietaem suam*; 59. 10 *superuacuu spiras (exspiras Fortunatus)*.
- V: (a) OMISSIONS. II. 6. 1 *-que* (post *tumultus*); 21. 3 *enim*; 30. 1 *multo*; 41. 2 *in* (post *adhibitis*); 59. 1 *fulmina*. (b) TRANSPOSITIONS. II. 1. 3 *fiat spiritu*; 9. 1 *infunditur rebus*; 12. 5 *feriat nubes proximas*; 14. 2 *ex diuerso in diuersum*.
- W: (a) OMISSIONS. (Many of W¹'s omissions have been corrected, but the following examples are taken from those which have not.) II. 1. 2 *et* (post *quaerit*); 1. 4 *huiusmodi*; 18 *in sonum ualuit*; 37. 2 *dis* (post *admota*). (b) TRANSPOSITIONS. II. 1. 4 *sequeuntur terram*; 6. 6 *noster animus*; 10. 1 *per se frigidus*; 12. 1 *tonitrua fulmina*.
- Z: (a) OMISSIONS. I. 15. 1 *ardor*; 15. 8 *fin. corporum*; II. 4. 2 *ex*; 16 *ipso*; 28. 1 *sed* (ante *palma*). (b) TRANSPOSITIONS. II. 37. 2 *addis motae (admota* W: *admota* disrell.); III. 18. 3 *ipse credere*; IVb. 3. 4 *saxa tamen molli dura*.

In each case only a small sample of separative errors has been given, but this suffices to show that none of the manuscripts is directly descended from any other, on the assumption that there is no contamination, an assumption which will be examined in due course.

¹⁴ Haase, followed by Gercke, needlessly transposed this section of the text to form III.12.2.

3. *Between I. 13. 2 and II. 53. 2 R and Z derive from a common ancestor* (§)

For evidence of this and of R's independence of Z, and for analysis of R's composite text, see CQ N.S. 28 (1978), 296–306. Here, as there, R_{\S} will be used to denote this portion of R.

4. *A, B, and V derive from a common ancestor* (δ)

See CQ N.S. 28 (1978), 298–301.

5. *From I. pr. 1 to I. 13. 1, from II. 53. 2 to III. pr. 18, and from VII. 15. 2 to the end of Book VII, R and δ derive from a common ancestor* (α)

See CQ N.S. 28 (1978), 301–3. Here, as there, R_{α} will be used to denote this portion of R.

6. *FH derive from a common ancestor* (θ)

This was established by Gercke.¹⁵ FH share the following significant omissions:

I. pr. 4 *-que* (post *peritutum*); 1. 11 *tanta*; 6. 2 *magnitudinem*; II. 3. 2 *numero*; 4. 1 *tamen*; 32. 7 *quod* (post *quam*); 39. 4 *utriusque*; 41. 2 *et inuolutos*; 45. 3 *fulmina*; 53. 2 *natura*; III. pr. 6 *contra Romanos*; 20. 5 *harum*; 24. 2 *tenui*; 26. 6 *parte*; 30. 6 *pluribus locis*; IVb. 5. 2 *montes*; 7. 1 *sanguine*; 13. 9 *fecissent*; V. 1. 3 *quoque* (post *bac*); 18. 4 *dictatum est*; VI. 3. 2 *nobis* (post *quicquam*); 10. 2 *ueteribus*; 14. 2 *enim*; 30. 2 *cum pars naturae concita est deesse*; 32. 12 *tibi*; VII. 29. 3 *sunt* (post *haec*); 30. 4 *aditum*.

These suffice as conjunctive errors of FH and disjunctive errors of θ.

One may note the following places where F and the first reading of H share an error, and the second reading of H, apparently by the original scribe, is correct:

ERRORS OF FH¹: I. 3. 13 *duae*] *durae*; III. 18. 4 *uiuario*] *in uario*; 28. 2 *accersere* ZH^cR: *accendere* F: *accen* H¹: *accessere* P: *ac(c)erscere* UW; *humanum*] *hominum*; IVb. 4. 1 *ningat*] *mingat*; 4. 2 *inclinatio*] *indignatio*.

In some of these cases the error could have been θ's reading, and the second reading of H could be conjecture. But *humanum*, a variant, not a correction, in H, would be quite gratuitous. Probably, therefore, one should think in terms of variants in θ as the explanation, which would also account for divisions such as the following between F and H:

III. 25. 10 *exesa* ZF, H u(aria)(ectio): *aquosa* H¹ PRUW. IVa. 2. 7 *uisitur* ZF, H u.l.: *nascitur* H¹ PRUW.

(In both passages δ is missing.)

7. *From III. pr. 18 to VII. 15. 2 P and R derive from a common ancestor* (ρ)

See CQ N.S. 28 (1978), 297–8. Here, as there, R_{ρ} will be used to denote this portion of R.

8. *U and W derive from a common ancestor* (υ)¹⁶

U and W share the following errors not found in the other manuscripts; the

¹⁵ *Seneca-Studien*, pp. 55–71 (where θ is called μ); *Studia Annaeana*, pp. 8–12; edn., pp. xxix–xxx, xxxiv.

¹⁶ Castiglioni, loc. cit., discerned a connection between UW, even though he was

working with Gercke's and Geist's meagre reports of U. I shall generally ignore corrections by a later hand in W when the original reading is not in doubt.

more trivial errors are omitted, as are those from the part of Book IVa where FH are missing:

I. 5. 4 *ne*] *nec* R; *neque* UW; 6. 5 *aqua* (post *pilam*)] *-ae*; II. 12. 2 *e*] *ex*; III. 15. 1 *sanguinis*] *-guis*; 15. 4 *saepe*] *specie*; 18. 1 *quaestione*] *-em*; 24. 2 *sat*] *satis*; 25. 4 *Galatia*] *galicia* (galli- W); 25. 11 *Nilotica*] *molitita* U: *molitica* (uel *niol-*) W; 25. 12 *terreni*] *terrae*; 27. 1 *tanto*] *-tum*; 29. 8 *Quid ergo est*] *est* om. W: *ergo est* om. U; IVa. pr. 14 *ubi*] *nisi*; pr. 20 *sumus*] *simus*; 2. 1 *undas*] *unda*; 2. 12 *marinis*] *-as*; IVb. 11. 4 *excipiat*] *accipiat*; V. 1. 1 *definierunt*] *-iuerunt*; 1. 3 *fluens in unam partem aer*] *aer in unam partem fluens*; 12. 2 *cursu*] *-um*; 16. 4 *Liuius*] *huius*; 18. 5 *esset*] *esse*; VI. 4. 1 *tremat*] *tremescat*; 6. 3 *tota*] *cum* add. (ante *con-*); 8. 4 *aiebant*] *agebant*; 20. 2 *et primo*] *in primo* U: *et in primo* W¹; VII. 3. 2 *illarum*] *-orum*; 12. 1 *attingit*] *attingit*; 25. 2 *liqueere*] *reliquerunt* U: *relinquere* W¹.

These serve as conjunctive errors of UW, and separative errors of their common ancestor *v*.

9. $\rho(P)$ and *v* derive from a common ancestor (π)

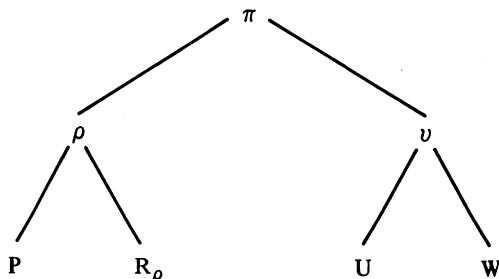
' $\rho(P)$ ' means 'the consensus of PR where R derives from ρ , and P alone elsewhere'. The following are conjunctive errors of $\rho(P)v$, also serving as separative errors of their common ancestor π :

(a) OMISSIONS. I. 1. 3 *est* (post *dissipata*); 4. 1 *redditur*; 5. 9 *id*; 17. 2 *illum*;¹⁷ II. 1. 5 *et*; 4. 2 *quia* (ante *quamuis*); 13. 2 *illud* (primum); 32. 6 *est*; 39. 3 *dissuadet*; III. pr. 13 *huius*; 11. 4 *-que* (post *ultra*); 16. 2 *se*; 21. 1 *est* (post *malum*); 26. 8 *uis*; 27. 1 *magna*; 27. 4 *ex*; 28. 6 *-que* (post *maximis*); IVb. 13. 4 *quod* (ante *tam homini*); VI. 20. 6 *aere*; 25. 1 *-que* (post *coepit*); VII. 11. 2 *et* (post *spargunt*); 13. 2 *est* (post *leuissimum*).

(b) TRANSPOSITIONS. II. 59. 13 *huic erit*; III. 16. 5 *usquam enim*; VII. 24. 2 *parte tamen*.

(c) OTHER ERRORS. I. pr. 11 *sordidum*] *sordium*; 3. 4 *uerum*] *uerbum uerum*; 8. 4 *concauo*] *cauo*; 15. 6 *babeant*] *-ent*; 17. 4 *ipse*] *iste*; II. 1. 1 *an* (post *agatur*)] *non*; 2. 4 *unita*] *inuita*; 5. 2 *oua*] *qua*; 10. 4 *opertos*] *-is*; 28. 2 *diducuntur*] *dicuntur*; 31. 2 *adnotanda*] *-dum*; 50. 1 *aut id*] *ut id*; 59. 13 *nisi quod*] *non quod* (*quod non* U); III. pr. 18 *ad hoc*] *an hoc*; 16. 4 *ingentesque*] *ingensque*; 26. 3 *defertur*] *re-*; 27. 11 *potest*] *potes*; 29. 6 *laxata*] *delax-*; IVa. pr. 11 *artem*] *partem*; 2. 7 *sacerdotes*] *-is*; V. 15. 1 *an*] *aut*; 17. 4 *modo*] *mibi*; VI. 6. 4 *a*] *ac a*; 18. 3 *indomita*] *domita*; VII. 1. 4 *adeo*] *at p*; *ac v*; 5. 1 *a*] *cum*; 6. 2 *pluuiiae*] *plane p*; *plene v*; 19. 1 *existere*] *exire*; 29. 3 *Claudianus*] *clad-*.

We may therefore deduce the following stemma:



¹⁷ The correct text, to be found in all editions before Gercke's, is: *sed primum omnium, quia inbecilli oculi ad sustinendum comminus solem ignoraturi erant formam*

eius, hebetato illum lumine ostendit. Gercke accepted the omission of *illum*, but against this see Axelson, *Senecastudien*, p. 31.

9.1 *The corrections in P*

It was noted above that P contains corrections, perhaps by the original hand, more likely by a second contemporary hand, or by both. Now that P's relationship to RUW is established these corrections may be examined. (Places where P is corrected have been ignored in §§ 7 and 9 above.) Often the first reading of P agrees with R_ρ, and thus may be assumed to derive from ρ. For example, the following words and phrases are omitted by R and by the first hand of P, but are added in the margin or between the lines by the corrector of P:

V. 3. 3 *ortu suo*; 5. 1 *-que* (post *uerior*); 10. 2 *et* (post *ponuntur*); 18. 12 *scio*; VI. 1. 4 *labant*.

It is unlikely that P's corrector was relying on conjecture in every case (cf. V. 3. 3), so either he had access to a purer form of ρ, or to a manuscript of a different group. There are slight hints that it may be a θ manuscript, for compare:

V. 8. 3 *unquam*] *usquam* θ, P² u.l.; 9. 1 *uer aquosum* Zπ: *aer aquosum* θ: *aer aquosus* P² u.l.: *aer uere aquosus* δ.

Occasionally P's original error seems to derive from π, because it is also found in Rv. For instance, at V. 15. 2 P¹ Rv omit *-que* after *lapidum* (R adds *et* before), and at VI. 1. 2 they omit *sine* (after *passim*).

Sometimes P's first reading is correct, or an error, and the second reading, whether variant or correction, is also found in R. For example:

VI. 26. 1 *arescente*] *acrescente* (a cr- R) P² R; 27. 2 *grauis*] *gravi* P¹: *grauior* P² R; 32. 7 *non* (post *furor*)] *ut* P¹: *aut* P² R; 32. 8 *mei*] *in* P¹: del. P²: om. R; VII. 9. 1 *leuis*] *leui* P¹: *leuior* P² R.

The simplest explanation is that P scrupulously preserves corrections and variants from ρ, while R just picks out one reading. Another possibility worth considering is that the scribe of P is conjecturing the second reading himself, and also adding it to his exemplar ρ, from which R (or an ancestor) was subsequently copied.

9.2 *Conjecture and contamination in U and W*

It is not uncommon for ρ(P) to share an error with either U or W alone. Sometimes the error is trivial (e.g. *et* for *etiam*; or I. 12. 1 *libamento* for *libramento*), so that the agreement could be chance, but more significant agreements are listed below:

ERRORS OF ρ(P)U. I. 1. 4 *certis*] *-us*; 7. 2 *quiddam*] *rem* add.; 16. 3 *et sibi* Gercke: *ac sibi* ξθ (W¹ ?): *accusatus* δ: *acris* P: *atris* U; II. 22. 1 *utramque*] *ueramque*; 26. 7 *nox*] *nos* U: *uos* P; 35. 2 *rapidorum*] *-idiorum*; III. 20. 3 *aquam*] *-a*; IVa. pr. 4 *qua*] *que*; pr. 19 *nec*] *non*; 2. 7 *illam*] *-a*; V. 8. 2 *ipso*] *-e* P¹ RU; 12. 2 *acer*] *aer* P¹ RU; 18. 11 *immerito*] *merito* P¹ RU; VI. 2. 1 *stultis*] *-us* RU, P u.l.; 12. 1 *et* (post *premit*) om.; 18. 6 *etiannunc*] *etiam* (et U) *ecit*; 20. 6 *motum*] *in totum*; 24. 2 *nisi* (post *potest*)] *non*; VII. 14. 3 *cadere* (post *quibus*)] *eadem*.

ERRORS OF ρ(P)W. I. 5. 5 *dire(m)ptam*] *-rectam*; 8. 1 *ab*] *ob*; II. 42. 1 *solus*] *-is*; III. 20. 5 *sic*] *si*; 25. 7 *in* om.; IVa. pr. 2 *lassamus*] *laps*; pr. 13 *aliquem*] *qm* add.; pr. 20 *ut*] *ait*; 2. 11 *est* (post *pulcherrima*) om.; 2. 14 *delphini*] *-in*; IVb. 13. 5 *crudelitibus*] *crudelitatibus*; *frangatur*] *fung*; VI. 8. 1 *prorepunt*] *prorump*- P¹ RW¹.

In some of these passages it may be chance coincidence that ρ(P) and U or W have the same error. But, given the affinity between ρ and v, the total number is great enough, and some of the errors are weighty enough, to make it probable that at least some derive from π. In that case it must be explained how W (in

the case of the first of the above lists) and U (in the case of the second) have arrived at the true reading, and the possibility of contamination must be considered. Since U and W are of late date (s. XV and s. XIV respectively), one can expect a good deal of conjecture, and one finds it. In the second list, it would not, it seems to me, be unreasonable to suppose that in each case where U has the correct reading it could be the result of conjecture. In the first list one cannot be quite so sanguine about conjecture being the sole explanation, for *ac sibi* instead of *atris*, or *etiamnunc* for *et eicit*, or *motum* for *in totum*, are not such obvious emendations; yet in their contexts they are by no means beyond the powers of a fourteenth century scholar. There is no compulsion from this quarter to think that U or W is contaminated, but the possibility must be kept in mind.

10. α (δ), θ , and π derive from a common ancestor (Ψ)

' α (δ)' means 'the consensus of R δ where R derives from α , and δ only elsewhere'; ' ζ (Z)' is to be interpreted similarly, according to whether R adheres to ζ or not.

The following are conjunctive errors of $\alpha(\delta)\theta\pi$, and separative errors of Ψ . Note that some passages are included from the parts of Books III and IVa where δ is missing, so that Ψ is only represented by θ and π .

(a) OMISSIONS

II. 28. 2 adice nunc quod nubes in montem actae non franguntur sed circumfunduntur, et in aliquas partes montis <ante ne id umquam in ipsum> in arbores, ramos, frutices, aspera saxa et eminentia ita diducuntur, ut . . .

ante ne id umquam in ipsum ζ : om. rel.

Oltramare does not mention the words found in ζ , presumably on the grounds that they are nonsense and disrupt a perfectly good sentence. But the sentence is longish and ungainly, and the nonsense only lightly conceals *ante incidunt quam in ipsum* [sc. *montem*], which, followed by a semicolon, breaks up the sentence into two neater parts. There is no simple mechanical explanation of the omission by the other manuscripts, so perhaps it was deliberate, to remove nonsense which was apparently dispensable. (I see no plausible alternative explanation of the variants, for I cannot make a gloss out of ζ 's additional words.)

There is a comparable passage at:¹⁸

III. 29. 8 peribunt tot nomina, Caspium et Rubrum mare, Ambracii et Cretici sinus, Propontis et Pontus <cum uies illam omnibus rebus non equor induxerit> peribit omne discrimen; confundetur . . .

cum . . . induxerit Z: om. rel.

Again what Z adds is nonsense. Oltramare, believing it is an interpolation, alters it to *cum niues illa* [sc. *hiems*] *omnibus rebus, non aequor induxerit*. This is not convincing: one must suppose that the interpolator, inspired by *tenebit alienos menses hiems* in the preceding sentence, was moved to import the irrelevant topic of snow, and to contradict explicitly the central message of these chapters,

¹⁸ See Oltramare, *RPhil* 45 (1921), 21/n. 1; edn., apparatus ad loc.

that the great flood will cover everything with sea. There must be some other solution. Neither an interpolator nor Seneca himself is likely to have referred to anything which *omnibus rebus non aequor induxerit*, nor is it easy to see what object 'X' could be contrasted with *aequor*, to enable it to be said that something *omnibus rebus X, non aequor, induxerit*. Therefore *non* is here problematic. The corrupt *uies* very likely conceals a word for 'flood', perhaps *diluuius*.¹⁹ *illam* could then be corrected to *illa*. Next, Mr. D. A. Russell points out to me that one would welcome the idea that whereas there are now lots of separate seas, there will then be just one sea covering everything: hence he suggests changing *non* to *unum*. We thus tentatively arrive at the following correction of Z's text: *cum diluuius illa omnibus rebus unum aequor induxerit*. This, with its neat clausula, looks like genuine Seneca, and not at all like a gloss. The fact that the words *peribunt . . . peribit* are separated by a longish intervening sentence is no obstacle; cf. e.g. the interval at VII. 25. 4 *ueniet tempus . . . ueniet tempus*. The details of the remedy here are uncertain, but Z again appears to preserve an authentic corrupt reading which in the other manuscripts is omitted, perhaps deliberately.

Next, four places where a single word found in §(Z) alone is unlikely to be conjecture:

VI. 1. 2 hic fuit motus . . . qui Campaniam, numquam securam huius mali, indemnem tamen et totiens defunctam metu toto magna strage uastauit.

toto Z: om. rel.

toto will not do, for it goes ill with *metu*; so it is scarcely a gloss. Conceivably it grew from the ending of *metu*, or from *totiens*, but it may neatly be altered to *tanto*, as suggested to me by Mr. D. A. Russell.

II. 30. 2 . . . exercitum, quem harena austro mota et more densae niuis incidens texit, deinde obruit.

densae §: om. rel.

densae is innocuous, and improves the picture. Nobody would have had much reason to interpolate it, and it may be regarded as genuine.

III. 27. 8 flumina uero suapte natura uasta et sine tempestatibus rapida alueos reliquerunt.

sine Z: om. rel.

Seneca is describing the great flood which will destroy the world. He mostly uses the present tense, picturing it as happening now, but for the perfect *reliquerunt* cf. *sensere* in III. 27. 5. *sine* is obviously right: it is rhetorically more effective (for if the rivers are rapid *without* storms, what will they be like when *immodici cadunt imbres* (III. 27. 4)?); *sine tempestatibus* balances *suapte natura*; and it is confirmed by the general drift of what follows ('If you

¹⁹ S.'s usual word for 'flood' is *diluuium* (III.27.1, 27.14, 29.1, 30.4), but *eluuius* or *diluuius* is presumably possible here. (*eluuii* is conjectured by Gercke at III.26.8.) Once I considered *illuuius* for *uies illam*, but Mr. Reynolds points out that the word is rarely

used to mean 'flood'; *TbLL* cites only Iust. and Drac. Remoter possibilities for *uies illam* are *dies illa* (or *ille*) (cf. III.27.1 *fatalis diluuii dies* (*dies diluuii* Ψ)), or even *perniciis illa* (cf. III.28.2 *illa perniciis*, 29.2 *tanta perniciis*).

consider how mighty rivers like the Danube are at the present moment, what will they be like when they have burst their banks?'). If *sine* is a conjecture, it is a first-rate one, by any standards.

II. 9. 2 numquid dubitas quin sparsio illa, quae ex fundamentis mediae harenae crescens in summam usque amphitheatri altitudinem peruenit, cum intentione aquae fiat?

crescens] *crescens crocum* Z: *ero* (uel *cro*) *cum* R

Oltramare²⁰ assumes that Z's *crocum* is a learned gloss, referring to the saffron sprinkled by the *sparsio* (see *Ep.* 90. 15, *Prop.* 4. 1. 16, *Hor. Ep.* 2. 1. 79f., etc.). R's reading might be interpreted as a case of a marginal gloss *crocum* ousting *crescens*, which would support Oltramare; but in that case the reference of the gloss has been totally misunderstood. It is easier to suppose the similar beginning of the two words caused R's omission. Rather than assume *crocum* is a laconic display of learning, I would accept *crocum* (which was vulnerable to omission), and alter *peruenit*: perhaps to *peruehit* — Seneca does not use the verb elsewhere, but that is not decisive against it; or perhaps, more boldly, to *perfert*, or similar.

Especial importance attaches to cases where ζ(Z) has a corrupt text which is closer to the truth than the perfectly intelligible reading of the other manuscripts. So if the above discussions of II. 28. 2, III. 29. 8, and VI. 1. 2 come near the mark, they are valuable evidence that αθπ share a common ancestor.

(b) TRANSPOSITIONS

ζ(Z) often have a word order which is preferable to that of the other manuscripts, but this rarely constitutes a certain conjunctive error of the latter: for where one word order is plainly preferable on grounds of sense, it is always possible that deliberate alteration has played a part; and where rhythm is the decisive factor, one can seldom be as certain as some critics would like to be that one rhythm is right and the other wrong. In a few cases one can be tolerably sure, because the other manuscripts give a dactylic ending at the clausula, while ζ(Z) give something more acceptable. These cases are as follows, with ζ(Z)'s reading first:

II. 11. 1 *exagitatur exagitat*] *exagitat et exagitatur*;²¹ III. 27. 7 *passim plana populatur*] *plana pass- pop-*; VI. 8. 3 *ad ulteriora penetrassent*] *p- ad u-*; VII. 29. 3 *ueri scientia est*] *e- s- u-*.²²

(c) OTHER ERRORS

Again special importance attaches to errors of ζ(Z) which are close to the truth, such as:

II. 42. 2 si a me quaeris quid sentiam, non existimo tam hebetes fuisse ut crederent Iouem iniquae uoluntatis, aut certe minus paratum.

certe minus paratum (*esse* add. δ) δθπ: *manus* (*minus* Z) *partum* certe ζ

²⁰ *RPhil* 45 (1921), 20.

²¹ The asyndeton is an additional point in ζ's favour.

²² W. H. Alexander, 'Seneca's *Naturales*

Quaestiones: The text Emended and Explained', *University of California Publications in Classical Philology* 13.8 (1948), 328, approves Z's reading here.

The reading *certe minus paratum* cannot stand, for the notion that Jupiter might be poorly equipped with thunderbolts is totally irrelevant to the context, and *paratum* cannot mean *peritum*. Of the conjectures, the least unpromising are Axelson's *aut certe minus peritum* and Warmington's *aut certe minoris peritiae*.²³ But it is far better to delete one letter of ξ 's nonsense and read *aut manus parum certae*. (For *manus certa* in the sense of a good aim, cf. *OLD* s.v. *certus* 13b; *TbLL* 3. 924. 17–24; *Sen. Ben.* 2. 31. 3, *Her. F.* 1128, *Apoc.* 12. 3.)

II. 44. 2 . . . quaedam stringi debere, quaedam adfligi ac discuti, quaedam admoneri.

quaedam adfligi ac discuti scripsi: *quaedam ad elegi ac disti* R: om. Z: *quaedam eligi ac* (et δ : ad F) *distingui* (*distringi* P) $\delta\theta\pi$

See *CQ* N.S. 28 (1978), 304–5.

II. 59. 5 ignauissima animalia, quae natura ad fugam genuit, ubi exitus non patent, temptant pugnam corpore inbelli.

pugnam Gronouius: *pugnant* Z: *fugam* $\delta\theta\pi$

III. pr. 7 quanto satius est . . . docere eos qui sua permisere fortunae nihil stabile ab illa datum esse, eius omnia aura fluere mobilius.

esse ab illa datum Z¹ *eius omnia*] *munus eius omni* Z²

'*Eius omnia* est bien peu satisfaisant, mais le singulier *munus* ne l'est pas davantage' (Oltramare, *RPhil* 45 (1921), 18). But alter Z's *omni* to *omne*, and we surely have what Seneca wrote.

III. 29. 4 itaque non pluuiā istud fiet, sed pluuiā quoque; non incursu maris, <sed> maris quoque incursu; non terrae motu, sed terrae quoque motu.

*maris*¹ – *incursu* om. ρ *sed* suppl. Lipsius *maris*² om. Z
*motu*¹ $\theta\upsilon$: *motus* ZL²: *motum* ρ *motu*² $\theta\pi$: *non concussione* Z

The repeated words have caused problems in the manuscripts. (This part of Book III is missing from δ .) Oltramare²⁴ does not help by omitting to mention the *non* before *concussione* in Z. One might suggest restoration along the following lines:

non terrae motu, sed terrae quoque motu; non concussione <mundi, sed mundi quoque concussione.>

*motu*² om. Z *non concussione* om. $\theta\pi$ *mundi* . . .
concussione suppleui ex. gr.

Compare III. 27. 3: *Neque enim sine concussione mundi tanta mutatio est.*

V. 18. 4 nunc quod de C. Mario uulgo dictatum est et a Tito Liuio positum . .

de C. Mario uulgo Oltramare: de G. maioruolgo Z: *decens maiori* AV θ PU: *de caesare maiori* BW

See my discussion of this passage in *LCM* 3 (1978), 83–7.

²³ Axelson, *Senecastudien*, p. 40; E. H. Warmington cited in Corcoran's Loeb edn. ad loc.

²⁴ *RPhil* 45 (1921), 35; his edition does not mention Z's readings here.

V. 18. 16 diuersis enim irritamentis ad temptandum mare impellimur

mare Pincianus: *re* Z: *ire* $\delta\theta\pi$

VII. 9. 1 aut leuis uis tam alte peruenire non poterit, aut magna et concitata citius ipsa se franget.

tam alte Muretus: *iam alte* Z: *tamen* $\theta\pi$: om. A: *tantum* BV

Oltramare prints *tam alte* in his edition.

VII. 10. 2 *haesitat usquam* Pincianus: *haesitatus quam* Z: *haesitatus qui* $\theta\pi$:
haesitans qui δ

Here Z appears to preserve variants from the archetype.

Finally, a couple of places where Z is correct, and if its reading is a conjecture, it is a first-rate one:

III. 15. 4 ceterum ut in nostris corporibus, ita in illa (sc. terra) saepe umores uitia concipiunt . . . et sulphuratio contraxit umorem, qui modo diuturnus est, modo breuis.

The word *sulphuratio* occurs only here, and is taken to mean 'a vein of sulphur' (Lewis and Short) or the like. But from the ancient point of view there is no sulphur in the human body, and anyway how is sulphur in the earth meant to assist the condensation of liquid there? Z gives the correct text, not *sulphuratio* but *suppuratio*. (P has the slip *suphuratio*; such an error might have suggested *suppuratio*, but it would still be an excellent conjecture).

III. 27. 2 at quam nullo negotio [sc. corpus] soluitur. urbes constituit aetas, hora dissoluit.

dissoluit] *disturbat* Z

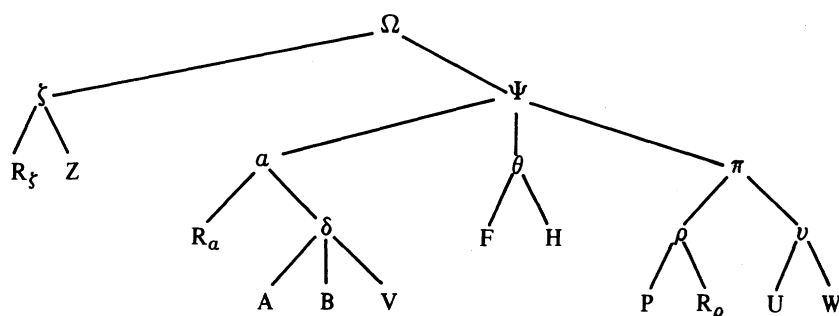
There is nothing intrinsically wrong with *dissoluit*, but it is stylistically infelicitous after *soluitur*. Very likely *disturbat* is correct, *dissoluit* being produced by the influence of *soluitur*. With object *urbes*, *disturbare* is more appropriate than *dissoluere*; cf. OLD s.v. *disturbatio*, *disturbo* 1; ThLL s.v. *disturbo* IB1.

It is unlikely that everybody will agree with my judgements on all the above passages, but cumulatively they establish that $a(\delta)\theta\pi$ come from a common ancestor, Ψ .

11. *The relationship between α , θ , and π*

For convenience ' ξ ' and ' α ' will from now on be used in place of ' $\xi(Z)$ ' and ' $\alpha(\delta)$ '. The conclusions reached so far may be represented by the diagram on p. 196. The establishment of this stemma has two valuable consequences. First, the true value of ξ becomes apparent: wherever it differs from the other manuscripts, its reading must be carefully weighed. Secondly, δ is cut down to size: no reading peculiar to it has much claim to authenticity.

But this is only a provisional stemma, for we do not yet know that α , θ , and π are independent descendants of Ψ (two of them might have a common ancestor). Also, we have to consider the possibility of contamination from ξ in members of the Ψ branch. Settling these issues is tricky because of the amount of conjecture in many parts of the tradition. In § 10 above we saw a number of passages where, it was argued, ξ sincerely preserves a corruption



from Ω , but Ψ gives a conjecture. There is conjecture in Z and R_ζ too; consider, e.g.:

II. 21. 2 esse illum ignem color ostendit, qui non est nisi ex <eo>.

eo suppl. G, ut con. Maduig: om. (spatio relicto θ) Ψ : igne Z, ut con. Guenther: se ut R.

I. 3. 7 ubi uero acies hebes et infirma est, qualislibet aeris ictu deficiet.

qualislibet $AB^1 V \theta v$: qualibet P: quolibet $RB^2 L^1$: quaslibet L^2 : cuiuslibet Z.

See my discussion of this passage in *Prometheus* 5 (1979), 64–5. Conjecture is especially frequent in δ (cf. e.g. *CQ* N.S. 28 (1978), 299–302), though not very apparent in θ or π . The presence of conjecture in the tradition means that there is no question of rigid application of the stemmatic method. It also means it is hard to determine the precise relationships of $a\theta\pi$. In particular, there are cases where $Z\delta$ agree against $\theta\pi$, and yet probably do not represent Ω . Take for example, II. 28. 3 *sibilat* $Z\delta$: *si uiuat* $R_\zeta\theta\pi$; most likely $Z\delta$ have arrived at the truth independently by conjecture.

VII. 29. 2 prior [sc. cometes] intra pauciores menses se recepit.

se recepit (-cip- A^1) $Z\delta$: recepit (-cip- RU) se $R_a\theta\pi$

Probably *se recepit* is right, because Seneca does not normally put an unemphatic monosyllable at the end of a sentence (other than a two word sentence). $R_a\theta\pi$'s agreement indicates that Ψ read *recepit se*; δ 's agreement with Z may be a lucky accident, or prompted by euphony.

With these warnings, let us consider the interrelationships of $a\theta\pi$.

11.1 Errors of $a\theta$

$a\theta$ share the following errors, $\zeta\pi$ having the true reading:

- (a) OMISSIONS. II. 13. 2 *cadit leue est an graue leue est non potest ruere quod potest carpi deinde illud quod* (post *quod potest carpi deinde illud quod*); IVb. 13. 10 *ne tepescant*.
- (b) TRANSPOSITIONS. None.
- (c) OTHER ERRORS. I. 5. 14 *tantem deformitatem corrupta facie* Z π : -a -e -a -e R: -a -e -a ut faciem δ : -a -e -em θ ; II. 14. 2 *necesse est enim* ut add.; IVb. 3. 6 *grandinem* glaciem; 4. 2 *aeris* (post *inclinatio*; om. W^1) temporis; V. 6 *sol* solum; 9. 1 *uer aquosum* aer aquosum θ : aer uere aquosus δ .

In most cases it is clear that $\zeta\pi$ are right. There is no need here to discuss the detail of the text at II. 13. 2, because homoeoteleuton is involved in the omission

by $\delta\theta$, so nothing is proved about a connection between them. At II. 14. 2 *ut* ($\delta\theta$) is found in all editions, but Seneca nowhere else uses it after *necesse est*, so it must be wrong here. The text of IVb. 4. 2 requires some discussion, since again $\delta\theta$'s reading has commonly been accepted:

cum uer coepit, maior inclinatio aeris sequitur, et calidiore caelo maiora fiunt stillicidia.

aeris Z π : *temporis* $\delta\theta$

Editors from Muret to Koeler, and Richard, read *aeris*; Fickert reads *teporis*, the suggestion of Gruter; others read *temporis*. In chapters 4 and 5 of Book IVb Seneca seeks to explain why it snows in winter but hails in spring. His explanation is in two stages: ch. 4 explains that in spring larger raindrops are formed than in winter; ch. 5 says how these larger raindrops are frozen into hail. The first stage starts with the sentence immediately preceding the one quoted above: *hieme aer riget, et ideo nondum in aquam uertitur, sed in niuem, cui aer propior (propior aer Z) est*. Seneca is here envisaging snow as coming somewhere midway between air and water in consistency (cf. IVb. 13. 2), so that air can change into it more readily than into water. The next sentence is open to two interpretations, depending on whether we read *aeris* or *temporis*.

(i) With *aeris*, the meaning is that when spring arrives, a greater change can take place in the air, so that it can turn into water; *maior inclinatio aeris sequitur*. (It may help to imagine air, snow and water as represented by three points on a linear scale: the warmth of spring enables air to move along the scale as far as water, whereas in winter it only gets as far as snow.) But this text and interpretation poses one question: can *inclinatio aeris* refer to qualitative change, as it must (like *mutatio aeris* in the following sentence; cf. III. 9. 2)? At I. 1. 5 *inclinatio eius* [sc. *aeris*] refers to something different, spatial motion, not qualitative change. Yet the sense required could be supported by such passages as: Var. R. 1. 9. 6 *si inclinabit* [sc. *terra mediocris*] *ad illud quod deterius*; Plin. nat. 14. 130 *in uitium inclinantis* [sc. *uini*] *experimentum est* . . . Here *inclino* describes qualitative change, so one could certainly accept a phrase like *aer in aquam inclinans*, from which it is not far to *maior inclinatio aeris*, whose point is quite clear from *nondum in aquam uertitur* in the previous sentence.

(ii) With the reading *temporis* there is no problem about *inclinatio temporis* meaning 'change of (the) season' (cf. Ep. 67. 1 *uer . . . iam inclinatum in aestatem*), but 'a greater change of season follows' is no sensible way of saying that the weather rapidly becomes warmer, which is what it ought to mean. For one cannot translate *temporis* as 'climate' (Corcoran); and as for Gruter's *teporis*, one would expect *in teporem*, since *tepor* means 'warmth', rather than the neutral 'temperature'. In conclusion, the reading *temporis* presents problems, whereas *aeris* is acceptable, and so probably right.

So in each case in the above lists $a\theta$ are in error; for the remaining places are not controversial. One of the errors has already been dismissed as insignificant for the question of a connection between $a\theta$ (II. 13. 2), and others may be dismissed too:

1. 5. 14, where Ψ may have had something like *tanta deformitate corrupta facie*, of which its descendants' various readings are conjectural remedies;

perhaps also II. 14. 2, for *ut* might have been omitted by accident after *enim*. This leaves five significant errors, which constitute *prima facie* conjunctive errors of $a\theta$.

But we must consider the possibility that these errors were in Ψ , and π has the true reading either through conjecture or by contamination. Conjecture may be confidently dismissed, for nobody would have conjectured *ne tepescant* at IVb. 13. 10, and the remaining readings would be extremely good conjectures; add that π is not given to conjecture elsewhere. But contamination must be taken more seriously, given the following two places where $a\theta$ share an error, and π has both the error and the true reading, the latter occurring in Z too:

I. pr. 11 *ac se contemptus* (*contentus* *rell.*) Z : *ac se contentus modico* π : *ac contentus modico* $a\theta$; III. 3 *uen(a)e* Z : *uene unde* Rv : *uel uene unde* P : *unde* $\delta\theta$.

See Axelson, *Senecastudien*, pp. 19–21, for a demonstration that Z is right in the first passage: $a\theta$'s text has *ac* before a guttural, which Seneca avoids. We shall have to return to the possibility of contamination in π .

11.2 Errors of $a\pi$

$a\pi$ have the following errors; in each case $\xi\theta$ have the correct text:

- (a) OMISSIONS. I. 11. 2 (11. 1 Gercke) *hoc*; 14. 4 *enim*; II. 48. 1 *non* (*ante prorogentur*); III. 25. 5 *palam*; VI. 8. 5 *siue* (*post nascitur*); VII. 4. 3 *et* (*post enim*); 30. 3 *pars* (*partem post operis* add. R).
- (b) TRANSPOSITIONS. None.
- (c) OTHER ERRORS. I. 6. 6 *parat*] *apparat* PW^1 : *apparet* δU : om. R ; 15. 8 *possint*] *-ent*; II. 3. 2 *est* (*ante nostri oculus*)] *enim*; 20. 2 *spiritus*] *speciem* δW : *spem* PU ; III. pr. 2 *fine*] *fuge* Pv : *fuga* R : *fuge impetu* δ ; pr. 16 *e iure*] *euenire* (*bis*); V. 8. 3 *medium*] *-am*; ²⁵ 14. 1 *quod*] *quae*; 18. 7 *huius* (*ante laboris*)] *in eius* $V\pi$: *in eis* AB ; 18. 13 *temperiem*] *et* add.; VI. 14. 2 *modestius*] *molestius* (*-tus* AB); 18. 7 *perferendis*] *pro-*; 20. 3 *continentem*] *concurrentem* (*-e* U); 29. 1 *quid* (*ante ubi*)] *qui*; VII. 18. 2 *per* (*post stella*)] *super* (*supra* A); 29. 3 *ferri*] *fieri*; 31. 1 *molliusque*] *mollius* π : *et mollius* a ; 31. 3 *exui*] *eui* π : *cui* R : *erui* δ .

A few of these errors are insignificant, for $a\pi$ could well have arrived at them independently (e.g. I. 15. 8, V. 8. 3, VI. 18. 7, VII. 29. 3), but a number are significant, and are *prima facie* conjunctive errors of $a\pi$.

However, there are two other theoretically possible explanations of the facts which deserve to be considered briefly:²⁶ (a) $a\pi$'s errors go back to Ψ , and θ has corrected them by conjecture; (b) $a\pi$'s errors go back to Ψ , and in θ they have been corrected by contamination from ξ . These possibilities must now be examined:

(a) There are various weaknesses in this explanation. First, while δ is throughout full of blatant conjecture, θ is remarkably sincere, so that it is implausible to postulate so many conjectures of such accuracy in θ , all, incidentally, confined to errors derived from Ψ , never those derived from Ω (for θ is not noted for having the truth where all the other manuscripts agree in error). Secondly, in several cases there is nothing intrinsically wrong with Ψ 's text, so that θ would

²⁵ On the gender of *dies* here see E. Fraenkel, *Glotta* 8 (1916), 59 (= *Kl. Beitr.* i. 62).

²⁶ It is also theoretically possible that π is contaminated from a , or vice versa; but on the former supposition, it would be sur-

prising that none of a 's more outrageous errors found their way into π ; against either supposition, the agreements of $a\pi$ are errors, and almost exclusively the trivial sort of errors one does not expect to be transmitted by contamination.

have no reason to emend it (e.g. I. 6. 6 *apparatus*; 14. 4 *enim* om.). Thirdly, some of the postulated conjectures would be extremely shrewd, especially *e iure* at III. pr. 16.

(b) If there was contamination from ζ, one would not expect the contaminator to pick up all these comparatively small details while overlooking so many much greater discrepancies between the ζ text and the Ψ text. One requires more striking evidence before postulating contamination. But as it happens there are two places which could be construed as evidence, because, if one accepts the current text, ζθ agree in an error which could have been transmitted to θ by contamination from ζ:

II. 3. 2 . . . reparat enim uitalia . . .

reparat Gercke: *praeprarat* θ: *parat* (pars W)δπ *uitalia* Gercke: *id alia* Zθπ: *alia* R: *et alia* δ

I believe *reparat* is right (for the idea cf. Lucr. 2. 1146 ff., 4. 867 ff.), but even supposing *parat* is right the agreement of ζθ is none too significant, for *prae-* abbreviated to 'p' might creep in or drop out very easily.

II. 13. 4 hinc descendere non potest, sed ne ab externo quidem comprimi.

comprimi θ: *primi* π: *exprimi* AV: *deprimi* B

I believe that *comprimi* is defensible (cf. *cogitur* in 13. 3 *nihil enim illic iniuria cogitur*), but even if it is not, the disagreements of δπ mean one cannot be certain what Ψ's reading was.

So the only sensible conclusion is that θ's readings are authentic, and απ share a number of conjunctive errors.

11.3 Errors of θπ

If we omit cases where R_ζ or R_α agree with θπ against Zδ (cf. p. 196 above), there are the following agreements of θπ against Zα:

(a) OMISSIONS. 1. 2. 4. *est* (post *spissum*).

(b) TRANSPOSITIONS. I. 13. 3 *pluiiarum autem* . . . *utar enim* (*autem* B)] *p- enim* . . . *u- autem*; V. 18. 7 *ex magna parte*] *magna ex parte*; VI. 9. 2 *quidem causam*] *inu. ord.*; 12. 1 *potuit aer*] *inu. ord.*; VII. 24. 3 *uario decore*] *inu. ord.*

(c) OTHER AGREEMENTS. II. 5. 2 *exercitata*] *-cita*; 6. 3 *ostendent*³] *-unt*; 14. 2 *imo*] *summo*; 42. 3 *metum*] *motum*; 48. 1 *impetretur*] *-atur*; 49. 2 *significatio*] *-ione*; III. 8 *exteriore*] *-ori*; V. 1. 4 *aliquo*] *loco add.*; 9. 3 *illud*] *quidem add.*; 14. 2 *supra*] *super*; 16. 4 *interuenit*] *inuenit*; 18. 2 *possint*] *-ent*; VI. 1. 14 *nascitur*] *-imur*; 3. 1 *concuti*] *conuerti*; 23. 3 *tunc* (ante *maximum*)] *tum*; 25. 4 *egeum*] *egium* (?-itium W¹); 26. 4 *montibus*] *motibus*; 30. 1 *aestu*] *ictu*; VII. 10. 2 *impedimento*] *-um*; 18. 1 *apparuerunt*] *-int*; 27. 3 *non*] *nonne*.

These readings must be carefully weighed. We may eliminate from consideration minor errors which θπ might have fallen into independently (II. 5. 2 *exercita* (if it is an error); 6. 3 *ostendent*; 42. 3 *motum*; III. 8 *exteriori*; V. 14. 2 *super*; VI. 23. 3 *tum*). Then there are some obvious errors which α could have remedied conjecturally without difficulty (those listed in the last sentence, plus I. 2. 4 *est* om.; 13. 3 *enim* . . . *autem*; II. 14. 2 *summo*; 48. 1 *impetratur*; 49. 2 *significatione*; V. 1. 4 *aliquo loco*; 16. 4 *inuenit*; 18. 2 *possent*; VI. 3. 1 *conuerti*;²⁷ VII. 18. 1 *apparuerint*).

²⁷ *nec ira numinum aut caelum conuerti aut terram*. Editors are fairly evenly divided

between *concuti* and *conuerti*. *Conuertere* can mean almost 'to convulse, destroy' (see

In a few cases $\theta\pi$ certainly have the true reading: V. 9. 3 *illud quidem*; VI. 1. 14 *nascimur*; 25. 4 *egium*; 26. 4 *motibus*. In other cases $\theta\pi$ may be correct: at V. 18. 7 Z δ 's *ex magna parte* looks like *simplex ordo*; Axelson, *Senecastudien*, pp. 90–1, has shown that *impedimentum* is possible at VII. 10. 2 (Z δ have the more usual *impedimento*, perhaps a conjecture). In all these cases Za may have arrived at the same error by accident or conjecture.

There is not much left: VI. 30. 1 *ictu* maybe looks a safe enough conjunctive error of $\theta\pi$, but it occurs in a quotation from Virgil, so somebody acquainted with the poet might have corrected it to *aestu* in δ . Then there are three transpositions in $\theta\pi$ (at VI. 9. 2; 12. 1; VII. 24. 3), which are *prima facie* conjunctive errors. But α is so careless about word order that maybe in these few places $\theta\pi$ preserve Ψ 's order, and a chance error has brought α into line with ζ .²⁸

So $\theta\pi$ do agree in error, but there is no certainty that any of these errors are truly significant, for they may all derive from Ψ , α diverging by accident or design.

11.4 Conclusions about the relationship between α , θ , and π

Now that the readings of $\alpha\theta$, $\alpha\pi$, and $\theta\pi$ have been examined in turn, it is time to pull the threads of this discussion together. Briefly the findings are these: $\theta\pi$ often agree in error, but it is an open question whether these are significant conjunctive errors of $\theta\pi$, or are due to conjecture by α ; $\alpha\pi$ share over a dozen *prima facie* conjunctive errors; $\alpha\theta$ share about five *prima facie* conjunctive errors. From this small harvest no clear picture emerges, for there are two chief ways of interpreting the results:

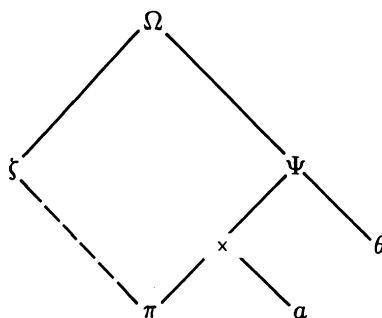
(A) One way is to suppose that the errors of $\theta\pi$ are not significant, but those of $\alpha\theta$ and $\alpha\pi$ are. In such a situation there must be contamination in either θ or π , and the only possible known source is ζ . We have already seen (§ 11.2) that it is implausible to postulate contamination from ζ in θ , but contamination from ζ in π is more feasible: for in the places where $\zeta\pi$ have the correct reading and $\alpha\theta$ have a significant error (p. 196), the error is normally a big one, such as would easily catch the contaminator's eye (the only exception being the addition of *ut* at II. 14. 2; but π might have omitted this accidentally after *enim*); and places have been mentioned where π has both the error and the true reading (p. 198). Thus one might deduce the stemma on p. 201.

If there is contamination it is very light (given that there are only nine places where $\zeta\pi$ agree against $\alpha\theta$), so it is not likely to lead us seriously astray. (B) If, however, one assumes that some of $\theta\pi$'s errors are significant, one can then suppose that $\alpha\theta\pi$ are three independent descendants of Ψ , and that where two of them share errors, this is either coincidence, or, better, the product of interlinear or marginal variants and corrections in Ψ itself. This would account

OLD s.v.2; *TbLL* 4.866.45 ff.; Hall on Claud. *DRP* 1.64–5), but since it is also used of the revolution of the heavens (OLD s.v.1; *TbLL* 4.854.25 ff.), it is inapposite here with *caelum*. There is perhaps a parallel at Cic. *Rep.* 1.56 *qui* [sc. *Iuppiter*] *nutu, ut ait Homerus* [e.g. *Il.* 1.530], *totum Olympum conuerteret*; but unless Cicero has misunderstood ἐκείθεν, one should

maybe consider *concuteret* there. Axelson, *Senecastudien*, p. 79, makes a further point against *conuertere* at NQ VI.3.1, namely that it gives a poor clausula. So *concuti* is preferable.

²⁸ As a comparison, F δ are not related, but share three transpositions: VI.3.3 *pars magna*; VII.6.1 *umida aridaque*; 11.2 *quidem fusus*.



for the places where π has both the true reading and the false, and for divisions of the manuscripts such as the following:

III. 25. 10 *exesa* ZF, H u.l.: *aquosa* H¹ π ; IVa. 2. 7 *uisitur* ZF, H u.l.: *nascitur* H¹ π .

(In both passages *a* is missing.) This second line of interpretation would confirm the stemma given provisionally on p. 196 above.

There are no adequate grounds for deciding between these two interpretations, nor is it of much practical importance to do so, for, where ζ and one of Ψ 's representatives agree against the other two, the decision in any case has to be made on critical grounds. As a working hypothesis we may suppose $a\theta\pi$ are independent descendants of Ψ .

C. THE OTHER MANUSCRIPTS

1. Manuscripts of the ζ family

The corrections (L^2) in L (Leiden Voss. lat. F 69, s. XII), and the excerpts in a twelfth-century florilegium (γ),²⁹ both derive from ζ , independently of Z. See *Prometheus* 5 (1979), 63 ff.

2. Manuscripts of the δ family³⁰

2.1 Manuscripts related to A

Aberdeen 205 (D². 4. 83) (s. XIV), Abr., has a complete text, with the traditional book order. In Books I–III. 25. 6 *tota* and IVb–VII it is closely related to A, having all the transpositions of A given on p. 187 above, and all the omissions there listed, with the exception of II. 45. 3 *hic . . . uiuimus*. This divergence does not prove independence from A, for it may be a result of the contamination which is much in evidence (e.g. Abr. has the complete text of II. 13. 2), and which probably comes from the same π source which supplies the missing part of Book III and Book IVa.³¹

²⁹ This florilegium is contained in: B.L. Add. 16608 (s. XIV); Douai 285 (s. XII); Douai 533 (s. XII/XIII); Troyes 215 (s. XII/XIII); Vatican Reg. lat. 1707 (s. XIII).

³⁰ See particularly Gercke, *Seneca-Studien*, pp. 8–33; *Studia Annaeana*, pp. 35–44; Geist, op. cit., pp. 21–31; also Oltramare, edn., pp. xxix–xxx; L. Castiglioni, *AFLC* 18 (1951), 87, n. 2.

³¹ On Abr.'s text of II.13.2, see Geist,

op. cit., pp. 35–6; his account of Abr.'s affiliations (pp. 23–4) is erroneous. In III.25.6 – IVa Abr. generally, but not always, agrees with π : of the errors of π in this section listed on p. 189 above, Abr. has the omission at III.27.1 and the errors at III.27.11, 29.6, IVa.pr.11, 2.7, but not the omissions at III.26.8, 27.4, 28.6. The occasional agreements with ρ (e.g. III.25.9 *ob] ab*), *v* (IVa.pr.20 *sumus] simus*), U

In Book IVb λ is closely related to A, see below, § 5.

2.2 Manuscripts related to B

It is already well established that there are three manuscripts derived from δ which share numerous conjunctive errors with B (e.g. they have the transposition and omissions given as characteristic of B, on p. 187 above); they are:

| | |
|----------------------|--|
| C | Heiligenkreuz 213 (s. XII ²) |
| *Prag. ³² | Prague L 94 (1348) (s. XIII) |
| | *Munich, Electoralis 175 (s. XV) |

It has been demonstrated by O. Foerster³³ that the Munich manuscript is a direct copy of C. The precise relationships between B, C, and Prag. are not firmly established,³⁴ but the problem is not worth pursuing, for AV enable us to eliminate errors peculiar to B, without any help that C and Prag. might be able to offer.

2.3 Manuscripts related to V

The manuscripts in this category are numerous, and mainly of Italian provenance, because this form of text reached Italy in the late thirteenth century, and was widely copied there in the fourteenth and fifteenth. The large lacuna which δ has in Books III and IVa was frequently filled from some other source, so these manuscripts may conveniently be classified according to whether they preserve the lacuna or not, and if not, according to the source from which the lacuna is filled. The various classes will be denoted by the symbols ' δ -O- δ ', ' δ - η - η ', etc., where the first letter indicates the source of Books I-III. 25. 6, the second indicates the source of Books III. 25. 6-IVa (O denoting a lacuna), and the third, the source of Books IVb-VII. Most of the manuscripts in these various categories are heavily contaminated. By confining attention to errors of word order, which are most often resistant to correction by contamination, and least often transmitted by the contaminator, it is generally a simple matter to discover the basic affiliation of a particular manuscript. So in this section details of contamination will normally be ignored.

(e.g. IVa.pr.1 *tecum*] *iterum*) and W (III.30.6 *committent*] *commiscent*) seem to show that Abr. is not a sincere, independent descendant of π , but contaminated. It is scarcely worth pursuing its precise affiliations and the source(s) of contamination; I have collated the whole section in question and nothing clear emerges.

³² On the asterisk see n. 12 above.

³³ O. Foerster, *Handschriftliche Untersuchungen zu Senecas Epistulae Morales und Naturales Quaestiones*, *Würzburger Studien zur Altertumswissenschaft* 10 (Stuttgart, 1936), pp. 46-56.

³⁴ Occasional separative errors show that neither B nor C is derived from the other (e.g. B omits II.12.5 *haec*; IVb.11.2 *totum*; C omits II.1.1 *caelum*; *quemadmodum*). The status of Prag. is uncertain:

G. Müller, *De L. Annaei Senecae quaestionibus naturalibus* (Diss. Bonn, 1886), pp. 5-9, tried to show that B and Prag. are twins; but Gercke, *Studia Annaeana*, pp. 40-1, thought Prag. might be a copy of B, and none of Müller's evidence rules this out. O. Rossbach, *BPhW* 27 (1907), 1480, after re-examining Prag., declared it to be neither a copy of B nor a twin; one may trust his statement that it is not a copy, but one wonders what precisely he means by twin. Nothing is known of the relation between Prag. and C, but the similarity of the contents of B and Prag. suggests that they are closer to each other than to C (for they both contain the *Asclepius* and the Latin translation of Nemesius, besides the *Natural Questions*).

2.31 *The δ-O-δ manuscripts*

The following manuscripts have many errors characteristic of δ, among them the large lacuna in Books III-IVa (although in some cases a contaminator has completed the sentence in which δ breaks off at III. 25. 6):

- Florence Laurentianus 82. 20 (s. XV)³⁵
- Riccardianus 637 (s. XIV)
- London British Museum Royal 5 D.X (s. XIII)
- Paris lat. 11855 (s. XIV)
- Vatican Chigiani E VIII 252 (s. XIII)
- H VII 245 (s. XV)
- Vat. lat. 1769 (s. XIV)
- 2213 (s. XIV)
- 2216 (s. XIII/XIV)

These manuscripts share many conjunctive errors with V against AB, for example, the transpositions listed in *CQ* N.S. 28 (1978), 300 n. 20. It is to be understood that the composite δ MSS. mentioned in the following pages all share those conjunctive errors with V, in the parts where they derive from δ.

2.32 *The δ-η-η manuscripts*

Three manuscripts of this type have the same lacuna as H in Book IVa, i.e. they break off after IVa. 2. 19 *quippe uernis*:

- *Cracow 534 (s. XV). See Geist, op. cit., p. 29
- Naples IV G 50 (s. XIV)
- Vatican Reg. lat. 1454 (s. XIV)

In Books I-III. 25. 6 the last two of these share conjunctive errors with V, and thereafter they share conjunctive errors with η,³⁶ e.g.:

- VII. 8. 1 *suo om.*; 8.2 *uerbis utar*] inu. ord.; 9. 1 *-que* (post *celsioribus*) om.; 12. 2 *esse et sui iuris*] *et sui iuris esse*; 12. 4 *defectio siderum*] inu. ord.

As for the Cracow MS., I rely on Geist, although it is conceivable that this is really a θ MS. like Riccardianus 391, etc., on which see below, § 3.2.

The majority of the δ-η-η MSS. have a complete text of Book IVa, resembling E's. This is the only form of composite δ MS. which was recognized by Gercke, and there are several manuscripts of other sorts which he mistakenly assigned to this group; therefore it may be that some of the manuscripts which I have not seen in the following list do not belong here, and to that extent the list is provisional:

- *Copenhagen, Kongelige Bibliotek, Ny Kgl. Saml., 57b fol. (s. XV)³⁷
- Escorial Q I 8 (s. XIV)
- S II 3 (s. XIV)³⁸
- Florence Laurentianus 76. 35 (A.D. 1426)
- Holkham Hall 390 (s. XIV)

³⁵ In this manuscript the text of the missing portion of Books III-IVa (taken from an η source, see next note) is tacked on to the end, after Book VII.

³⁶ η is a descendant of θ, and ancestor of DE and others; see § 3.2 below.

³⁷ This manuscript forms a close-knit group with Paris lat. 17911 and Vatican Pal.

lat. 1541, all three having a similar text, and the same marginal notes. Cf. B. L. Hijmans, *Mnem.* Ser. IV. Vol. 21 (1968), 240-53; J. Fohlen, *Scriptorium* 29 (1975), 62-6.

³⁸ I am grateful to Dr. C. B. R. Pelling for inspecting this manuscript in the Escorial for me.

- *Leiden Lips. 24 (s. XIV). See Gercke, *Seneca-Studien*, pp. 18–19; he collated parts of the manuscript, so his classification may be trusted.
 Madrid, Bibl. Nac. 10238 (s. XIV)
 Oxford, Balliol 130 (s. XV)
 — Merton 300 (s. XIV)
- *Padua, Bibl. Antoniana, I. 9 (s. XIV). See L. Castiglioni, *AFLC* 18 (1951), 98–102, a thorough and reliable treatment.
 Paris lat. 6380 (s. XIV)
 — 6390 (s. XIV)
 — 8717 (s. XIV)
 — 17842 (s. XV)
 — 17911 (s. XV)
- *Tours 693 (s. XV)³⁹
 Valencia, Bibl. Univ. 2150 (s. XV)
 Vatican Arch. Cap. S. Petri C 121 (s. XIV)
 — Barb. lat. 127 (s. XV)
 — Chigiani A VI 189 (s. XV). Excerpts.⁴⁰
 — Pal. lat. 1541 (s. XV)
 — Ross. 559 (s. XIV)⁴¹
 — Vat. lat. 2214 (s. XIV)
- *Vienna Palat. 3134 (s. XV). See Gercke, *Studia Annaeana*, pp. 41–2; Geist, op. cit., p. 28.
- *Wolfenbüttel 4315 (Gud. lat. 10) (s. XV). Collation in Fickert's edition (where it is called G; Gercke calls it g).

Most of these manuscripts are heavily contaminated, but they preserve characteristic errors of V and η . See also Gercke, *Seneca-Studien*, pp. 17–33, 71–6; in his edition he records the readings of a few of the manuscripts under the sigla ϵ (up to III. 25. 6) and η (thereafter).

2.23 The δ - ρ - δ manuscripts

Paris lat. 6395 (s. XIV) has a lacuna comprising III. 25. 9 *umor apprehendit* . . . V. 9. 2 *noctis parte per-*, where an ancestor must have lost a number of folios. Geist, op. cit., pp. 23–4, shows that in III. 25. 6–9 the manuscript shares errors with P, while elsewhere it basically derives from δ . Castiglioni (*AFLC* 18 (1951), 84–98) demonstrates that Cesena S XX, 1 (s. XIII/XIV) is not of δ - η - η type, as Gercke said it is, but δ - ρ - δ . A further manuscript of the same type is Vat. lat. 2212 (s. XIV), and most of the corrections in W come from a similar source. Examples of ρ readings in the three manuscripts (called here Par., Ces., Vat.) are:

III. 25. 6 *descendunt* (post *grauiora*) D: *decedunt* ZHU: *discedunt* F: om. W¹: *decidunt* ρ Ces. Par. Vat. W²; 25. 7 *in* (post *ut*) om. ρ W Ces. Par. Vat.; 25. 8 *Stationensi* Hermolaus: *statione nisi* uel *uisi* codd. plerique: *statione uisus* uel *nisus* R Ces. Par. Vat. W²; *aura*] *aqua* R Ces. Par. Vat.

³⁹ The contents of Tours 693 are identical with those of Paris lat. 8717, except that the end of the Paris MS. is lost, so that one can merely assume it originally contained the last couple of items found in the Tours MS. Some of the contents are unusual, particularly the grouping of the first few items: *Iuncta de S. Germano, Tabula alphabetica ex operibus Senecae*; Albertinus Mussatus, *Argumenta tragoediarum Senecae*; Mart. 5.42; Seneca *Apoc.*; *Anth. Lat.* 660.

So it is a reasonable assumption that the Tours MS. is a twin or even a copy of the Paris MS., in which case the former may be safely assumed to have a δ - η - η text like the latter, which I have seen.

⁴⁰ The first three excerpts are: I.pr.1–pr.2 *Quantum . . . unde lucet*; II.56.1–2 *tonitrua nos . . . uti*; III.25.12 *Quis non grauissimas . . . creditur*.

⁴¹ Formerly Vienna Rossianus IX.249; cf. Geist, op. cit., pp. 29–31.

From the last two readings it appears that the ρ source in question is like R.

*Cracow 536 (s. XV) only contains the preface to Book I. Geist, op. cit., pp. 24–5, shows that it is closely related to Paris 6395.

3 Manuscripts of the θ family⁴²

3.1 Manuscripts related to F

Geist, op. cit., pp. 14–16, provides sufficient evidence to show that *Basle F III 34 (s. XIV), Bas., is a descendant of θ , and closely related to F. If he had possessed a full collation of F, he would have seen that the following readings of Bas., which he reports on pp. 51–9, are conjunctive errors shared with F:

II. 32. 8 rem] resti; 35. 2 superueniens] superuehemens; 52. 1 uenit] perit; III. 29. 3 linimenta (-o Ψ)] ligamento; 30. 3 non] nisi; VI. 7. 5 diuidenda] tundenda; 9. 3 concidunt] considunt.

So Bas. is a close relative, maybe even a descendant, of F. It is also heavily contaminated: Geist gives some evidence of contamination from δ ; it also has the full text of II. 13. 2, otherwise found only in $\xi\pi$; and there is some slight indication of readings like those of Paris 6385, a relative of R (see CQ N.S. 28 (1978), 306–7), e.g.: II. 5. 2 exerci(ta)ta] excitata Paris 6385 Bas.; III. 24. 3 pertusos (per tubos Muretus: per riuos δ)] percussos R Paris 6385: percusso Bas. Contamination from a manuscript like Paris 6385 would explain the δ readings and the full text of II. 13. 2.

*Basle F IV 62 (s. XV) was copied at Basle, possibly from the preceding Basle MS., for the contents of the two are the same: [Seneca] *De remediis fortuitorum*; Al Kindi, *De radiis stellis seu theoricis artium magicarum*; Seneca, *Natural Questions*. (I owe this information to the Institut de Recherche et d'Histoire des Textes.)

Less closely related to F is the following group of manuscripts:

- Eton College 89 (s. XIII). *Grandinem* book order, with Book IVa missing. The text is an abridgement.⁴³
- Esc. Escorial N III 16 (s. XIII). *Grandinem* book order, with Book IVa omitted by the first hand, but supplied (as far as IVa. 2. 28 *terra acciperet*) by a second hand from a λ source (see below). The manuscript is in some disarray, for fos. 113–20 should come after fo. 128, and fo. 145 should come after fo. 153.
- G Montpellier H 116 (s. XII²). *Grandinem* book order. The quires are in disarray with the *Natural Questions* on fos. 100^v–12^v, 73–80^v, 121–44^v consecutively. In the disarrangement the final folios were lost, so the text now breaks off after IVa. pr. 13 *cum quis*.

Gercke, *Studia Annaeana*, pp. 10–12, and Geist, op. cit., pp. 9–10, have shown that these are closely related manuscripts. For instance, all three have *discutiuntur* instead of *discuntur* for the last word of Book III, and *Grandines* instead of *Grandinem* for the first word of Book IVb. The Eton MS. is closer to Esc. than to G: for it and the first hand of Esc. omit Book IVa, and they share errors not in G (e.g. II. 24. 1 *aut*] *an*; 35. 2 *flectit*] *-tuntur*; 59. 4 *ut om.*; *resoluant*] *-uere*). The text of the Eton MS. is incomplete, and has been ruthlessly adapted by the abridger, so that it often bears a remote resemblance to what Seneca wrote, and may be ignored.

⁴² See references in n. 15, and Geist, op. cit., pp. 9–16.

⁴³ I am grateful to the Provost and

Fellows of Eton for transferring this manuscript to the Bodleian for me.

Nobody has yet noticed that Esc. G are composite manuscripts, which derive partly from θ , partly from δ or a similar source. I begin with their θ section. From VI. 18. 3 to the end of VII, and in I-IVa (as far as their texts go), they share all the errors of FH listed above, p. 188. Furthermore, they share errors with F against H, namely:

- (a) OMISSIONS. II. 32. 7 *illa*; III. 28. 5 *non* (ante *intellegimus*).
- (b) TRANSPPOSITIONS. III. 25. 4 *in galatia esse*.
- (c) OTHER ERRORS. I. pr. 11 *etiam*] *quae* Esc. G: *quaeque* F; 1. 14 *scilicet*] *licet*; III. 12. 1 *interrogabo*] *-gando*; 20. 5 *aere*] *ipso* add.; 28. 2 *nubes et amnes*] *n- et imbres* Esc. G: *imbres et imbres* F; VII. 25. 6 *illis*] *illi*.

However, they do not share the errors of F given on p. 187, so they do not derive directly from F, but share a common ancestor with it.

From IVb. 3. 1 to VI. 18. 3 Esc. G are closely related to δ . To illustrate this here are all the omissions of Esc. G δ , and the transpositions found in Book IVb:

- (a) OMISSIONS. IVb. 9 *hoc* (ante *existimet*); V. 4. 3 *ergo*; 6 *ergo* (ante *interest*); 15. 2 *in* (ante *tenebris*); 16. 4 *et* (ante *contra solem*); VI. 17. 3 *ipse*.
- (b) TRANSPPOSITIONS. IVb. 6. 1 *ineptias nostrorum omnes*; 7. 2 *uis esse potest*; 9 *citius accedet* (-it Esc. G) *calor*; 11. 1 *sol propiora*; 11. 4 *locum puncti*; 11. 5 *a sole est*; *magnum non potest*; *alterum altero sit*; 12 *concupi niuem*.

Such errors of Esc. G δ continue with unabated frequency until the transposition *tanta uis* at VI. 18. 3. Thereafter Esc. G share the errors of θ , beginning at VI. 19. 1, *satis* for *satius*.

But many of δ 's errors are not to be found in this portion of Esc. G, e.g. the following omissions:

- IVb. 3. 6 *et ego*; 4. 1 *quidem*; *usque*; 6. 1 *uentura*; 6. 3 *bene* ((ue)l A); 11. 5 *quam campus . . . arbor alia magis*; 13. 6 *umquam*.

The existence of errors in δ which are not in Esc. G could be explained in more than one way: Esc. G could be descendants of δ in which there is contamination; or they could share a common ancestor with δ (possibly being contaminated too). A similar problem has already been faced in the case of R_a , and there errors were found which clearly stood midway between the true text and δ 's (CQ N.S. 28 (1978), 301-2). In the case of Esc. G there is just one such error, at V. 18. 3 *quid quod fruges percipi (percoqui Gercke) non possent . . .*, where Esc. G δ omit *non possent*, and for *percipi* Esc. G have *incipi*, δ has *inciperentur*. Obviously the latter is an attempt to restore a construction to the text found in Esc. G. Esc. G, then, seem to represent an ancestor of δ . An alternative, that we have a fluid exemplar, Esc. G being copies of δ before conjectures such as *inciperentur* were added to it, can be ruled out, because of the significant number of errors of word order in δ from which Esc. G are free, e.g.:

- IVb. 4. 2 *uastique magis*; V. 7. 2 *genus uentorum*; 9. 2 *solis occasum*; *corpuscula diutius*; 9. 5 *idem quoque*; 12. 2 *ac munimenta per quae ferebatur*.

Such transpositions are most readily accounted for if there was an intermediary between ABV and the common ancestor which they share with G.

So far the evidence suggests that G is independent of δ , but further evidence suggests that it is also contaminated from θ . Suspicions are aroused by the following facts: before VI. 18. 4 Esc. G agree with θ at three points, omitting V. 1. 3 *quia tranquillum . . . partem agitatio* (after *agitatio*), having *natura*

instead of *aura* at V. 10. 1, and omitting V. 18. 4 *dictatum* (*dictum* Z) *est*; and three times they agree with F:

V. 18. 11 *terra stare*] *tractare*; 18. 12 *nulla est terra tam longe remota*; *dominus*] *domus*.

These facts sufficed to induce Gercke and Geist to assume that this part of Esc. G, like the rest, derives from θ . The omission at V. 1. 3 is caused by homoeoteleuton, so it could be explained away as chance coincidence, yet *natura* and the omission of *dictatum est* are not to be dismissed so lightly, and indicate contamination from θ , especially since errors of θ are few and far between. There are only fourteen errors of FH in the section of text we are considering, so that the three agreements of Esc. G with them are not a negligible number. The fact that two of them are omissions need not deter one from suspecting contamination, on the grounds that no contaminator can be so foolish as to delete perfectly good words, for contaminators can be caught doing just that;⁴⁴ or their *ua-cat*, which merely records that another manuscript omits the words, is subsequently interpreted by a copyist as an order or excuse to leave them out. The three agreements of Esc. G with F gain significance when it is considered that after VI. 18. 3 they are closely related to F. So the case for contamination from θ in the first part of Esc. G is strong enough to undermine their potential as a corrective for some of δ 's errors; one can never be sure of their sincerity.

3.2 The η manuscripts

E Berlin lat. oct. 9 (s. XIII). Book order I–III, IVb–VII, IVa (as F)⁴⁵

Cam. Cambrai 939 (A.D. 1379).⁴⁶ *Grandinem* book order.

D Dublin, Trinity College 514 (s. XIII). *Grandinem*.

Paris lat. 6387 (A.D. 1381). *Grandinem*.

*Würzburg 59 (s. XV). Same book order as E.

H. Diels guessed, and G. Müller proved, that the Würzburg MS. is a copy of E.⁴⁷ The Paris MS. is a direct copy of Cam. It is dated two years later than Cam., and has similar contents.⁴⁸ In the samples I have collated, it shares errors with Cam. which do not occur in the other manuscripts of this group (II. 32. 5 *possunt*]

⁴⁴ e.g. the corrector of J (Oxford, St. John's College 36 (s. XIII)), using a θ MS., expunges III.30.6 *pluribus locis* and IVa.pr.17 *potentium*.

⁴⁵ E was collated by I. F. Herel (whose collation appears in Fickert's edition as 'e'), and by Fickert; recollated by Larisch (I–II.26), Diels (IVa.1–2), G. Müller (III–VII), and Gercke (II.27–59); and again by Oltramare. I have recollated parts of E.

⁴⁶ This manuscript is in two parts. The first, dated A.D. 1379, contains excerpts from the *Natural Questions* on fos. 32^v–36^v, and a complete text on fos. 39–127; the text of the excerpts is very similar to the full text (cf. Geist, op. cit., pp. 11–14) and will be ignored here. The second part of the manuscript, dated A.D. 1378, contains a couple of excerpts from the *Natural Questions* on fo. 169^v: I.17.4 *Inuenta sunt . . . ipsos uidendi*, and I.6.5. (The former excerpt also occurs e.g. in Paris lat. 6395A

(see p. 213), and in a paraphrase, falsely attributed to Augustine, in Schlägl 85 (s. XIV).)

⁴⁷ H. Diels, *Seneca und Lucan*, *Abh. d. K. Akad. d. Wiss. zu Berlin*, 1885, Phil.-hist. Abh. 3 (Berlin, 1886), p. 34; G. Müller, op. cit. (n. 34), pp. 5–13.

⁴⁸ The contents of Paris lat. 6387 are: Seneca, *Natural Questions*; Walter Map, *Dissuasiones Valerii ad Rufinum ne ducat uxorem*; anon., *Expositio epistulae Valerii ad Rufinum*; Mart. 10.47, 1.33; Jerome, *Contra Iovinianum*; anon., *Dicta Platonis*; *Dicta Aristotelis*. These works, preceded and followed by others, all occur in the first part of Cam., with one difference of order, namely that the Walter Map work comes after the poems of Martial, thus being separated from the *Expositio*. So if the Paris MS. is a copy of Cam., the scribe has rationalized the order by putting the *Dissuasiones* before the *Expositio*.

-int; 32. 8 *aut* (ante *immota*) om.; 34. 2 *duo ueri*] inu. ord.). Most revealing at least twice the scribe at first omits a whole line of Cam., though he soon spots his mistake and corrects it.⁴⁹

Geist, op. cit., pp. 10–14, has demonstrated the affinity between Cam. DE. They share numerous errors, including many interpolations and conjectures. Here are a few examples from Book II:

- (a) OMISSIONS. II. 9. 2 *altitudinem*; 12. 1 *et*; 13. 4 *est* (post *locus*); 32. 1 *si*; 37. 1 *et*; 59. 6 *mortem* (prius).
 (b) TRANSPOSITIONS. II. 21. 1 *habuisset* (*hausisset* E) *uirium*.
 (c) OTHER ERRORS. II. 1. 4 *uidebitur*] *uidetur*; 6. 4 *cum*] *autem*; 12. 5 *conglobatus-que*] *cum globatus est*; 29 *uocaliora*] *uerba* add.; 31. 1 *stat*] *et* add.; 49. 3 *aduocantium bono*] *ad inuocantium bonum*.

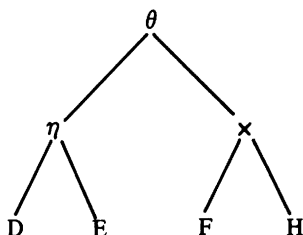
So these manuscripts share a common ancestor, η .⁵⁰ The presence of a fair number of variants within Cam.'s text suggests that an ancestor had undergone contamination, e.g.:

1. 1. 1 *ad propositum opus ueniam*] *ad propositum redeamus seu ad p-o-u* Cam.;
 2. 8 *ad* δ U: *ob* ZR θ DEP(W¹ ?): *ad ob* Cam.; V. 10. 1 *uelis*] *uentis* θ DE: *uentis uel uelis* Cam.; VII. 12. 4 *fieri*] *esse* E: *esse uel fieri* Cam.

Cam. is obviously unreliable, so DE will be used to reconstruct η . η shares many of the errors of θ , but not all of them. Thus, of the omissions of θ listed above on p. 188, η has a number, but not those at I. pr. 4; 1. 11; II. 32. 7; IVb. 5. 2; 7. 1; V. 18. 4; VI. 3. 2; 10. 2; 14. 2; 30. 2; 32. 12; VII. 29. 3. And there are other errors of FH, mostly minor, not in η :

- II. 11. 1 *qui*] *quia*; IVb. 11. 4 *tenere*] *-eri*; 13. 3 *quod* (post *possumus*)] *quid*; VI. 3. 3 *sive* (post *publice*)] *si*; VII. 12. 3 *illorum*] *illo*.

The *prima facie* implication of the errors of FH which are not in DE is that we have the following relationships:



This is essentially Gercke's view, though he had not fitted D into the picture.⁵¹

This view, however, turns out to be unsatisfactory when we turn to another group of η MSS. (all s. XIV, with traditional book order):

- r Florence, Riccardianus 391
 m Munich 23473

⁴⁹ The lines of Cam. omitted at first are IVb.13.10–11 *esse putas . . . uenarum nec* and II.35.1 *ergo expiationes . . . sunt fata*.

⁵⁰ My η is probably an ancestor of Gercke's η , which is the immediate common ancestor of the vulgares, my δ - η - η MSS. See

Gercke, *Seneca-Studien*, pp. 71–6; *Studia Annaeana*, pp. 8–9; edn., pp. xxix–xxx, xxxvi–xxxvii.

⁵¹ Gercke, *Seneca-Studien*, pp. 59–60 (where F and H are called N and Q, and θ is called μ).

p Vatican Pal. lat. 1540
v Vatican Vat. lat. 2215

These all share errors with DE, e.g.:

II. 21. 1 *uirium habuisset*] *habuisset* (*hausisset* E) *uirium*; 22. 1 *ignem*] *igneam*; VII. 8. 2 *uerbis utar*] *inu. ord.*; 9. 3 *excelsior*] *celsior*; 12. 2 *esse et sui iuris*] *et sui iuris esse*; 12. 4 *defectio siderum*] *siderum* (*-ris* E) *defectio*.

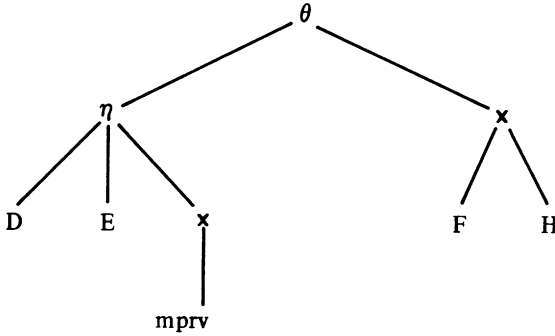
They also all share errors against DE, e.g.:

I. pr. 13 *totum* (*post quod non uides*) *om.*; pr. 14 *proposito*] *suo add.*; 1. 4 *ergo*] *et add.*; VII. 6. 2 *quoque*] *ergo*; 6. 3 *eluctantur*] *eleuantur*; 9. 3 *uidit*] *-et*.

But all are heavily contaminated. Hence the errors of θ , from which mprv ultimately derive, are not always found in all of them; e.g.:

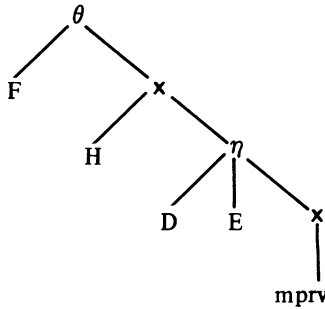
III. 30. 6 *pluribus locis* *om.* θ DEmpr; IVa. pr. 14 *paupertas*] *pauper* θ DErv.

So far, mprv seem to fit into the stemma roughly like this:



(The precise relationships of D, E, and the ancestor of mprv, are not important for present purposes.)

What is very revealing is that, whereas DE contain all that survives of Book IVa, mprv break off after IVa. 2. 19 *quippe uernis*,⁵² at the same point as H. This is a conjunctive error of Hmprv, and a separative error against F, which



⁵² The crucial folio, containing the end of Book IVa, is missing from m, but calculation shows that m probably had the same

lacuna. Taking half a dozen surviving folios of m, I have counted that they contain between 175 and 202 lines of Teubner text.

breaks off a few words later (after *diluunt*). So the stemma must be revised as above.⁵³ This means D and E must owe the end of Book IVa to a non- θ source, and where they are free from an error of FH, if their reading is unlikely to be conjecture, they must be contaminated.

The sources of the contamination may be identified with reasonable confidence by examination of their texts at the end of Book IVa. D shows an affinity to X, Exeter Cathedral 3549(B) (s. XIII; see *CQ* N.S. 28 (1978), 307–10), sharing the following readings with it:

IVa. 2. 20 *Borysthenes*] *horas tenens*; 2. 21 *tabes*] *-ens*; *autem* om.; 2. 23 *flauere* DX: *fauere* rell.; 2. 26 *crescere*] *-cit*; 2. 27 *aestate frigidi sunt*] *est antrum frigidum*; *remotos seductosque*] *-tus -tusque*.

These errors are not found in E, which however twice agrees in error with a close relative of X, namely T, Paris lat. 6386 (s. XIII; see *ibid.*):

IVa. 2. 20 *flumina possent*] *inu. ord.*; 2. 26 *imbribus flumina*] *inu. ord.*

If D and E supplied the end of Book IVa from these non- θ sources, the rest of their texts could be contaminated from the same sources. Investigation of this possibility is bedevilled by the fact that TX and related manuscripts are contaminated from an η source (see *CQ* N.S. 28 (1978), 310), which makes it hard to know in which direction the contamination has proceeded in individual cases. But in one place there is clear evidence of D being contaminated: at I. 3. 5–6 EFGH omit *deinde multas imagines . . . habebunt imaginem* (u.l. *-nes*) *solis* (after *imaginem solis*), while D has the complete text. There would of course be the possibility that D's reading was authentic, and the other manuscripts had omitted the words independently, were it not that D's text here shares conjunctive errors not only with TX (which might be contaminated with D's text), but also with TXa (for TX derive from a at this point; see *CQ* N.S. 28 (1978), 308–9): thus DTX in I. 3. 5 transpose *a singulis ergo reddi imaginem solis* to follow *euntes confundi*; and DTXa share the following errors:

3.5 *euntes*] *transeuntes*; *confusionem*] *-es*; 3. 6 *pone*] *et* add.; *guttas: singulae*] *singulas guttas* (plura om. T).

Thus it is clear that D has here been contaminated from the X-like source to which it owes the ending of Book IVa. There is no individual passage where contamination of E can be proved with equal cogency, but the general case is strong enough. So DE are unreliable and cannot be used to reconstruct θ , although they contain good conjectures which editors have rightly taken note of.

*Leiden Lipsius 37 (s. XV) contains excerpts with a text like E's; see Geist, *op. cit.*, p. 14.

4 Manuscripts of the π family

No manuscripts are known to me like U, so close relatives of P, R, and W will be dealt with in turn. On the central portion of Aberdeen 205, see n. 31 above.

The missing folio (between fos. 146 and 147) contained IVa.pr.22 *-genti spectaculo* to IVb.3.4 *rotunda fit*, 268 Teubner lines, far more than the other folios. But if m had the same lacuna as Hprv, it contained 186 Teubner lines, which is just right.

⁵³ The alternative, that DE are sincere

representatives of η at the end of Book IVa, that the ancestor of Hmrv was also a copy of η , and that the errors of η were removed from H by contamination, is not worth considering, in view of the purity of H's text, and the amount of corruption and conjecture in η .

4.1 *Manuscripts related to P*

Paris lat. 6286 (s. XIII/XIV). *Grandinem* book order.

Reims 872 (s. XIII²). *Grandinem* book order. Books VII and IVa are complete, but only the first part of each of the other books is included (namely IVb. 3–5. 1 *litigant*; V. 1–6 *explicans*; VI. 1–4. 2 *adiecerit*; I. pr.–1. 8 *trahunt*; II. 1–14. 2 *transitus*; III. pr.–13. 1 *elementum*).

In these two manuscripts, just as in P, the *Naturales Quaestiones* of Adelard of Bath follow the *Natural Questions* of Seneca.⁵⁴ The *incipits* of P and Paris 6286 are identical, and those of the Reims MS. are very similar.⁵⁵ Besides these external resemblances to P, the samples I have collated reveal many conjunctive errors shared by both manuscripts with P, e.g.:

II. 1. 1 *mundus* om.; *firmae*] *formae*; 1. 2 *motura tonitrua*] *monitura*; *iuris* om.; 2. 4 *cum* om.

Where I have noted them not sharing an error of P's, this is readily attributable to conjecture (e.g. II. 1. 1 *naturam* Reims rel.: -a PW Paris 6286; 1. 4 *an* (post *proiecta*) in add. P. Reims¹). The two manuscripts are therefore close relatives of P. Furthermore, they both have a curious error at III. pr. 2, where they read *arecidantur* for *recidantur*. Here P's reading is *recidantur* [sic], where the dot under the first *c* is of course meant to expunge the prefix *ac-*, yet it would be possible for somebody to misread it as *arecidantur*. Taken with the other evidence above, this error strongly suggests that the two manuscripts are direct descendants of P.

4.2 *Manuscripts related to R*

See CQ N.S. 28 (1978), 306–11.

4.3 *Manuscripts related to W*

Vatican Ross. 604 (s. XV; traditional book order) is probably derived from W; it generally shares uncorrected errors of W, and where W is corrected it normally has the correction. For instance, at the end of Book VII (chs. 27–32) it shares with W about two dozen significant errors, including the following:

VII. 27. 3 *et* (post *tamen*) om.; *ascendat*] *accendatur*; 30. 1 *uultum submittimus*] *-tus adm-*; 30. 2 *illos*] *esse* add.; 32. 1 *philosophum*] *-sophicum*.

Occasionally Ross. agrees with a first reading of W which has been corrected, but this is no obstacle to deriving it from W (cf. 1. pr. 7 *posterorum* W²] *-riorum* W¹ Ross.; VII. 28. 2 *compressa*] *compessa* W¹ Ross.: *compulsa* W² V). Occasionally, too, Ross. has the correct reading where W has an uncorrected

⁵⁴ There is a further possible link between the contents of Paris 6286 and P, for the former also contains, *inter alia*, Apuleius, *De deo Socratis*, and *De Platonis dogmate*, and the *Asclepius*. These works, with others, appear in Paris lat. 6634, which together with Vatican Reg. lat. 1107 and 1438, and P, at one time formed MS. HHH 22 in the library of St. Victor at Paris. (See Delisle, *Cabinet*, ii. 231–2; E. Pellegrin, *BEC* 103 (1942), 79 and 95.) So Paris 6286 may derive from the time when Paris 6634 was still bound up with P. (I am grateful to

Prof. R. H. Rouse for bringing this information about P's origins to my notice.)

⁵⁵ Paris 6286 and P have the following: Book IVb, *L. Annei Seneca de naturalibus questionibus. Liber incipit: de grandine et niue*; Book V, *Liber secundus incipit de uentis*; Book VI *Liber tertius incipit de terremotu*; Book VII, *Liber quartus incipit de cometis*; the remaining books have no title or *incipit*. Reims 872 has the same for Books IVb and VII; for V, *Liber secundus de uentis*; for VI, *Liber tertius Lucilio de terre motu*.

error, but conjecture or slight contamination in Ross. is a simple explanation (e.g. I. pr. 11 *sordidum* Ross.] *sordium* π; VII. 32. 2 *reliquerunt* Ross.] *relinqu-* W).

Vatican Reg. lat. 358 (s. XV) contains a brief set of excerpts from the *Natural Questions* with a text related to W's.⁵⁶ W, we remember, has an anomalous book order, the traditional order with Book III put before Book II. The Reginensis too has the excerpts from Book III misplaced, but in this case they are after those from Book IVb. The displacement of the book in both manuscripts might be coincidence, except that they share the following conjunctive errors:

II. 10. 1 *frigidus per se*] *per se f-*; III. 7. 1 *nec in inferiora*] *neque in -ori*; 21. 2 *existit*] *extat*; VI. 2. 3 *esse metuenda*] *inu. ord.*; 20. 5 *de*] *ex*.

One might tentatively deduce that W and the Reginensis had a common ancestor in which Book III was displaced, maybe even detached from the rest of the manuscript. The excerpts are brief, and there are signs of possible contamination from δ (cf. II. 8 *creditur ex semetipso*).

5 λ and its descendants

- J Oxford, St. John's College 36 (s. XII/XIII)
- K Cambrai 555 (s. XII)
- L Leiden Voss. lat. F. 69 (s. XII)
- O Leiden lat. 199 (s. XIII²)

Gercke established that these four manuscripts, all with the *Grandinem* order, derive from a common ancestor, λ, and the evidence will not be repeated here.⁵⁷ Furthermore Gercke and others have shown that λ is the source of the excerpts from the *Natural Questions* which occur in certain manuscripts of the *Florilegium Gallicum*, namely:⁵⁸

- *Arras 64 (65) (s. XIII). See P. Lejay, *Rév. crit. d'hist. et de litt.* 44 (1897), 196.
- *Paris, Arsenal 711 (s. XII/XIII). See Geist, op. cit., pp. 16–17.
- M Paris lat. 17903 (s. XII/XIII)

Geist, op. cit., p. 10, has also shown that in Esc. (see § 3.1) part of Book IVa is added by a second hand from a λ source.

Further descendants of λ may be mentioned briefly. Trier, Priesterseminar 66 (s. XII) is derived from λ, having virtually all the λ readings recorded in Gercke.⁵⁹ Vatican Urb. lat. 1356 (s. XV) has the traditional book order, but its text is basically derived from λ, although it is heavily contaminated from δ.⁶⁰

⁵⁶ The excerpts begin with: I.pr.6 *Auaritia quicquid omnibus abstulit sibi ipsi negat*; pr.13 *Deus est mens uniuersi. Deus est totum quicquid uidet*; pr.14 *Nostri melior pars animus*.

⁵⁷ Gercke, *Seneca-Studien*, pp. 41–8; *Studia Annaeana*, pp. 13–9; edn., pp. xxviii–xxix, xxxiv–xxxv.

⁵⁸ The excerpts begin: *Seneca in libro de naturalibus quaestionibus. De contemptu transitoriae uitae et omnium temporalium. Humano animo a bonis artibus robur uenit et contemplatione naturae* (cf.

VI.32.1). '*Quid est enim cur . . . obuiam exire.*' (VI.32.2–12) *Contra humanam curiositatem beneficiis naturae abutentem. 'Derideantur . . . factum est.'* (I.17) *De diuersis bonorum morum instructionibus. 'Inter nullos magis quam inter philosophos esse debet aequa libertas'*. (IVb.3.6).

⁵⁹ I am grateful to Dr. B. C. Barker-Benfield for drawing this manuscript to my attention.

⁶⁰ e.g. at the start of Book II there are the following λ readings: II.2.4 *sua*] *sola*; 6.3 *est uox*] *inu. ord.*; 11.1 *sic diuisus*]

Then there are various sets of excerpts. Paris lat. 16591 (s. XV) gives extensive excerpts copied from L:⁶¹ not only does the text correspond in detail with L's, incorporating the corrections of L², but there are marks in the margin of L at the point where each excerpt begins and ends. Paris lat. 6395A (s. XV) also contains excerpts derived from λ .⁶²

My collations of samples of JKLO and the Trier MS. show that the reports of λ in Gercke's edition are sufficiently full and accurate for our present purposes. A careful inspection of λ 's behaviour in his apparatus reveals that in Book IVb λ frequently agrees with δ , whereas elsewhere such agreements are much more rare. In the remaining books λ agrees with F sufficiently often to arouse suspicions that this is something more than coincidence. Thus Gercke himself had enough evidence to suggest that λ may be composite. The following analysis will show that this is in fact the case. A diagram may make things clearer:

| Book | IVb | V | VI | VII | I | II | III | IVa |
|-----------|-----------------|----------------------|----|-----|-----------------|----|-----|----------|
| | V.I.I. | V.I.I.I. | | | | | | IVa.2.19 |
| λ | $\delta(+\rho)$ | θ or ρ ? | | | $\theta(+\rho)$ | | | ρ |

In Book IVb λ shares the following errors with δ :

- (a) OMISSIONS. IVb. 9 *boc* (ante *existimet*).
 (b) TRANSPOSITIONS. IVb. 6. 1 *ineptias nostrorum omnes*; 7. 2 *uis esse potest*; 9 *citius accedet calor*; 11. 1 *soli propiora*; 11. 4 *potest dicere; locum puncti*; 11. 5 *a sole est; magnum non potest; alterum altero sit*; 12 *concipi niuem*.
 (c) OTHER ERRORS. IVb. 3. 3 *possis] poteris*; 4. 1 *quare] in add.*; 5. 3 *exquirere] in-*; 7. 3 *huius] eius*.

Also λ several times agrees with A, AB, or AV:

IVb. 3. 1 *nube tota] inu. ord. A λ* ; 6. 3 *fieri poterat] inu. ord. AB λ ; grando se] inu. ord. AB λ* ; 7.1 *et deos] etiam deos AB λ* ; 8 *prope terras est] est prope terras (-am A¹ B) AB λ* ; 11. 1 *quidam] quidem AV λ : est quod B*; 11. 4 *illa] ea AB λ* ; 11. 5 *inmensi] magni A λ* ; 13. 6 *datum est post interuallum A λ* ; 13: 10 *frigidum] est add. AB λ* .

λ shares conjunctive errors with A alone, but not with B or V alone or together; therefore it must be closer to A than to B or V, and it cannot be derived from

inu. ord.; 12.5 *eodem] autem add.*; 26.5 *usti montis] inu. ord. F λ* . But at II.6.4, *uim et uelocitatem neruis* betrays contamination from δ . A similar picture emerges from other sample collations.

⁶¹ The excerpts, with *Grandinem* book order, start with: IVb.3.3–4 *Quare autem ... cauantur aqua*; 3.6 *Quare non ... grandinem interesse*; 5.1 *Pauca enim ... uincunt litigant*.

⁶² The excerpts begin with: III.30.8 *Cito nequitia ... discuntur*; IVb.4.3 *Bruma lentas pluuias habet et tenues*; 7.1 *Tempestates munusculis redimuntur*. Examples of λ errors: III.30.8 *uirtus difficilis] inu. ord.*; I.16.3 *fecisse se] sibi fecisse*. Apart from the first excerpt, the *Grandinem* book order is followed, although the excerpts get no further than Book I.

an ancestor of δ . There are errors of δ not in λ (e.g. most of the omissions of Esc. G δ listed on p. 206), so λ must be contaminated. This is borne out by two places where λ conflates δ 's error and the true reading:

IVb. 4. 2 *aeris* (post *inclinatio*) Z ρ U: om. W: *temporis* $\delta\theta$: *temporis uel aeris* λ ; 5. 3 *algere aiunt*] *autem algent* δ : *autem algere aiunt* JK Trier 66: *autem aiunt algere* O: *autem algere* L.

In the former passage λ must have learnt the reading *aeris* from either a ζ or a π source. One other passage affords a slight indication that the source of contamination may be ρ , for at IVb. 11. 5 where δ omits *campus aut ualles* . . . *alia magis quam* (after *quam*), λ has the complete text, but reads *uallis*, like ρ . But one cannot base a theory of contamination from ρ on this passage taken in isolation, for λ might have thought the singular more natural, without recourse to another manuscript.⁶³

So in Book IVb λ is a contaminated descendant of δ . Gercke noticed a connection between δ and λ , and explained it on the hypothesis of contamination from λ in δ .⁶⁴ This is not a plausible explanation in Book IVb, because there most of the agreements are of word order. But there is a sprinkling of $\delta\lambda$ agreements in the rest of the work; the following list aims to be complete, including the places where λ agrees with one or two of ABV (so far as the individual readings of B are known to me), and places where $\delta\lambda$ appear alone together in Gercke's apparatus, although other manuscripts in fact share their reading:

I. pr. 11 *minima etiam*] inu. ord. AB λ ; II. 12. 5 *nubibus*] *ignibus* $\delta\lambda$ (cf. supra in *nostris ignibus*); 21. 2 *color*] *calor* $\delta\lambda$; III. 1. 1 *subministrat* E(W¹ ?): *-traret* Z $\theta\rho$ U: *-tret* DG $\delta\lambda$; 8 *et* (post *magnique*) om. $\delta\lambda$; 11. 2 *Coryco*] *corio* AB λ ; 12. 2 (12. 3 Gercke) *potes*] *potest* $\delta\lambda$ U; 21. 1 *temperatio*] *-antior* $\delta\lambda$; V. 12. 3 *conuerterunt*] *-tunt* $\delta\lambda$ (W¹ ?); VI. 1. 2 *prorutae*] *-ruptae* FRW: *praeruptae* $\delta\lambda$; 3. 3 *magna pars*] inu. ord. F $\delta\lambda$; 3. 4 *timendi*] *timidi* F $\delta\lambda$; 9. 2 *obrutus locis*] inu. ord. $\delta\lambda$; 14. 1 *angustiora receptacula*] inu. ord. B λ ; 23. 4 *in illas mare*] *m- in i-* A λ ; VII. 1. 7 *fuerunt*] *fuere* DEFAB λ ;⁶⁵ 6. 1 *arida umidaque*] *umida aridaque* F $\delta\lambda$; 11. 2 *fusus quidem*] inu. ord. F $\delta\lambda$.

Here the errors which are not transpositions are mostly trivial, and the agreement could be coincidental. The errors of word order are not likely all to have been passed on by contamination: the two places where just one of the δ MSS. agrees with λ (VI. 14. 1, 23. 4) are most likely chance coincidence, and one can assume the same about the five places where $\delta\lambda$ agree. So nothing is proved about contamination in δ from λ , such as is postulated by Gercke.

Several of the errors in the above list occur also in F. In fact outside Books IVb and V, λ shares about fifty conjunctive errors with F; for example, the following transpositions:

VI. 2. 7 *finibus suis*; 16. 1 *corporibusque mortuis*; 28. 1 *leniatur* (-antur F) *melior* *caelo*; VII. 21. 4 *ille uidelicet*; 24. 1 *esset stella*; 27. 4 *ceteris sit*; 32. 3 *discipuli multi*; I. pr. 12 *sit cursus*; 1. 6 *minus illas*; 2. 3 *frugibus terendis*.

Since λ shares with F these conjunctive errors, which are also separative errors

⁶³ Seneca might have used the nom. sing. form *ualles*; but *uallis* occurs at *Tro.* 1124, *Pha.* 1133, and in E at *Tro.* 178 (*tellus* A).

⁶⁴ Gercke, edn., p. xl (misprinted as lx);

cf. *Seneca-Studien*, pp. 77–8.

⁶⁵ *fuere* is wrong. S. generally uses *-re* for *-runt* in perfects to improve the clausula, and here it spoils it (*-i fuerunt uiri*); see Axelson, *Senecastudien*, p. 88.

against H, it follows that λ is a descendant of θ via the F branch; therefore it ought to have the errors of FH. In fact it only has some of them, namely:

II. 12. 3 *incurrentis*] *intocurr-*; III. 28. 2 *humanum*] *hominum* FH¹ λ ; VI. 17. 3 *Asclepiodotum*] *escl-*; 28. 2 *uoluit*] *oluit*.

The majority of θ 's errors do not appear in λ , and the explanation of this, given the close affinity to F, must be contamination. The likely source of it emerges from the following examples of errors which λ shares with P or ρ or π :

I. 3. 13 *excocta*] *-coacta* P λ ; 16. 7 *contumelia*] *-iei* P λ ; II. 37. 2 *ita* (ante *non est*)] *itaque* P λ ; 45. 1 *manu*] *sua* add. P λ ;⁶⁶ 46 *manum*] *omnibus* add. P λ ; III. pr. 2 *sarcia*] *sarcinat* P λ ; 28. 3 *prolusum*] *proclusum* (per- W) $\pi\lambda$; IVa. pr. 12 *petitur*] *petitura* add. v: *petita* add. $\rho\lambda$; VII. 26. 2 *lumini*] *-is* $\pi\lambda$; 30. 4 *aditum dat* Z $\alpha\mathcal{U}$: *dat* θ : *dat aditum* PW λ .

Taken together, these readings create a strong presumption of contamination from a source like P in λ . This is confirmed by places where only some of the descendants of λ agree with P or ρ , e.g.:

I. 2. 9 *adsilire*] *adssilire* P¹: *dissilire* P² KL, Trier 66 u.l.; 16. 3 *oblectabat*] *obdelect-* PJ¹ K² Trier 66; IVa. 2. 13 *pro partibus*] *per partes* ρ , JK u.l.; VII. 12. 6 *incursu*] *in ortu* ρ , JK u.l.

So λ contained variants taken from a P-like manuscript. So in Books VI–VII and I–IVa λ is basically derived from θ , but contaminated from ρ .

We may now hasten to administer the *coup de grâce* to λ . FH break off before the end of Book IVa, in IVa. 2. 19, so probably the θ MS. from which λ derives did the same; yet λ has the full text. Not surprisingly, at the end of the book it shares errors with P or ρ against Z \mathcal{U} (R), namely:⁶⁷

IVa. 2. 21 *aequalis*] *qualis* P λ ; 2. 22 *resederunt*] *-rit* $\rho\lambda$; 2. 24 *mendacio*] *-rio* P λ ; *licebat*] *lib-* $\rho\lambda$; 2. 26 *calidos*] *cauosos* $\rho\lambda$.

Indeed, after IVa. 2. 19 the only error of P which is not found in λ is 2. 28 *Duogenes* for *Diogenes*, where emendation would have been no problem.

The only part of λ not yet analysed is Book V, where there are no significant agreements with F, but about a dozen with ρ or π , e.g.:

V. 7. 1 *excutere*] *dis-* $\rho\lambda$; 9. 2 *diurnus*] *diuturnus* $\rho\lambda$; 12. 4 *in om.* $\pi\lambda$; 13. 3 *pretera*] *postam* P λ : *postera* R; 13. 4 *contulit*] *in-* $\rho\lambda$.

The plainest interpretation of these readings is that λ is copied from its ρ source in Book V; although here too it might be basically copied from its θ source. Nothing hangs on the issue, for it is long since apparent that λ is a compilation of δ , θ , and ρ , and of no stemmatic value. Its banishment from the apparatus is some reward for this prolonged analysis.

6 Other manuscripts

Some excerpts are so brief or so corrupt, or both, that their origin cannot be determined with certainty. Such are those in Vatican Borghese 188 (s. XIII/

⁶⁶ *sua* ought never to have been introduced into the text by Gercke.

⁶⁷ At the end of Book IVa the only manuscripts which count are ZPRUW.

Gercke gives a very distorted view of the tradition at this point, for he treats all Z's true readings as conjectures.

XIV)⁶⁸ and Paris lat. 8545 (s. XIV).⁶⁹ Indiana MS. 1 (de Ricci and Wilson; s. XIV) contains only III. pr. 1-27. 7 *greges*. The samples I have collated do not make it clear whether this is a δ text heavily contaminated from elsewhere or some other form of text heavily contaminated from δ ; but it matters little. I have not looked at the excerpts from the *Natural Questions* taken from Vincent of Beauvais's *Speculum Historiale*; they are found in *Avignon 357 (s. XV) and *Berne 161 (s. XIV). I know nothing about the excerpts in *Breslau Bernhardinus 1604 (s. XV), *Erlangen Universitätsbibl. 625 (A.D. 1460), *Madrid, Bibl. del Palacio, II L 258 (2. J. 3) (s. XV), or *Madrid, Bibl. Nac. 234 (s. XIII/XIV); maybe one or other of the last two is the Madrid MS. of the *Florilegium Gallicum* mentioned by P. Lejay, *Rév. crit. d'hist. et de litt.* 44 (1897), 196.

Of the numerous manuscripts cited in the early editions little needs to be said. There is no trace among them of Z or any manuscript like it. F. Haase⁷⁰ rightly discerned that two of them, the Memmianus of Opsopoeus and a manuscript cited by Bongarsius,⁷¹ stand out from the others: this is because they are basically independent of δ , whereas the other manuscripts known to early editors were either of the composite δ type or else heavily contaminated from δ , so far as one can tell. The Memmianus, as Gercke saw,⁷² is close to P; but its readings also betray contamination from δ , which diminishes its interest. As for Bongarsius, he cites at least two manuscripts, not always, one suspects, carefully distinguishing between them; one is his own, the other belonged to Cuicius. The latter is interesting because it is very similar to R: its readings tally closely with R's (e.g. II. 9. 2 *crescens*] *crocum*; 54. 3 *teritur*] *currit*; neither of these readings is in Paris 6385, on which see *CQ* N.S. 28 (1978), 306-7); but, if Bongarsius' reports can be trusted, it does diverge from R (II. 12. 6 *antecedit*] *ante cedem* R: *antecedens* Bong. ex Cui.), so it is not R itself.

Some of the remaining manuscripts in early editions can be identified with extant manuscripts by means of marks of ownership, etc. on the latter: Gruter's Palatinus tertius is Vatican Pal. lat. 1540;⁷³ Scaliger's MS. is Wolfenbüttel 4315;⁷⁴ Lipsius' MS. is Holkham Hall 390 (see p. 203). Others can be identified or associated with extant manuscripts because their readings tally closely: Dalecampius' MS. is perhaps Leiden 199;⁷⁵ Gruter's Palatinus quartus is probably Vatican Pal. lat. 1541 (see p. 204); his Fragmentum Coloniense is similar to E;⁷⁶ his Coloniensis agrees regularly with Balliol 130 (see p. 204) which was probably copied at Cologne in the mid-fifteenth century,⁷⁷ so it is perhaps a twin or copy of Gruter's MS.; and the Regius or Britannicus of Gronovius is probably Royal

⁶⁸ Borghese 188, fo. 77, has, amongst excerpts from other works, the quotations from Ovid and Lucretius at IVb.3.4, and II.31.1-2 *Ceterum mira . . . omne consumitur*. The only tenuous clue to origins is II.31.2 *adnotandum* (= $\pi\lambda$).

⁶⁹ The excerpts, in traditional book order, begin: I.pr.5 *O quam contenta res est homo non supra humana surrexerit*; pr. 6 *Intus (Virtus Ω) ista quam . . . cognitionem caelestium*; pr.11 *Punctum est . . . regnatis*. There are a number of δ errors, but it is not clear whether the manuscript derives from δ , or is just contaminated from it.

⁷⁰ F. Haase, ed., *L. Annaei Senecae opera* (3 vols., Leipzig, 1852), II, p. iv.

⁷¹ In the margin of his copy of Seneca; see Fickert, op. cit. (n. 13) II, p. xviii.

⁷² *Seneca-Studien*, pp. 48-9; *Studia Annaeana*, p. 26; edn., p. xxxv.

⁷³ See pp. 209 ff.; Gercke, edn., p. xxxviii.

⁷⁴ See p. 204; C. R. Fickert, *Prolegomena in nouam operum L. Annaei Senecae philosophi editionem*, I (Leipzig, 1839), 38-9, 50; Gercke, *Seneca-Studien*, p. 18.

⁷⁵ See p. 212; Gercke, *Seneca-Studien*, p. 37.

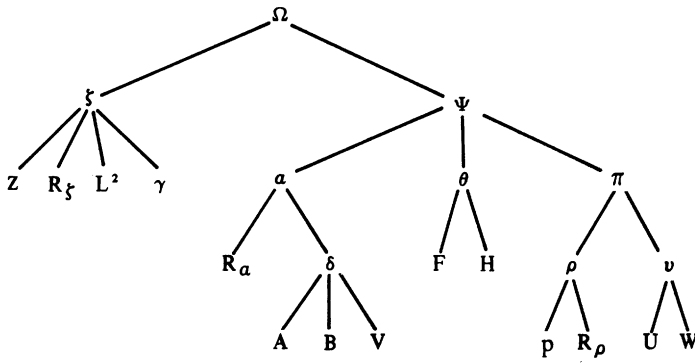
⁷⁶ Gercke, *Seneca-Studien*, p. 57.

⁷⁷ See R. A. B. Mynors, *Catalogue of the manuscripts of Balliol College Oxford* (Oxford, 1963), p. 108.

5 D. X or a similar manuscript (see p. 203). Of the remaining manuscripts which are lost or unidentified none shows any signs of being interesting.⁷⁸

D. CONCLUSIONS

Of the manuscripts discussed in § C, only L^2 and γ are of stemmatic value, for they make modest contributions to the reconstruction of ζ . None of the other manuscripts add to what can be discovered about $\zeta a \theta \pi$ with the ten manuscripts discussed in § B. So, for practical purposes, the final stemma is as follows (with the reservations about the relationship of $a \theta \pi$ expressed on p. 201):



This stemma provides no more than a sound starting-point for establishing the text since, as we have seen, the stemmatic method is not rigidly applicable; and manuscripts of no stemmatic value sometimes contain good conjectures.

Since none of the manuscripts predates the twelfth century, it is scarcely surprising that they contain much conjecture; and perhaps it does seem surprising that there is not more contamination, of which there are possible signs in π , U , and W , but not elsewhere among the ten most useful manuscripts. Yet, supposing the *Natural Questions* were only rediscovered around the start of the twelfth century, and were rapidly disseminated, it is understandable that there was not much contamination in the early stages.

Doubtless there are surviving manuscripts of the *Natural Questions* which have eluded my searches, and the examples of U and W show that late manuscripts may be of value. The most exciting find would be another complete representative of ζ , and it would be useful to have a complete manuscript like R_a . But the main desideratum is a new edition in which Z is promoted and δ is demoted to its rightful place.

University of Edinburgh

HARRY M. HINE

⁷⁸ They are: those cited by Fortunatus and Erasmus; Casaubon's MS., cited by Gruter; the Chiflerianus, Troncianus, and others of Dalecampius. Fortunatus does not identify individual manuscripts, so it is impossible to trace them. Erasmus' Britannicus shares some readings with D , but in the case of this and the others, too few readings are cited for a reliable investi-

gation of their affiliations. Note that the identification of the Nicotianus of Opsopoeus with an extant Nicotianus, namely A (see Gercke, *Seneca-Studien*, p. 11), may be a mistake, for one of the few of its readings which are recorded does not tally with A : II.18 *crassum*] *cussum* A : *quassum* Nicot. If different from A , the lost Nicotianus was not much different.