

## SENECA AS A SOURCE FOR EARLIER THOUGHT (ESPECIALLY METEOROLOGY)\*

In his philosophical works Seneca often refers to the views of his predecessors, and sometimes is the sole or the earliest authority for what he says about them, which makes it important for the student of earlier thought to know whether what he says is likely to be true. This I believe can be roughly assessed—and this paper is an attempt to do it—by considering how reliable he is in places where he can be checked: that is, in places where he refers to earlier writings which survive. I shall be principally concerned with his *Naturales Quaestiones* (hereafter *N.Q.*) and with early meteorology: with considering how accurately Seneca reports Aristotle's *Meteorologica* (hereafter *Mete.*), and trying to estimate therefrom the reliability of his statements about pre-Socratic meteorology; but I believe that my conclusions should also be applicable to what Seneca says on later thinkers and other subjects.

My aim is to determine how accurately Seneca's statements represent *the original views of the thinkers he names in the passages I shall discuss*: that is, mainly, Aristotle, Plato, and the pre-Socratics. This is not the same as inquiring how faithfully Seneca has followed his own sources, because in many places his source must be, not the actual writings of the thinker he is talking about, but some intermediary; I am concerned with the whole process that has intervened between the writings, or oral statements, of the original author, and what we find in Seneca. Usually we can only guess what source Seneca was using, and whether his demonstrable inaccuracies are due to himself or his source. But, where Seneca quotes the view of an author who survives, we can determine with some objectivity how close what Seneca says is to what the original author said; we can do this regardless of what immediate source Seneca was using; and it provides an indication of how accurate his statements about lost authors are likely to be. To determine Seneca's accuracy in quoting surviving authors, as objectively as possible, is the first aim of my inquiry.

In drawing conclusions from this we must of course make allowance for the different sources Seneca is likely to have used for the different authors and subjects he wrote about: a citation taken from the actual work of the author cited would almost certainly be more reliable than one derived from a subsequent doxography or commentator. I must therefore also discuss (or, at least, speculate about) what sources Seneca used and how he used them.

My main concern is whether Seneca reports accurately the content of earlier theories, not whether he is verbally accurate. I shall not point out where his accounts of earlier theories are incomplete (except where he omits essential

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text of book II, and owe much to his very thorough commentary.

For other books of Seneca's *Naturales Quaestiones* I have mainly used P. Oltramare's Budé edition (Paris, 1961; cited as 'Oltramare'), and for Aristotle's *Meteorologica* the Loeb edition of H. D. P. Lee (London, 1952).

parts of theories he does describe), because incompleteness is unlikely to mislead us about lost authors: no one will assume that Posidonius had no explanation of lightning because *N.Q.* 2.54 tells only how he explained thunder.

In much of what follows I shall seem to be blaming Seneca for citing earlier authors inaccurately. But to blame Seneca is not my intention: I do not wish to suggest that his quotations and citations and references to previous authors are not perfectly adequate for the purposes he had in mind. What I want to assess is their value for a purpose he can never have dreamed of, but which is important to modern scholars, of reconstructing the works of lost authors from what Seneca says about them. It is we, not Seneca, who take chunks of Seneca from their contexts and call them 'fragments' of (say) Posidonius; what I want to discuss is whether, and to what extent, we are justified in doing so.

What follows is in four parts. In the first and second I consider how reliable Seneca is in reporting Aristotle's *Mete.*, and other surviving works of Plato and Aristotle; in the third I discuss whether Seneca is more or less reliable than other late writers, particularly doxographic writers like Aetius in their reports of pre-Socratic meteorological theories; and in the fourth part I try to apply my conclusions to some reports of Seneca about the earliest pre-Socratics.

# I. SENECA'S REPORTS OF ARISTOTLE'S METEOROLOGY<sup>1</sup>

Seneca cites Aristotle's views in nine passages of *N.Q.* One—7.30.1—is a statement about religion which (according to Oltramare ad loc.) refers to no known passage of Aristotle; the other eight all reflect identifiable passages of *Mete.* I begin with the most accurate.

## *N.Q.* 2.12.4—6. *Thunder and lightning*<sup>2</sup>

2.12.4: Duae partes mundi in imo iacent, terra et aqua. Utraque ex se reddit aliquid: terrenus vapor siccus est et fumo similis, qui ventos, fulmina, tonitrua facit; aquarum halitus umidus est, in imbres et nives cedit.

Cf. *Mete.* 341<sup>b</sup>7 ff.: τὴν ἀναθυμίασιν ἀναγκαῖον γίγνεσθαι μὴ ἀπλὴν, ὥς τινες οἴονται, ἀλλὰ διπλὴν . . . τὴν μὲν τοῦ ἐν τῇ γῇ καὶ ἐπὶ τῇ γῇ ὑγροῦ ἀτμίδα, τὴν δ' αὐτῆς τῆς γῆς οὔσης ξηρᾶς καπνώδη.  
(For the dry exhalation causing wind and thunder etc., see *Mete.* 2.4 and 9; for the wet one causing rain and snow, see *Mete.* 1.9 and 11.)

Thus far Seneca is entirely accurate.

5: Sed siccus ille terrarum vapor, unde ventis origo est, cum coacervatus est, coitu nubium vehementer a latere (?) eliditur;<sup>3</sup> deinde vi

369<sup>a</sup>25—9: ὅση δ' ἐμπεριλαμβάνεται τῆς ξηρᾶς ἀναθυμιάσεως ἐν τῇ μεταβολῇ ψυχομένου τοῦ ἀέρος, αὕτη συνιόντων τῶν νεφῶν ἐκκρίνεται,

<sup>1</sup> The most detailed study I know is that of A. Brennecke, *Animadversiones ad fontes Naturalium Quaestionum Senecae* (Diss. Greifswald 1913; cited as 'Brennecke').

<sup>2</sup> I must acknowledge much help from Hine, pp.387—402.

<sup>3</sup> Cf. αὕτη . . . ἐκκρίνεται. 'A latere eliditur' (Oltamare's reading) I take to

mean 'is squeezed out by pressure from the side as clouds come together', i.e. by the clouds exerting pressure from both sides on the exhalation at right angles to its resultant motion (. . . ἐκθλιψιν, οἷον οἱ πυρῆνες οἱ ἐκ τῶν δακτύλων ἐκπηδῶντες, *Mete.* 369<sup>a</sup>22—3). But Hine, p.391, points out that 'a latere' is not found in the

latus<sup>1</sup> nubes proximas feriet. Haec  
plaga cum sono incutitur . . .

βία δὲ φερομένη καὶ προσπίπτουσα  
τοῖς περιεχομένοις νέφεσι ποιεῖ  
πληγὴν, ἥς ὁ ψόφος καλεῖται βροντή.

In Aristotle's theory, dry exhalation is trapped in clouds as they condense with cold, and then, contrary to its normal upward motion, it is ejected downwards by the clouds as they condense and contract further.<sup>2</sup> It causes thunder by striking the clouds which surround<sup>3</sup> those by which it is ejected. Seneca is roughly right, but fails to explain how the exhalation is trapped, and seems to think, wrongly, that its motion is initiated by clouds colliding.<sup>4</sup>

. . . qualis in nostris ignibus redditur,  
cum flamma vitio lignorum virentium  
crepat; et illic enim spiritus habens  
aliquid umidi secum conglobatusque  
rumpitur flamma.

369<sup>a</sup>29–35: γίγνεται δ' ἡ πληγὴ  
τὸν αὐτὸν τρόπον . . . τῷ ἐν τῇ φλογὶ  
γιγνομένῳ ψόφῳ . . . γίγνεται δ'  
ὅταν ἡ ἀναθυμίασις εἰς τὴν φλόγα  
συνεστραμμένη φέρεται, ῥηγνυμένων  
καὶ ξηραυομένων τῶν ξύλων.

Seneca gives us Aristotle's analogy of burning wood, and his explanation—that a mass of *spiritus*, partly moist, encounters flame and is broken by it—could be a roughly correct explanation of an obscure expression in Aristotle.<sup>5</sup>

Eodem modo spiritus ille, quem  
paulo ante exprimi collis nubibus  
dixi, impactus aliis nec rumpi <nec  
\*\*\*> silentio potest. (6) Dissimilis  
autem crepitus fit ob dissimilitud-  
inem nubium, quarum aliae maiorem  
sinum habent, aliae minorem.  
Ceterum illa vis expressi spiritus  
ignis est qui fulgurationis nomen  
habet, levi impetu accensus et vanus.

369<sup>a</sup>35–b2: οὕτως γὰρ καὶ ἐν τοῖς  
νέφεσι ἡ γιγνομένη τοῦ πνεύματος  
ἐκκρίσις πρὸς τὴν πυκνότητα τῶν  
νεφῶν ἐμπίπτουσα ποιεῖ τὴν βροντὴν.  
παντοδαποὶ δὲ ψόφοι διὰ τὴν  
ἀνωμαλίαν τε γίνονται τῶν νεφῶν  
καὶ διὰ τὰς μεταξὺ κοιλίας . . .  
b4–6: τὸ δὲ πνεῦμα τὸ ἐκθλιβόμενον  
τὰ πολλὰ μὲν ἐκ πυροῦται λεπτῇ καὶ  
ἀσθενεῖ πυρώσει, καὶ τοῦτ' ἔστιν ἡν  
καλοῦμεν ἀστραπὴν.

Ante autem videmus fulgorem quam  
sonum audimus, quia oculorum  
velocior sensus est et multum aures  
antecedit.

b7–9: (lightning) γίγνεται . . .  
ὕστερον τῆς βροντῆς· ἀλλὰ φαίνεται  
πρότερον διὰ τὸ τὴν ὄψιν προτερεῖν  
τῆς ἀκοῆς.

reliable manuscripts, which have 'alterum'; this makes no sense, and he reads 'actarum' (conjectured by Brennecke, p.37). I prefer 'a latere', as closer to Aristotle.

<sup>1</sup> 'Vi latus' Gronovius, for MSS. 'ut' or 'ubi latius'. See Hine, pp.391 f.

<sup>2</sup> See 369<sup>a</sup>16–25, besides the lines quoted.

<sup>3</sup> περιεχομένοις (middle, 'holding themselves around', unless E. W. Webster's περιέχουσι is right—see *The works of Aristotle translated*, ed. W. D. Ross, vol. 3, Oxford, 1931). Hine, pp.393–5 (though admitting most scholars interpret as I do) thinks 'the surrounding clouds' means the clouds which originally surrounded the

exhalation; but this is surely wrong: those clouds set the exhalation in motion (see n.3, p.410), so how can it be borne violently against them?

<sup>4</sup> As Hine points out, this appears from 'exprimi collis nubibus' (see below), whatever the correct reading and interpretation of 'coitu . . . eliditur'.

<sup>5</sup> Seneca turns ἀναθυμίασις into *spiritus*, reasonably, since exhalation causes wind; and Aristotle's explanation does involve a mass of the stuff encountering flame; but Aristotle says nothing of moisture, nor of exhalation bursting. (I have been much helped by Hine's commentary here.)

Seneca errs in some details here, and omits others (as I have done in quoting *Mete.*), but what he says is broadly correct. In the whole passage he reproduces most of Aristotle's basic theory accurately, and much of his detail.

*N.Q.* 1.3.7–8. *Rainbows*

1.3.7: Ab omni, inquit, levitate acies radios suos replicat; nihil autem est levius aqua et aere; ergo etiam ab aere spisso visus noster in nos redit. Ubi vero acies hebes et infirma est, qualislibet aeris ictu deficiet. Quidam itaque hoc genere valetudinis laborant ut ipsi sibi videantur occurrere, ut ubique imaginem suam cernant. Quare? Quia infirma vis oculorum non potest percurrere ne sibi quidem proximum aera, sed resilit.<sup>2</sup>

*Mete.* 373<sup>a</sup> 35–<sup>b</sup> 9: ἀνακλωμένη μὲν οὖν ἡ ὄψις ἀπὸ πάντων φαίνεται τῶν λείων, τούτων δ' ἐστὶν καὶ ἀήρ καὶ ὕδωρ. γίγνεται δ' ἀπὸ μὲν ἀέρος, ὅταν τύχῃ συνιστάμενος.<sup>1</sup> διὰ δὲ τὴν τῆς ὕψεως ἀσθένειαν πολλάκις καὶ ἄνευ συστάσεως ποιεῖ ἀνάκλασιν, οἷον ποτε συνέβαινε τινι . . . ἀεὶ γὰρ εἰδῶλον ἐδόκει προηγείσθαι βαδίζοντι αὐτῷ ἐξ ἐναντίας βλέπον πρός αὐτόν . . . οὕτω γὰρ [sc. ἡ ὄψις] ἀσθενής ἦν . . . ὥστ' ἐνοπτρον ἐγίγνετο καὶ ὁ πλησίον ἀήρ, καὶ οὐκ ἐδύνατο ἀπωθεῖν.

There are here minor discrepancies between Seneca and Aristotle (listed by Brenneke pp.26–7), but Seneca gives the gist of Aristotle's theory accurately.

8: Longe autem magis visum nobis nostrum remittit aqua,<sup>3</sup> quia crassior est et pervinci non potest, sed radios luminum nostrorum moratur et eo unde exierunt reflectit. Ergo, cum multa stillicidia sint, totidem specula sunt, sed, quia parva sunt, solis colorem sine figura exprimunt.

373<sup>b</sup> 13–27: ἀπὸ δὲ ὕδατος μάλιστα ἀνακλᾶται, καὶ ἀπὸ ἀρχομένου γίγνεσθαι μᾶλλον ἔτι ἢ ἀπ' ἀέρος· ἕκαστον γὰρ τῶν μορίων ἐξ ὧν γίγνεται συνισταμένων ἡ ψακὰς ἐνοπτρον ἀναγκαῖον εἶναι μᾶλλον τῆς ἀχλὺς. ἐπεὶ δὲ καὶ δῆλον . . . ὅτι ἐν τοῖς τοιούτοις [i.e. μικροῖς, cf. 372<sup>a</sup> 32 ff.] ἐνόπτροις τὸ χρῶμα μόνον ἐμφαίνεται, τὸ δὲ σχῆμα ἄδηλον, ἀναγκαῖον . . . τὴν ἀνάκλασιν . . . γίγνεσθαι ἐμφασιν χρώματος, οὐ σχήματος . . . τῆς δ' ἐξ ἀπάντων αὐτῶν [i.e. τῶν ἐνόπτρων] συνεχείας τοῦ μεγέθους ὀρωμένης, ἀνάγκη συνεχὲς μέγεθος τοῦ αὐτοῦ φαίνεσθαι χρώματος.

Deinde, cum in stillicidiis innumerabilibus et sine intervallo cadentibus reddatur idem color, incipit facies esse non multarum imaginum et intermissarum, sed unius longae atque continuae.

Seneca here does not quite maintain the accuracy with which he began: he entirely ignores a point Aristotle states at some length, that rainbows occur when raindrops are *beginning* to form, ὅταν . . . ἤδη . . . συνιστῆται εἰς ψακὰς ὁ . . . ἀήρ, μήπω δὲ ὕη.<sup>4</sup> In 1.3.9–10, and perhaps even in what follows that, Seneca

<sup>1</sup> i.e. 'condensing to water', cf. <sup>b</sup> 14–16.

<sup>2</sup> Kroll's conjecture for 'resistit'.

<sup>3</sup> So Haase, for MSS. 'itaque'.

<sup>4</sup> See 373<sup>b</sup> 14–21. As Brenneke pp.28–9 points out, Seneca has already spoken of the effect of raindrops in causing rainbows

seems still to be talking about the same theory, but what he says has little or no relation to *Mete*.

Nevertheless, *N.Q.* 2.12.4–6 and 1.3.7–8 are two passages where Seneca reports Aristotle's views at length, in detail, and with considerable accuracy: they create a presumption that Seneca had read *Mete*.<sup>1</sup> if he had not, the source he was using must have been a very good one. Elsewhere (with one brief exception) Seneca is much less accurate. Either his whole citation is only a rough paraphrase of the original, or only part of it is accurate (or it is briefer than it appears to be, much of what looks like part of the citation being actually Seneca's own).

*N.Q.* 6.13.1. Aristotle's and Theophrastus' theory of earthquakes

This is merely a rough paraphrase of Aristotle:<sup>2</sup>

Semper aliqua evaporatio est e terra, quae modo arida est, modo umido mixta;<sup>3</sup> haec ab infimo edita et in quantum potuit elata, cum ulteriore locum in quem exeat non habet, retro fertur atque in se revolvitur; deinde rixa spiritus reciprocantis iactat obstantia et, sive interclusus sive per angusta enisus est, motum ac tumultum ciet.

Seneca is right to say that, for Aristotle, earthquakes are due to exhalation, which he also calls *πνεῦμα* (Seneca's *spiritus*);<sup>4</sup> but nothing in Aristotle corresponds to 'cum ulteriorem . . . habet', nor does Aristotle state that wind borne back into the earth 'fights' other wind there; and, though he does mention wind's confinement in a narrow space as a cause of earthquakes (*Mete*. 366<sup>b</sup> 10 ff.), he clearly regards it as only causing some of them. (As Brennecke, pp.44–5, points out, Aristotle's account in *Mete* 2.8 is much too long for Seneca to reproduce it in detail.)

My next four reports of *Mete*. share the feature that Seneca starts by reporting Aristotle more or less accurately, and then diverges or drifts away from him. (We have already seen one instance of this at 1.3.7 ff.)

*N.Q.* 1.1.7–9. Shooting stars etc.

'Aristoteles rationem eiusmodi reddit. Varia et multa terrarum orbis expirat, quaedam umida, quaedam sicca, quaedam calentia, quaedam concipiendis ignibus idonea. Nec mirum est si terrae omnis generis et varia evaporatio est' etc. Here the second sentence is just recognizable as a paraphrase of Aristotle's exhalation theory:<sup>5</sup> Aristotle believed in two exhalations, of which one is wet, and the other hot, dry, and inflammable. The remainder of 1.1.7–9 (not here quoted) explains shooting stars etc. and appears to be from Aristotle (since 'Aristoteles . . . reddit' implies this is Aristotle's theory of shooting stars, not just exhalation); but it corresponds to nothing in *Mete*., save for the bare fact that Aristotle did believe

in 1.3.5–6 (connecting this with 1.3.7 by 'Aristoteles idem iudicat'). But not even 1.3.5–6 speaks of raindrops beginning to form.

<sup>1</sup> This is reinforced by the fact that 2.12.3, reporting Anaxagoras and (apparently) Empedocles, is evidently derived from *Mete*. 369<sup>b</sup> 12 ff., which follows my quotation on p.411. (See below, p.428 and n.1.)

<sup>2</sup> There is not enough evidence to show how accurately Seneca is reporting

Theophrastus.

<sup>3</sup> A less accurate statement of Aristotle's exhalation theory than in 2.12.4 (see p.410).

<sup>4</sup> *Mete*. 2.8. (Seneca does not state clearly which exhalation is cause; but nor, in this chapter, does Aristotle. Theoretically, dry exhalation causes wind (360<sup>b</sup> 10 ff. etc.), which causes earthquakes (366<sup>a</sup> 3 f. etc.); but in 2.8 moisture is also involved in producing the exhalation to which earthquakes are due (365<sup>b</sup> 24–7, 366<sup>b</sup> 9 f.).

<sup>5</sup> Cf. *Mete*. 341<sup>b</sup> 7 ff., quoted on p.410.

shooting stars to be due to his dry, fiery exhalation. Seneca's main concern in this chapter is to expound his own general theory of these phenomena, not to describe other people's; and he claims only to tell the *sort* of theory Aristotle gave ('eiusmodi'): it is not surprising that what he gives is more a theory of his own, based on Aristotle's, than Aristotle's theory itself.

*N.Q. 7.5.4. The comet which appeared when Helice and Buris were destroyed*

'Aristoteles ait non trabem illam sed cometen fuisse; ceterum ob nimium ardorem non apparuisse sparsum ignem sed procedente tempore, cum iam minus flagraret, redditam suetam<sup>1</sup> cometis faciem.' Here the only thing correctly reported from *Mete.* is that Aristotle calls this phenomenon a comet (343<sup>b</sup>1)—his description (343<sup>b</sup>18 ff.) is quite different. Seneca adds (in *oratio recta*) that, among other notable features, 'ut ille fulsit in caelo, statim supra Burin et Helicen mare fuit', and then inquires whether Aristotle thought all *trabes* were comets. Of these additions, only the mention of the tidal wave recalls *Mete.* (343<sup>b</sup>2). Seneca in this chapter is discussing the nature of *trabes* (Greek δοκοί<sup>2</sup>), which our texts of *Mete.* nowhere mention.<sup>3</sup> He implies that Callisthenes thought the phenomenon seen when Helice was destroyed was a *trabes* (7.5.3), and that a *trabes* is unlike a comet in that its light is not 'sparsus' (7.5.5): he wants to relate Aristotle's statements to this context, and so (perhaps) makes Aristotle mention *trabes*, and modifies his statement that the phenomenon was not visible the first day but was the next (343<sup>b</sup>20 f.) into the sentence I quote from 7.5.4;<sup>4</sup> alternatively, he has confused Aristotle's view with someone else's. In either case he is a bad source for Aristotle's theory.

*N.Q. 1.8.6–7. The times when rainbows occur*

'Aristoteles ait post autumnale aequinoctium qualibet hora diei arcum fieri; aestate non fieri, nisi aut incipiente aut inclinato die. Cuius causa manifesta est'; Seneca then gives two explanations, which we might assume to be Aristotle's. The fact is correctly reported from Aristotle: *Mete.* 377<sup>a</sup>11–5, ἐν μὲν ταῖς ἐλάττωσις ἡμέραις ταῖς μετ' ἰσημερίαν τὴν μετοπωρινὴν ἐνδέχεται αἰεὶ γίγνεσθαι ἴριον, ἐν δὲ ταῖς μακροτέραις ἡμέραις . . . περὶ μεσημβρίαν οὐ γίγνεται ἴρις. But Seneca's first explanation is totally different from Aristotle's, and his second only roughly similar.<sup>5</sup> Again, Seneca has quoted Aristotle for one sentence only. Here, however, we should not blame Seneca for his inaccuracy. He does *not* say that his explanations of *why* rainbows do not occur at midday in summer (as opposed to the fact that they do not) is taken from Aristotle: if we suppose that he is meaning to give Aristotle's explanation, the error is ours, not Seneca's. But, if we lacked other evidence, we should probably assume that the explanations *were* Aristotle's, or were meant to be: the passage provides a warning to us not to assume that a quotation, or apparent quotation, is more extensive than it actually is.

<sup>1</sup> 'Suetam' Garrod; MSS. 'suam'.

<sup>2</sup> Pliny *N.H.* 2.96.

<sup>3</sup> But perhaps we should read that the phenomenon ἐκλήθη δοκός, for the (surprising) ὁδός of *Mete.* 343<sup>b</sup>23. However, neither manuscripts nor ancient commentators support this, nor would it justify Seneca's 'Aristoteles ait non trabem . . .

fuisse'.

<sup>4</sup> For another attempt to derive Seneca's statement (indirectly) from *Mete.* see Brennecke, pp.46 f.

<sup>5</sup> See Brennecke, pp.29–30. Aristotle's explanation must have been too mathematical for Seneca.

*N.Q.* 7.28. *Comets as weather-signs*

7.28.1: 'Aristoteles ait cometas significare tempestatem et ventorum intemperantiam atque imbrum.' Seneca is arguing that comets are astronomical (not meteorological) phenomena, and so adds (7.28.2) 'Hoc ut scias ita esse, non statim cometes ortus ventos et pluvias minatur, ut Aristoteles ait, sed annum totum suspectum facit'. In 28.3 he adds, evidently to justify this: 'Fecit hic cometes qui Paterculo et Vopisco consulibus apparuit, quae ab Aristotele Theophrastoque sunt praedicta' (he mentions *tempestates* and earthquakes). In fact, *Mete.* 344<sup>b</sup> 19 ff. says that comets signify wind and *drought*, and that, when comets are frequent, *ξηροὶ καὶ πνευματώδεις γίγνονται οἱ ἐναυτοί*. Thus Seneca's first sentence ends wrongly, and 7.28.2 seems erroneous.<sup>1</sup> That comets signify earthquakes can be paralleled from *Mete.*,<sup>2</sup> but it is not clear whether Seneca means to attribute this to Aristotle.<sup>3</sup> Seneca is certainly wrong in part, and perhaps only the first part of his first sentence is right in what he attributes to Aristotle.<sup>4</sup>

Seneca's statement that, to Aristotle, comets signify rain has been explained<sup>5</sup> by supposing that he learned of Aristotle's view from Posidonius, and has confused it with Posidonius' own addition to the theory, that the disappearance of comets signifies rain.<sup>6</sup> This I find unsatisfactory: Posidonius' view does not explain Seneca's saying 'cometes *ortus* . . . pluvias minatur'. But I can suggest no alternative reason for Seneca's error; that comets signify wind etc. 'statim' he perhaps attributes to Aristotle because he thinks Aristotle's meteorological view of comets implies it.

*N.Q.* 1.1.2. *Caprae*

'Aristoteles quoddam genus horum [i.e. shooting stars and the like] capram vocat'; he goes on to express surprise that 'Aristoteles globum ignis appellaverit capram'. He is reporting *Mete.* 341<sup>b</sup> 3, 28, 31, I think correctly; for it seems pernicky to complain, as some do,<sup>7</sup> that *Mete.* 341<sup>b</sup> 3 speaks only of οἱ καλούμενοι ὑπὸ τῶν . . . αἰγες, when at 31 he says αἰξ καλεῖται with no suggestion that he would not use the term himself.

In all the eight passages just discussed Seneca's ultimate source must have been *Mete.*,<sup>8</sup> and before he wrote *N.Q.* 1.3.7–8 and 2.12.4–6 he must surely have read

<sup>1</sup> Since Seneca seems to mean that Aristotle said 'statim cometes . . . minatur', but that *in fact* 'annum totum suspectum facit'. However, he could mean that Aristotle said 'non statim cometes . . . minatur, sed annum totum' etc. This seems forced, but would be nearly correct; Brennecke, p.48, seems to understand Seneca thus.

<sup>2</sup> 344<sup>b</sup> 34 ff., the 'great comet' (that of *N.Q.* 7.5.4) coincided with high wind; 368<sup>b</sup> 6 ff., the winds then caused an earthquake; cf. 343<sup>b</sup> 1 f.

<sup>3</sup> Seneca is of course thinking, as was Aristotle, of the view that wind causes earthquakes.

<sup>4</sup> As to Theophrastus, the spurious *De signis* (34) says that comets ὡς τὰ πολλὰ πνεύματα σημαίνουσιν, ἐὰν δὲ πολλοὶ καὶ αὐχμόν. This adds nothing.

<sup>5</sup> See Oltramare ad loc.; Brennecke, pp.49 and 50.

<sup>6</sup> F131a Edelstein-Kidd, lines 33–6 (from Scholia to Aratus 1091): κατὰ . . . τὰς φάσεις αὐτῶν [i.e. comets] καὶ πάλιν διαλύσεις τροπὰς γίνεσθαι συμβαίνει τοῦ ἀέρος· αὐχμούς τε γὰρ καὶ τῶν ἐναντίων ραγδαίους ὄμβρους κατὰ τὴν διάλυσιν αὐτῶν γίνεσθαι. Cf. F131b lines 20–2.

<sup>7</sup> Oltramare, p.4; Brennecke, pp.18–9.

<sup>8</sup> Some passages might conceivably be derived from some lost work; but it seems very improbable, because we hear of hardly any lost works likely to have discussed these topics. The only exception is *N.Q.* 7.28: comets as weather-signs may well have been discussed in the Aristotelian work on weather-signs (mentioned, for example, at Diogenes Laertius 5.26) or in Aristotle's

the actual text of *Mete.*: his immediate source, if not *Mete.* itself,<sup>1</sup> must have quoted the relevant passages from *Mete.* practically verbatim. Elsewhere this need not have been so, and we may suppose either that Seneca depended on a secondhand, presumably inaccurate, report of *Mete.*: or (which is at least as likely) that he had read all of *Mete.*, but relied in his less accurate passages on an unreliable memory, or on unreliable notes made at the time of reading;<sup>2</sup> or even that he was misinformed by someone he had asked to consult *Mete.* for him.<sup>3</sup>

In five of the eight passages Seneca mentions Aristotle's views in the course of expounding arguments or theories of his own: in 1.1 (where he twice cites Aristotle) Seneca is giving his own general theory of shooting stars etc., in 1.8 he is discussing certain features of rainbows, in 7.5 he is attacking Epigenes' theory of *trabes*, in 7.28 the significance of comets as weather-signs is introduced, and dismissed, as a possible objection to Seneca's theory that comets are *stellae*. In 7.5 and 28 the requirements of the context may have led Seneca to distort Aristotle's views (see above), and though this does not seem so in the other passages, Seneca's concern with his own view rather than Aristotle's helps to explain why, in 1.1.7 and 1.8.6, he tells us so much less about Aristotle than at first sight he seems to.

The other three passages, 1.3.7–8, 2.12.4–6, and 6.13.1 are each part of a survey of previous theories (though after 1.3.8 Seneca passes imperceptibly on to giving his own view). Here Seneca has no motive for not giving Aristotle's view accurately and fully, and so in fact two of these passages are far more accurate than the rest.

## II. SENECA'S CITATIONS OF PLATO, AND OF ARISTOTLE OUTSIDE *N.Q.*<sup>4</sup>

It must have been comparatively easy for Seneca to report Aristotle's meteorological theories correctly, as it is easy for us to check how well he has done so. The *Mete.* was extant in Seneca's day, and is in ours; and it had not been, and is not now, the object of extensive discussion and reinterpretation. Seneca probably had no opportunity to learn Aristotle's views on meteorology at fifth or sixth hand, because not enough will have been written about them: he will have had no choice but to read *Mete.* itself or a more or less direct report of it. And in judging Seneca we do not usually have to consider whether he has picked the right one among several rival interpretations.

own προβλήματα (which dealt with winds: *Mete.* 363<sup>24</sup>). The extant *Problems* 26 is on wind but contains nothing relevant to Seneca). But it is unlikely that any Aristotelian work contradicted *Mete.*'s statement that comets are a sign of drought and may affect a year's weather, since that seems to have been the regular view: see above, nn.4 and 6, p.415, and Aratus 1093, πολλοὶ γὰρ κομώσωσιν ἐπ' αὐχμηρῶ ἐνιαυτῶ.

<sup>1</sup> Some scholars (e.g. Oltramare, pp.xviii and 4 f.; Brennecke, p.50) have argued that Seneca knew Aristotle's meteorology only at second hand.

<sup>2</sup> Plutarch, *De tranquillitate animi* 464F, says that that work is based on his ὑπομνήματα, and the younger Pliny tells

how his uncle made voluminous notes from his reading, on which (evidently) he based his published works (*Ep.* 3.5.10, 15, 17). Seneca may have made similar notes.

<sup>3</sup> Cf. p.426. Bennecke, pp.49 f., denies the possibility of bad memory, notes, or assistants, but for no good reason I can see.

<sup>4</sup> I am concerned only with statements about Plato's and Aristotle's doctrines, ignoring (for example) biographical anecdotes and places where Plato is mentioned as an archetypal philosopher. I have mostly used the Budé editions of Seneca's works, from which (and sometimes also from the Teubner editions) I have taken many of the references to passages in Plato and Aristotle.



It is far otherwise with the metaphysical and ethical subjects of Seneca's other works: they were both popular and controversial subjects; the views of Plato and Aristotle upon them must have been frequently cited among the commonplaces of contemporary philosophical discussion, and frequently it must have been both easy and tempting to reinterpret their views to suit particular arguments. Plato's metaphysics, especially, were progressively reinterpreted by later Platonists. On these subjects Seneca must frequently have had both motive and opportunity to cite current, and often tendentious, views about Plato and Aristotle, and to modify them for his own purposes, without referring to their original works. There is a corresponding difficulty for us, in that frequently the interpretation of Plato and Aristotle remains controversial today: if we cannot agree on what (say) Plato's view of substance actually was, we can scarcely judge whether Seneca reports it correctly. (To this we must add a second difficulty, that Aristotle wrote a good deal on these subjects in works now lost, but which may have been a source for Seneca. However, even if Seneca did draw on lost works in some passages, it seems to me unlikely that he drew so much information from them as to affect greatly the general picture which we can derive from a study of extant works.)

*Ep. 58.16–22. Plato on 'what is'*<sup>1</sup>

Seneca here asserts that Plato 'quaecumque sunt, in sex modos . . . partiatur'. The six *modi* are:

(1) that which cannot be perceived by the senses, but is 'cogitabile', e.g. 'homo generalis' (58.16).

(2) 'quod eminet et exsuperat omnia: hoc ait per excellentiam esse' (as 'poeta' to the Greeks means Homer). 'Quid ergo hoc est? Deus scilicet, maior ac potentior cunctis' (58.17).

(3) the Ideas, 'ex quibus omnia, quaecumque videmus, fiunt et ad quas cuncta formantur. Hae immortales, immutabiles . . . sunt . . . Idea est eorum, quae natura fiunt, exemplar aeternum' (58.18–9).

(4) an immanent 'idos', related to the 'idea' as the form imposed by the sculptor on the stone is related to the sculptor's model (58.20–1).

(5) 'quae communiter sunt; haec incipiunt ad nos pertinere; hic sunt omnia, homines, pecora, res' (58.22).

(6) 'quae quasi sunt, tamquam inane, tamquam tempus' (58.22).

Assessment of the accuracy of this is impeded by the difficulty just mentioned, that Plato's theory has been variously interpreted: thus it is disputable whether Plato can be said to have believed in immanent as well as transcendent Forms,<sup>2</sup> or to have regarded 'God' as a supreme sort of being.<sup>3</sup> However, even though

<sup>1</sup> In discussing *Ep. 58* and *Ep. 65* I have made some use of E. Bickel 'Senecas Briefe 58 und 65' (*Rheinisches Museum* 103 (1960), 1–20), and also a little use of G. Scarpat, *La lettera 65 di Seneca*. 2nd edn. (1970).

<sup>2</sup> Passages supporting the view that he did are *Phaedo* 102 d, distinguishing *αὐτὸ τὸ μέγεθος* from *τὸ ἐν ἡμῖν μέγεθος*, cf. 103 b (*τὸ ἐν ἡμῖν ἐναντίον* and *τὸ ἐν τῇ φύσει*) and *Parmenides* 130 b (distinguishing *αὐτῇ οὐσίᾳ* from *ἧς ἡμεῖς οὐσιότητος ἔχομεν*). Interpreters disagree over whether 'largeness

in us' (etc.) is really something distinct, in Plato's mind, both from the Form 'largeness' and from large objects (see G. Vlastos, 'Reasons and causes in the *Phaedo*', in his *Platonic Studies* (1973), pp. 84 f. and notes). It at least seems clear that Plato did not develop this notion of immanent characters, nor does he in the dialogues call them *εἶδη*.

<sup>3</sup> The Idea of the Good, and Ideas in general, are said in effect to excel everything and to exist 'really' in a way other things do not (*Republic* 509 a–b, *ὑπερέχοντος*

each of Seneca's six kinds can be defended as a tenable interpretation of something in Plato,<sup>1</sup> it is perfectly clear that what Seneca says is not taken directly, or even at second hand, from Plato's text, but is the construction of later Platonists. Plato never gives a list of kinds of being remotely like this. The immanent 'idos' is a concept which Plato, at most, only refers to; its elaboration, as described by Seneca, and the implied contrast of *idéa* with *éidos* as transcendent and immanent Forms, is a later commentator's construction: the contrast, unparalleled in Plato himself, recurs in Albinus' interpretation of him.<sup>2</sup> Similarly, although Plato does virtually describe some things as 'quasi-existing', the inclusion of void and time among them is not his idea<sup>3</sup> but the Stoics'.<sup>4</sup> Seneca is giving us a contemporary interpretation of Plato, heavily influenced by later Platonist and Stoic ideas.

After describing the six kinds of being, Seneca goes on (58.22): 'Quaecumque videmus aut tangimus, Plato in illis non numerat, quae esse proprie putat: fluunt enim et in assidua deminutione atque adiectione sunt. Nemo nostrum idem est in senectute, qui fuit iuvenis; nemo nostrum est idem mane, qui fuit pridie' etc. Here, 'Quaecumque . . . putat' (whatever source Seneca took it from) accurately reports Plato's doctrine: *Timaeus* 28b-c states: ὁ . . . κόσμος . . . ἀπτός τέ ἐστι καὶ σώμα ἔχων, πάντα δὲ τὰ τοιαῦτα αἰσθητά, τὰ δὲ αἰσθητά, δόξη περιλήπτὰ μετ' αἰσθήσεως, γιγνόμενα καὶ γεννητά ἐφάνη. And he has just (28 a) spoken of τὸ . . . δόξη μετ' αἰσθήσεως ἀλόγου δοξαστόν as γιγνόμενον καὶ ἀπολλύμενον, ὄντως δὲ οὐδέποτε ὄν. But what follows in Seneca seems to have been influenced by his moralizing preoccupations. 'Fluunt . . . adiectione sunt' is an approximately correct report of Plato, though Plato characteristically speaks of coming-to-be and perishing, not of increasing and diminishing; the last part of my quotation, 'Nemo nostrum' etc., though it looks like part of Plato's theory, so far as I know has no parallel in Plato. Seneca is here beginning to draw moral conclusions from Plato's theory of being, and that is likely to be his own contribution, not that of his source. This seems clearly so at 58.26, where Seneca reverts to this point of the non-existence of sensible things: 'omnia ista, quae sensibus serviunt, quae nos accendunt et irritant, negat Plato ex his esse, quae vere sint.' I have just quoted what Plato said on this point; and 58.22, 'Quaecumque videmus' etc., which

κτλ.; *Phaedrus* 247 c—e οὐσία ὄντως οὔσα κτλ.; cf. Seneca's 'exsuperat omnia', 'per excellentiam esse'), and Ideas are called divine (e.g. *Phaedo* 80 b θείω); but they are not said to be θεοί or θεός. The Demiurge is called ὁ θεός (*Timaeus* 30 a 1 etc.), but is not explicitly a supreme sort of being, since he is not said to be superior to the Forms (although many interpreters have supposed that he is so; see G. M. A. Grube, *Plato's Thought* (1935), pp. 156 ff.).

<sup>1</sup> On the second and fourth kinds see the two preceding notes. The first and third kinds are different ways of describing the Forms (which are τὸ νοητόν, *idéai*, and immortal παραδείγματα of sensible things: *Republic* 507 b—510, 596 b; *Timaeus* 27 d—29); the fifth kind seems to be a way of referring to genera and species, which in Platonic terms would mean the Forms once again; the sixth kind, 'quae quasi sunt', suggests what is said of the Receptacle in *Timaeus* 49 a—51 a,

and of the objects of δόξα which 'partake in being and in not-being' in the *Republic* (e.g. 478 e). (However, Bickel op.cit. gives rather different interpretations, especially of the fourth and fifth kinds; which shows how remote from Plato all this is.)

<sup>2</sup> See Bickel, op.cit., especially p.4.

<sup>3</sup> He identifies the Receptacle with χώρα (*Timaeus* 52 a—b), which might be identified with void; but the latter identification is not made in the *Timaeus*.

<sup>4</sup> To the Stoics, time and void are ἀσώματα and therefore τῶν ἄ but not ὄντα (SVF ii.329, 331; cf. Theiler, quoted by Bickel op.cit. p.4)—note that Seneca, *Ep.* 58, does not accept this, allowing the classification of *incorporalia* among *quod est*, and evidently confining the class of τῶν ἄ which are not ὄντα to figments such as centaurs (*Ep.* 58.11—12, 15). (Bickel disagrees with Theiler, but his view (op.cit. pp.6 f.) seems to me much less plausible.)

follows Plato closely, must represent what Seneca's source said; the rephrasing of the theory, in 58.26, to enforce the Stoic attitude to pleasure and pain, is surely Seneca's own.

*Ep. 65.4–10. Aristotle and Plato on causation*

This passage closely resembles *Ep. 58.16 ff.*<sup>1</sup> Seneca starts 'Aristoteles putat causam tribus modis dici', but then enumerates correctly Aristotle's *four* causes ('materia', 'opifex', 'forma', 'propositum')—note that the beginning of the citation is here the *inaccurate* part. At 65.7 he continues: 'His quintam Plato adicit exemplar, quam ipse ideam vocat', i.e. he attributes to Plato Aristotle's four causes, and the transcendent Form as a fifth. This resembles *Ep. 58.16 ff.*—Seneca again attributes to Plato both transcendent and immanent Forms—and its relation to Plato's text is almost exactly the same. All five causes, like all six kinds of being, can be paralleled by some statement of Plato's: Plato speaks, in different passages, of agent, Form, and purpose as *αἴτια*,<sup>2</sup> and (while he does not mention the concept of *materia*, ὕλη, as such) the *ὑποδοχή* of *Timaeus* 48–53, though not called an *αἴτιον*, in function resembles Aristotle's ὕλη, and might reasonably be regarded as a material cause.<sup>3</sup> But Plato never assembles them in a single account of causation, any more than he does the kinds of being; and, as in *Ep. 58*, some things in Seneca's account are clearly derived from commentators on Plato, not from Plato himself: the concept of ὕλη is attributed to him as an interpretation of the *ὑποδοχή* by writers from Aristotle onwards;<sup>4</sup> the string of relatives in 65.8 ('id ex quo, id a quo, id in quo, id ad quod, id propter quod') is more closely paralleled in Philo, and later writers, than in Plato or Aristotle;<sup>5</sup> most notably, the theory that God has the Ideas within himself occurs also in Philo and later, but not in Plato.<sup>6</sup> As in *Ep. 58*, Seneca was obviously drawing on a current interpretation of Plato, not on Plato's actual words. This, however, need not apply to 65.9–10, where Seneca says that, for Plato, the universe has these five causes (a remark that is certainly true so far as the efficient cause ('deus'), 'exemplar', and final cause are concerned),<sup>7</sup> concluding (65.10): 'Ita certe Plato ait: quae deo faciendi mundum fuit causa? bonus est; bono nulla cuiusdam boni invidia est; fecit itaque quam optimum potuit.' This correctly reports *Timaeus* 29 d–e. Seneca goes on to appeal to the reader ('Fer ergo iudex sententiam . . .'), so there is no doubt that his exposition of Plato ends at this point.

<sup>1</sup> This is not to say that they must be from the same source: as Bickel points out (op. cit., p. 6), *Ep. 58.16–20*, unlike *Ep. 65*, makes no use of the concept of *materia*, though we might expect it in a discussion of kinds of being.

<sup>2</sup> Agent: *Philebus* 26 e identifies τὸ αἴτιον and τὸ ποιῶν; *Timaeus* 29 a, the Demiurge is ἀριστος τῶν αἰτίων. Form: *Phaedo* 100 c, αὐτὸ τὸ καλὸν is αἰτία of other things' beauty. Purpose: *Timaeus* 29 d–30 b. (On immanent forms see above, p. 417, n. 2.)

<sup>3</sup> Cf. especially 50 a–b, comparing the ὑποδοχή and gold.

<sup>4</sup> Aristotle *Phys.* 209<sup>b</sup> 11 ff.; cf., e.g., Plutarch, *De animae procreatione* 1014 d–e, 1015 c; Albinus, *Didascalicus*, cap. 8.

<sup>5</sup> Cf. evidence cited in Scarpat, op. cit., pp. 124 f.; cf. Bickel, op. cit., p. 14.

<sup>6</sup> *Ep. 65.7*: 'Deus intra se habet . . . plenus his figuris est, quas Plato ideas appellat.' Cf. Philo Judaeus, *De cherubim* 49, God is ἀσωμάτων ἰδεῶν ἀσώματος χώρα, cf. *De opificio mundi* 17–20; Albinus, *Didascalicus* 9 ἡ ἰδέα ὡς μὲν πρὸς θεὸν νόησις αὐτοῦ etc. (On this theory see A. N. M. Rich, 'The Platonic Ideas as the thoughts of God', *Mnemosyne* ser. 4, 7 (1954), 123–33; A. H. Armstrong 'The background of the doctrine "That the intelligibles are not outside the intellect"', *Entretiens Hardt* 5 (1960), 391–413; P. Merlan and H. Chadwick in *Cambridge History of Later Greek and Early Medieval Philosophy* (1967), pp. 66 and 142.)

<sup>7</sup> See *Timaeus* 28–30.

In *Epp.* 58 and 65 Seneca gives us, not quotations or paraphrases from any Platonic dialogue or dialogues, but a contemporary interpretation of Plato, heavily influenced by later Platonist and Stoic ideas; a stage on the way that led from Plato to Plotinus and the neo-Platonists.<sup>1</sup> *Ep.* 58.8 implies that Seneca had his account of Plato's theory of being from an associate by word of mouth,<sup>2</sup> in which case he had not been to any great trouble in finding out about the subject; though this is not to say that he had read no Plato, or that he checked nothing: in 65.10 'Ita certe Plato ait' suggests that he had checked the point which follows. There is no indication that Seneca has modified Plato's theory for his own purposes, except (as already noted) in 58.22 and 26.

As I have said already, I do not mean to blame Seneca for drawing on a contemporary interpretation when he wished to give a brief account of some of Plato's theories: it was the only sensible thing to do. But it is clear that in the event he has presented as facts statements about Plato which are, to say the least, controversial, and that if he were our only source for Plato's theories of being and cause, we should have only a very poor idea of what Plato actually said. This example should be borne in mind in assessing any report by Seneca of a lost author's theory on a widely discussed and controversial subject.

These passages do not resemble those in *N.Q.* where Seneca's citations start accurately and then decline. Both start inaccurately; the end of 65.4–10 is very accurate; in 58.22 'Quaecumque videmus aut tangimus' and the following sentences gradually decline in accuracy, but 'Quaecumque videmus . . . proprie putat' is as accurate as anything in the whole passage, 58.16–22: there is no steady decline in accuracy. It is significant that Seneca *names* Plato at the end of both passages, in 58.22 and 65.10: it shows his thought is still on Plato, not on ideas of his own which Plato's theories have suggested; in 65.10, in particular, the words 'ita certe Plato ait' show he is making a special effort to quote him accurately.

#### *Ep.* 58.9 ff. Aristotle on genera and species

This passage too shows the influence of later thought: 'Homo species est, ut Aristoteles ait; equus species est; canis species est. Ergo commune aliquod quaerendum est his omnibus vinculum, quod illa complectatur et sub se habeat. Hoc quid est? Animal. Ergo genus esse coepit horum omnium, quae modo rettuli, hominis, equi, canis, animal.' But animals and plants (he goes on) are different types of *animantia*; *animantia* and *inanima* are different types of *corpora*; and *corporalia* and *incorporalia* are different types of *quod est*, which is 'genus primum et antiquissimum et, ut ita dicam, generale'. How much of this is from Aristotle? Aristotle frequently speaks of *ἄνθρωπος* (or the like) as an *εἶδος* and of *ζῷον* as the wider *γένος* to which the *εἶδος* belongs;<sup>3</sup> but I do not think he ever lists the wider genera to which *ζῷον* etc. belong, as Seneca does; and he repeatedly denies that *τὸ ὄν* is a *γένος*.<sup>4</sup> But Seneca's list of progressively wider genera, ending in *quod est*, may have been widespread in post-Aristotelian

<sup>1</sup> Its precise position among Middle Platonist theories is beyond the scope of this paper; see, for instance, Bickel, *op.cit.*; Merlan in *Cambridge History of Later Greek . . . Philosophy*, pp. 54 f.

<sup>2</sup> *Ep.* 58.8: 'Amicus noster . . . hodierno die dicebat'—this expression suggests verbal,

not written communication.

<sup>3</sup> *Cat.* 2<sup>a</sup> 11 ff.; *Top.* 144<sup>a</sup> 28–36. Cf. *An.Post.* 91<sup>b</sup> 4 ff.; *Metaph.* B 995<sup>b</sup> 29–31, Z 1038<sup>b</sup> 17 ff.

<sup>4</sup> *Metaph.* B 998<sup>b</sup> 22 ff., H 1045<sup>b</sup> 5 f., K 1059<sup>b</sup> 27–34.

philosophical schools: there is a very similar list in Porphyry's *Isagoge*, and Diogenes Laertius 7.61, in his account of Stoicism, seems to imply the same idea, speaking of τὸ ὄν as γενικώτατον γένος and Socrates as εἰδικώτατον εἶδος, in language very similar to Porphyry's.<sup>1</sup>

Thus what Seneca has given us is a later development of Aristotle's theory of genera and species; he may have been aware that only the first few sentences are from Aristotle, but we could hardly tell how much is from Aristotle if Seneca were our only source: this is one of the passages where Seneca's citation is not nearly as long as we might suppose. Seneca's object, as 58.7–8 shows, is to explain 'quod est' as 'primum illud . . . quo universa comprehensa sunt'; Aristotle's authority helps with this, but it matters little to Seneca how much is from Aristotle and how much from elsewhere.

The passages discussed above are the only ones in which Seneca recounts, or appears to recount, a theory of Plato or Aristotle at length. His other quotations and references are all brief, mentioned as a support to a view of Seneca's own, or else as an opposed view which he wants to refute.

### *Aristotle on anger*

Passages of the latter sort are Seneca's reports of Aristotle's attitudes to anger and the emotions.<sup>2</sup> *De ira* 1.9.2 says: 'Ira, inquit Aristoteles, necessaria est, nec quicquam sine illa expugnari potest nisi illa implet animum et spiritum accendit; utendum autem illa est non ut duce sed ut milite.' Cf. 3.3.1: 'Stat Aristoteles defensor irae et vetat illam nobis exsecari: calcar ait esse virtutis, hac erepta inermem animum et ad conatus magnos pigrum inermem fieri.' 3.3.5 implicitly refers to Aristotle again; '[a distinguished philosopher] illi [i.e. irae] indicat operas et tamquam utilem ac spiritus subministrantem in proelia, in actus rerum, ad omne quodcumque calore aliquo gerendum est vocet.' 1.17.1 refers to emotion more generally: 'Aristoteles ait affectus quosdam, si quis illis bene utatur, pro armis esse.' In every passage Seneca, as a Stoic should, mentions this view only to denounce it.

Now it is true that Aristotle, unlike the Stoics, did approve of moderate anger, and of some other πάθη, in certain circumstances: see, for instance, *E.N.* 1126<sup>b</sup>5–7 ἡ μὲν μέση ἔξις ἐπαινετή, καθ' ἣν οἷς δεῖ ὀργιζόμεθα καὶ ἐφ' οἷς δεῖ καὶ ὥς δεῖ καὶ πάντα τὰ τοιαῦτα, αἱ δ' ὑπερβολαὶ καὶ ἐλλείψεις ψεκταί. Elsewhere he gives a list of πάθη which it is sometimes right to feel in moderation, adding that certain other πάθη are always wrong.<sup>3</sup> He even uses expressions which recall some of Seneca's: *E.N.* 1126<sup>a</sup>4 ff. οἱ γὰρ μὴ ὀργιζόμενοι ἐφ' οἷς δεῖ ἡλίθιοι δοκοῦσιν εἶναι . . . δοκεῖ γὰρ . . . μὴ ὀργιζόμενος . . . οὐκ εἶναι ἀμυντικός. This recalls *De ira* 3.3.1, 'hac erepta' etc. *E.N.* 1116<sup>b</sup>25–31 states: οἱ ἀνδρείοι θυμοειδείς· ἱητικώτατον γὰρ ὁ θυμὸς πρὸς τοὺς κινδύνους (. . . is readiest to encounter dangers) . . . οἱ μὲν οὖν ἀνδρείοι διὰ τὸ καλὸν πράττουσιν, ὁ δὲ θυμὸς συνεργεῖ αὐτοῖς. The last phrase recalls especially *De ira* 3.3.5, 'spiritus subministrantem', though in Aristotle θυμός means 'high spirit', Seneca's *spiritus*, rather than anger.<sup>4</sup>

<sup>1</sup> See Porphyry's *Isagoge*, p.4.21–6 Busse. Cf. Bickel, op.cit., p.2.

<sup>2</sup> The evidence is set out and discussed by J. Fillion-Lahille, 'La colère chez Aristote' (*REA* 72 (1970), 46–79). I must acknowledge the help of an unpublished paper, and

much advice, by J. F. Procopé in this section.

<sup>3</sup> *E.N.* 1106<sup>b</sup>16–23, 1107<sup>a</sup>8–11.

<sup>4</sup> Other Aristotelian parallels are listed by Fillion-Lahille, op.cit. 76–8; I have quoted some of the most striking.

But much in Seneca has no parallel in Aristotle, or no close one: for instance, that a man should use anger 'non ut duce sed ut milite', that some emotions are 'pro armis', that anger is 'calcar virtutis'.<sup>1</sup> It has often been supposed, and may be true, that Seneca's source is a lost work, by Aristotle or some other Peripatetic;<sup>2</sup> but another possibility is just as likely. That the Peripatetics were the one philosophical school who thought it sometimes right to be angry, and that they must be condemned for this belief, seems to have been a commonplace among later philosophers.<sup>3</sup> This makes it easy to imagine critics of Aristotle borrowing statements of Aristotle's view from each other, without referring back to the original; and in fact some expressions in Seneca are closer to other critics of Aristotle than to Aristotle's surviving work. Seneca's 'calcar virtutis' closely resembles Cicero's 'cotem fortitudinis';<sup>4</sup> and Philodemus *De ira* col. XXXIII 16 ff. recalls Seneca's 'non ut duce sed ut milite'. Thus this may well be another instance of Seneca's dependence on later comments rather than Aristotle's own work: if Seneca were our sole source, we could infer quite correctly that Aristotle approved of anger under certain conditions; but it is very doubtful how correctly he informs us of the terms and arguments Aristotle used. To Seneca, Cicero, and Philodemus it was a shocking paradox that Aristotle approved of anger, and they needed to spell out the fact that he did so, while Aristotle himself could simply take it for granted that anger was sometimes right; this explains much of the difference between what is said of anger in *E.N.* and in later reports of Aristotle's view.

Seneca also cites Aristotle on anger at *De ira* 1.3.3: '[Aristoteles] ait . . . iram esse cupiditatem doloris reponendi'. This is not an adequate account of Aristotle's opinion. At *De An.* 403<sup>a</sup>30 Aristotle mentions this definition (a logician, he says, would define anger as *ὄρεξιν ἀντιλυπήσεως ἢ τι τοιούτου*) but regards it as insufficient: an account of anger should include its material, physical aspects (cf. 403<sup>a</sup>25–b9). Elsewhere he gives definitions similar to *ὄρεξις ἀντιλυπήσεως*; but those listed in Bonitz's *Index Aristotelicus* are not quite the same.<sup>5</sup> Seneca is here accurate enough for his own purpose: he is asserting that Aristotle's definition of anger is practically equivalent to the Stoic view he is maintaining, that anger is the desire to punish those who have injured us (see *De ira* 1.3.1–2); which is true. It would be irrelevant to mention the physical aspects of anger. But Seneca would be misleading were he our sole source. As elsewhere, there is an indication that Seneca may have relied on a contemporary source, not directly on Aristotle: Plutarch *De virtute morali* 442 b suggests that *ὄρεξις ἀντιλυπήσεως* was commonly regarded as Aristotle's definition of anger.

### Other passages

Nearly all Seneca's other reports of Plato's and Aristotle's views are brief, and have the purpose of supporting Seneca's own arguments. Some are quite accurate: *De ira* 2.20.2 'vinum, quod pueris Plato negandum putat et ignem

<sup>1</sup> Fillion-Lahille, loc.cit., compares certain Aristotelian passages with these; but the parallels are far from close.

<sup>2</sup> e.g. Fillion-Lahille, op.cit., pp.46 ff.

<sup>3</sup> Besides Seneca, see Philodemus, *De ira*, col. XXXI, 31 ff.; Cicero, *Tusc.* 4.19. 43 ff., *Off.* 1.25. 89; Lactantius, *Inst.* 6.19.

<sup>4</sup> *Tusc.* 4. 19. 43.

<sup>5</sup> H. Bonitz, *Index Aristotelicus* (1870), s.v. *ὄρεγή*. See *Top.* 156<sup>a</sup>31 ff., *ὄρεξις τιμωρίας διὰ φαινομένην ὀλιγωρίαν*. Cf. *Rhet.* 1378<sup>a</sup>31–3 (similar, but more elaborate).

vetat igne incitari', accurately reports *Laws* 666 a. Rather longer is *De ira* 1.19.7: 'ut Plato ait: nemo prudens punit, quia peccatum est, sed ne peccetur; revocari enim praeterita non possunt, futura prohibentur.' Compare *Protagoras* 324 b: ὁ . . . μετὰ λόγου ἐπιχειρῶν κολάζειν οὐ τοῦ παρελθυθέντος ἕνεκα ἀδικήματος τιμωρεῖται—οὐ γὰρ ἂν τό γε πραχθέν ἀγένητον θείη—ἀλλὰ τοῦ μέλλοντος χάριν, ἵνα μὴ αὖτις ἀδικήσῃ μήτε αὐτὸς οὗτος μήτε ἄλλος ὁ τοῦτον ἰδὼν κολασθέντα. The speaker is Protagoras; but it was also Plato's view, for the same idea occurs at *Laws* 934 a–b, though that is verbally less close to Seneca.

Other citations are less accurate. For example, *Ad Marciam* 23.2 states: 'Platon clamat: sapientis animum totum in mortem prominere, hoc velle, hoc meditari, hac semper cupidine ferri, in exteriora tendentem.' This recalls certain expressions in *Phaedo* 64–7: philosophers ἐπιτηδεύουσιν . . . ἀποθνήσκω (64 a), ἀποθνήσκω . . . προθυμείσθαι . . . ἐν παντὶ τῷ βίῳ (ibid.), ἀποθνήσκω μελετώσι (67 e), ἄσμενοι ἐκείσε (to Hades) ἰοιεν (ibid.). But Seneca gives us only a rough idea of what Plato actually said. Seneca puts the point more strongly than Plato, which perhaps reflects Seneca's own fascination with death.<sup>1</sup>

*De beneficiis* 4.33.1: 'ut ait Platon, difficilis humani animi coniectura est.' The Budé editor, F. Préchac, refers this to *Alcibiades I* 133 e, ὅστις δὲ τὰ αὐτοῦ ἀγνοεῖ καὶ τὰ τῶν ἄλλων που ἂν ἀγνοοῖ, which seems very remote; closer, but not identical, is *Phaedrus* 246 a, περὶ . . . τῆς ιδέας αὐτῆς (i.e. ψυχῇ, both human and divine) . . . οἷον . . . ἐστι, πάντῃ πάντως θείας εἶναι καὶ μακρὰς διηγήσεως. The context in Seneca, however, concerns the characters of individuals, not 'mind' in general.

*N.Q.* 5.18.16 (after speaking of the evil purposes for which men use ships): 'Egregie Plato dicit . . . minima esse quae homines emant vita.' A. Gercke (the Teubner editor) and Oltramare know no original for this; but there are passages of Plato whose purport is roughly equivalent: that men devote their lives to, and fight and kill each other about, things which are really worthless (e.g. *Republic* 520 c, 586 a–b); so we can regard Seneca's saying as a rhetorical restatement of a view Plato held. Once Plato's statements had been transformed (by Seneca or his source) into 'gnomes' like my last two quotations from Seneca, it was natural that they should be applied in contexts quite different from their Platonic originals.

In all the passages so far discussed in this section, except those in *Ep.* 58, the context makes it clear where Seneca's report of Plato or Aristotle ends; but elsewhere it is less clear. At *De ira* 1.6.5 Seneca reinforces his view that anger is unnatural by saying: 'Et Platonis argumentum afferam . . . Vir bonus, inquit, non laedit. Poena laedit: bono ergo poena non convenit, ob hoc nec ira quia poena irae convenit. Si vir bonus poena non gaudet, non gaudebit ne eo quidem affectu cui poena voluptati est: ergo non est naturalis ira.' Seneca is apparently thinking of *Republic* 335 d, where Socrates, arguing against the view that justice is to aid friends and injure enemies, maintains that οὐ . . . τοῦ ἀγαθοῦ βλάπτειν [sc. ἐργον] ἀλλὰ τοῦ ἐναντίου; but Socrates here says nothing of the good man's attitude to punishment or anger. Here Seneca's 'argumentum afferam' suggests that all the rest of my quotation is from Plato when in fact only the first sentence is.

At *Ep.* 44.4 Seneca cites Plato in support of his view of the unimportance of ancestry: 'Omnibus nobis totidem ante nos sunt: nullius non origo ultra memoriam

<sup>1</sup> See F. H. Sandbach, *The Stoics* (1975), p.157.

iacet. Plato ait neminem regem non ex servis esse oriundum, neminem servum non ex regibus. Omnia ista longa varietas miscuit et sursum deorsum fortuna versavit. (5) Quis est generosus? Ad virtutem bene a natura compositus' etc. This is so phrased that the report of Plato's view might be confined to the sentence which names him, or might be longer. Comparison of the original, *Theaetetus* 175 a, shows that the former is the case: *πάππων καὶ προγόνων μυριάδες ἐκάστω γεγόνασιν ἀναρίθμητοι, ἐν αἷς πλούσιοι καὶ πτωχοὶ καὶ βασιλεῖς καὶ δούλοι βάρβαροί τε καὶ Ἕλληνες πολλάκις μυριοὶ γεγόνασιν ὁπωσούν*. This is roughly equivalent to the sentence of Seneca which names Plato; but what follows in Plato has very little relation to what follows in Seneca.

In *De tranquillitate animi* 17 Seneca describes the value of occasional relaxation, and even drunkenness, ending: '... tristis ... sobrietas removenda paulisper. (10) Nam, sive Graeco poetae credimus, aliquando et insanire iucundum est; sive Platoni, frustra poeticas fores compos sui pepulit; sive Aristoteli, nullum magnum ingenium sine mixtura dementiae fuit. (11) Non potest grande aliquid et super ceteros loqui nisi mota mens' etc. The reference to Plato—an accurate report of *Phaedrus* 245 a—here presents no difficulty; but the report of Aristotle might be confined to the one sentence or might be longer. In fact, the former is the case, the passage being evidently derived from *Problems* 30.1, *πάντες ὅσοι περιττοὶ γεγόνασιν . . . φαίνονται μελαγχολικοὶ ὄντες* (953<sup>a</sup>10 ff.). Even this Seneca does not report accurately, since *μελαγχολία* is here not quite the same as 'mixture dementiae': madness (*μανία*, *ἔκστασις*) is only one of its numerous effects<sup>1</sup>—it is true that Seneca is partly justified, in that *μελαγχολία* throughout *Problems* 30.1 probably implies some abnormality. How Seneca's misquotation arose seems partly explained by references to the same Problem in Cicero and Plutarch:<sup>2</sup> *Tusc.* 1.33.80 'Aristoteles . . . ait omnes ingeniosos melancholicos esse'; *Lysander* 2.5 'Ἀριστοτέλης . . . τὰς μεγάλας φύσεις ἀποφαίνων μελαγχολικὰς. These citations are halfway between the text of the Problem and Seneca: Seneca's quotation is presumably second hand, and is further distorted for that reason; also, he may have deliberately substituted 'mixture dementiae' for melancholia, to bring this sentence closer to his two preceding ones. The passage is definitely misleading as an account of what the Problem says.

An avowedly indirect report of Plato is *Ep.* 94.38: 'dissentio a Posidonio, qui Pro quo, inquit, Platonis legibus adiecta principia sunt?'<sup>3</sup> 'Principia' means 'preambles', as the context shows; this correctly reports a view Plato defends at *Laws* 719 e–722 a.

The evidence here discussed shows that Seneca's references to Plato's and Aristotle's theories are seldom, if ever, wholly mistaken; we have always found a grain of truth in them, though sometimes not more than a grain. The one apparent exception is *De brevitate vitae* 1.2: 'Aristotelis cum rerum natura exigentis minime conveniens sapienti viro lis: aetatis illam animalibus tantum indulsisse, ut quina aut dena saecula educerent, homini in tam multa ac magna genito tanto citiorem terminum stare'. This is the opposite of Aristotle's actual view, that men are among the longest lived of animals (*Long.* 466<sup>a</sup>12–13). But Seneca's source was presumably a biographical anecdote of Aristotle on his

<sup>1</sup> For instance, it may make men *ὀργίλους*, *φιλανθρώπους*, *ἐλεήμονας*, *ἱταμούς* (etc.; 953<sup>a</sup>33 ff.), *οἱ νωθροὶ καὶ μωροὶ οἱ μανικοὶ καὶ εὐφρεῖς καὶ ἐρωτικοὶ κτλ.* (954<sup>a</sup>31–3).

<sup>2</sup> Quoted in E. S. Forster's Oxford

Translation of *Problems* (1927) ad. loc.  
<sup>3</sup> This, Préchac's text (Budé, 1962), is partly conjectural, but the sense is not in doubt.



death-bed (cf. Cicero *Tusc.* 3.28.69, attributing similar remarks to 'Theophrastus moriens'). A passage which looks anecdotal is obviously less worthy of credit than those (like the other passages I have discussed) which appear to be citations of an author's writings.

Virtually always, then, Seneca's references to theories of Plato and Aristotle have some truth in them. But it is almost equally rare to find a reference to their theories, other than some of the very short ones, which is altogether correct and admits no doubt of where it ends. Only two passages, *N.Q.* 1.3.7–8 and 2.12.4–6, report Aristotle or Plato accurately at any length; the next-longest citation to be correct throughout is *De ira* 1.19.7, which is quite short. These two longest accurate passages concern meteorology, and are part of surveys of earlier theories: probably passages with these two features are likelier to be right than others. Elsewhere, long citations in which Seneca repeatedly names the author cited as having believed this, that, and the other (as at *Ep.* 58.16–22 and 65.7–10) are far from wholly correct; but there seems no way of deciding what parts of them are most likely to be right (unless Seneca uses some special expression, like 'Ita certe Plato ait' at *Ep.* 65.10). Where, however, Seneca names the author cited only once (usually at the beginning of his citation), the sentence in which he names him is more likely to be correct than what follows: either what follows, though presented as part of the citation, is in fact less accurate or wholly erroneous,<sup>1</sup> or the citation ends earlier than we might suppose.<sup>2</sup> (This is, of course, only a tendency of Seneca's, not a rule: some substantial citations are all rough paraphrase;<sup>3</sup> and in one the sentence which names Aristotle is less correct than what follows.<sup>4</sup>)

Seneca, so long as he got right the gist of the earlier theories he mentions, clearly was not worried whether he was strictly or verbally accurate. He had no reason to be: ancient authors generally were far less concerned than modern scholars about strict accuracy; and for Seneca meteorology cannot have been more than a pastime, while his ethical works are pieces of popular moralizing: he had no special reason for strict accuracy. It is clear from many passages that for much of what he says about Plato and Aristotle he depends, not directly on their texts, but on contemporary interpreters: such dependence is not surprising, nor (within limits) blameworthy, but it reduces his value as a source for earlier thought. (This, however, is less important with an uncontroversial subject like meteorology, on which commentators were less liable to reinterpret earlier theories.) Seneca's frequent use of contemporary interpreters does not, of course, prove that he never read or used the original texts.

Sometimes, Seneca's own purposes or preoccupations led him to modify earlier ideas deliberately, or at least to apply them in ways not intended by their authors. We cannot be sure how often he does this, since we lack his immediate sources, but *Ep.* 58.26 is one clear case (see p.418 f.), and others are probable;<sup>5</sup> again, this will be less important in meteorology, where Seneca is

<sup>1</sup> So at *N.Q.* 1.1.7–9, 1.3.7 ff., *De ira* 1.6.5—one might add *N.Q.* 7.5.4–5, where, though Aristotle is mentioned twice, the second mention is a question, not a statement of fact.

<sup>2</sup> As at *N.Q.* 1.8.6, *Ep.* 58.9 ff., *Ep.* 44.4. Similarly, at *Ep.* 58.22 the citation ends sooner than we might suppose after the

last mention of Plato.

<sup>3</sup> *N.Q.* 6.13.1, *De ira* 1.9.2, 3.3.1 and 5, *Ad Marciam* 23.2.

<sup>4</sup> *Ep.* 65.4–6.

<sup>5</sup> e.g. *Ep.* 58.22 (p.418); *ad Marciam* 23.2 (p.423); *Tranq.* 17.10 (p.424); perhaps *Ben.* 4. 33.1, *N.Q.* 5. 18.16 (p.423).

less concerned to push his own views.<sup>1</sup> Other errors seem due simply to carelessness, as at *N.Q.* 1.1.7, where for no apparent motive he gives a bad account of Aristotle's exhalation theory, in contrast to the excellent one at 2.12.4 (see pp.410, 413). Sometimes too, I suspect, he made up details for theories he knew only in outline,<sup>2</sup> and presented indirect reports as direct quotations,<sup>3</sup> merely to avoid a confession of ignorance, or for the sake of a vivid turn of phrase. Frequently he fails to distinguish clearly between the passage he is citing and the other ideas it suggests to him, or which suggested the citation; this would easily happen when he cites Aristotle or Plato in support of his own arguments, and it is surely the usual reason why his citations (or the accurate parts of them) are so often shorter than they seem.

In *Ep.* 84 Seneca compares his literary activity to bees collecting honey and the body digesting food: (84.5) 'debemus . . . quaecumque ex diversa lectione congegimus separare (melius enim distincta servantur), deinde adhibita ingenii nostri cura et facultate in unum saporem varia illa libamenta confundere, ut etiam si apparuerit unde sumptum sit, aliud tamen esse quam unde sumptum est appareat.' This does not mean that professed descriptions of other views will be inaccurate; but it does suggest that they may be paraphrases rather than quotations, and that Seneca would read a variety of authors before putting pen to paper, and might switch frequently from one source to another or to his own ideas, instead of following one source at length. This accords with what we have found. Seneca also obtained information from other people: Quintilian (*Inst.* 10.1.128) says of him: 'plurimum studii, multa rerum cognitio, in qua tamen aliquando ab iis quibus inquirenda quaedam mandabat deceptus est.' *Ep.* 58.16–22 is an example of this.<sup>4</sup> This is one source of error; and if, as *Ep.* 84 suggests, Seneca might write accounts of earlier views some time after reading them, and if he then wrote from memory, that in itself would account for much inaccuracy and confusion.

### III. SENECA COMPARED WITH HIS CONTEMPORARIES

Is Seneca more or less accurate as a source than his contemporaries and near-contemporaries? As already mentioned, ancient authors generally were far less concerned with strict accuracy than modern scholars. Even a writer as learned as Plutarch usually quoted other authors from memory, and cited many of them at second hand,<sup>5</sup> as was inevitable in an age when books were far scarcer and more awkward to consult than with us. Seneca often wrote misleadingly about Plato and Aristotle because he followed contemporary critics and commentators: this in itself is proof that the critics and commentators wrote misleadingly too. We have found no reason to suppose Seneca's accuracy very different from his contemporaries'.

Reasons of space compel me to confine detailed discussion to pre-Socratic meteorology. On this subject several theories mentioned by Seneca are also reported by others, mainly by Aristotle, Aetius, Hippolytus, and Diogenes

<sup>1</sup> He may have modified his report of Aristotle in *N.Q.* 7.5.4 for his own purposes: see p.414.

<sup>2</sup> *N.Q.* 6.13.1 is a possible example (p.413).

<sup>3</sup> e.g. *De ira* 1.9.2, presented as direct quotation from Aristotle, where Philodemus

and Cicero speak of 'Peripatetics', reporting their view in *oratio obliqua* (pp.421 f.).

<sup>4</sup> See p.420; Bickel, *op.cit.* p.7.

<sup>5</sup> See Ziegler's *RE* article 'Plutarchos' (1951), cols. 914–28; W. C. Helmbold and E. N. O'Neil, *Plutarch's Quotations* (1959), preface; D. A. Russell, *Plutarch* (1972), pp.42 ff.

Laertius. There are, unfortunately, no verbatim fragments describing any of these theories against which we can check the reports; but we can compare these authors with each other.

Of the four authors just mentioned and Seneca, Aristotle must be the best source for the pre-Socratics. I myself agree with Guthrie's argument that he is a good source for them; and, though others disagree, no one would deny that both the doxographers (whose interpretation ultimately derives from him, with further errors accumulating with time) and Seneca (inaccurate as we have found him) must be worse than he.<sup>1</sup> But is Seneca more or less reliable than doxographers like Aetius?

Two sorts of comparison may help to decide this. First, in two passages Aetius describes Aristotelian meteorological theories also described by Seneca:

3.3.14, on lightning etc., 'Αριστοτέλης ἐξ ἀναθυμιάσεως καὶ τὰ τοιαῦτα γίνεσθαι τῆς ξηρᾶς. ὅταν οὖν ἐντύχη μὲν τῇ ὑγρᾷ, παραβιάζεται δὲ τὴν ἐξοδόν, τῇ μὲν παρατρίψει καὶ τῇ ῥήξει τὸν ψόρον τῆς βροντῆς γίνεσθαι, τῇ δὲ ἐξάψει τῆς ξηρότητος τὴν ἀστραπὴν. This is much less accurate than Seneca (pp.410 f.).

3.15.5 concerns earthquakes: 'Αριστοτέλης διὰ τὴν τοῦ ψυχροῦ πανταχόθεν ἀντιπερίστασιν κάτωθεν καὶ ἄνωθεν αὐτῇ περιστάντος· τὸ γὰρ θερμὸν ἄνωτέρω γενέσθαι σπεύδει ἅτε δὴ κοῦρον ὄν· διὰ τοῦτο ἐν ἀπολήψει γωομένης τῆς ξηρᾶς ἀναθυμιάσεως τῇ σφηνώσει καὶ τοῖς ἀνθελιγμοῖς διαταράττεσθαι. This is quite inaccurate: *Mete.*2.8 does not mention ἀντιπερίστασις nor the natural lightness of dry exhalation.

In both places, Aetius is markedly less accurate than Seneca. But this need prove nothing for the pre-Socratics, because Aetius, and probably Seneca, depend on different sources for the pre-Socratics and for Aristotle: Aetius' information on the former, and very likely most of Seneca's also, is ultimately derived from Theophrastus' *Φυσικῶν δόξαι*, which did not deal with Aristotle,<sup>2</sup> so that for him they must depend on other sources.

The second type of comparison is to compare the reports of Seneca and the doxographers with Aristotle's reports of the same pre-Socratic theories: as Aristotle is the best of the sources, the later writer whose reports are closest to his should usually be closest to the truth; especially as Theophrastus, on whom the later writers certainly or probably depend, was not independent of Aristotle (see n.1 below).

(a) Anaxagoras on thunder and lightning (DK 59 A 84)<sup>3</sup>

*Mete.*369<sup>b</sup>12 ff.: τινὲς λέγουσιν ὡς ἐν τοῖς νέφεσιν ἐγγίγνεται πῦρ· τοῦτο δ' Ἐμπεδοκλῆς μὲν φησιν εἶναι τὸ ἐμπεριλαμβανόμενον τῶν τοῦ ἡλίου ἀκτίνων, Ἀναξαγόρας δὲ τοῦ ἄνωθεν αἰθέρος, ὃ δὴ ἐκεῖνος καλεῖ πῦρ, κατενεχθὲν ἄνωθεν κάτω. τὴν μὲν οὖν διάλαμψιν ἀστραπὴν εἶναι τὴν τούτου τοῦ πυρός, τὸν δὲ ψόρον ἐναποσβεννυμένου καὶ τὴν σίξιν βροντῆν. (Evidently the fire is enclosed<sup>4</sup> in the cloud, and then emitted as lightning perhaps some time later, as is shown (for example) by *Mete.*370<sup>a</sup>2 ff., arguing that, if the theory is true, then by analogy water which has been heated should emit fire when it cools and freezes.)

<sup>1</sup> See W. K. C. Guthrie, *History of Greek Philosophy* I (1962), 41–3; G. S. Kirk and J. E. Raven, *The Presocratic Philosophers* (1957), pp.3–7.

<sup>2</sup> See e.g. Kirk and Raven, loc. cit. cit.

<sup>3</sup> For discussions see Hine pp.384–7, 433, and, on *N.Q.* 2.12.3, Brennecke pp.32–4.

<sup>4</sup> ἐμπεριλαμβανόμενον. Cf. 369<sup>b</sup>19–20: ἄλογος . . . ἡ τοῦ πυρός ἐμπερίληψις, ἀμφοτέρως μὲν, μᾶλλον δ' ἡ κατάσπασις τοῦ ἄνωθεν αἰθέρος.

*N.Q.* 2.12.3 agrees fairly well with *Mete.*, being evidently derived from it:<sup>1</sup> 'Quidam putant inesse ignem nubibus . . . Quidam aiunt radios solis incurrentis recurrentisque et saepius in se relatos ignem excitare. Anaxagoras ait illum ex aethere destillare et ex tanto ardore caeli multa decidere quae nubes diu inclusa custodiant.'

Almost certainly, 2.19 is another version of Anaxagoras' theory:<sup>2</sup> 'Anaxagoras(?) ait omnia ista sic fieri ut ex aethere aliqua vis in inferiora descendat. Ita ignis impactus nubibus frigidis sonat; at, cum illas interscindit, fulget, et minor vis ignium fulgurationes facit, maior fulmina.' This is probably from a doxographic source, as 2.17–20 describes four pre-Socratic theories.

2.19 resembles, and is presumably from the same source as, Aetius 3.3.4: *ὅταν τὸ θερμὸν εἰς τὸ ψυχρὸν ἐμπέσῃ (τοῦτο δ' ἐστὶν αἰθέριον μέρος εἰς ἀερῶδες), τῷ μὲν ψόρῳ τὴν βροντὴν ἀποτελεῖ, τῷ δὲ παρὰ τὴν μελανίαν τοῦ νεφώδους χρώματι τὴν ἀστραπὴν, τῷ δὲ πλήθει καὶ μεγέθει τοῦ φωτὸς τὸν κεραυνόν.* Hippolytus *Ref.* 1.8.11 (DK 59 A 42), *βροντὰς . . . καὶ ἀστραπὰς ἀπὸ θερμοῦ γίνεσθαι ἐμπύπτοντος εἰς τὰ νέφη*, looks like a drastically shortened version of the same account.

These five accounts resemble each other; in view of their testimony, the quite different theory in Diogenes Laertius 2.9 (DK 59 A 1: *βροντὰς σύγκρουσιν νεφῶν· ἀστραπὰς ἔκτριψιν νεφῶν*) must be an error, as must the theory *N.Q.* 6.9.1 incidentally attributes to Anaxagoras in describing his earthquake theory (see p. 429): such an incidental reference must (in view of Seneca's usual inaccuracy over details) be less creditworthy than a passage which sets out to describe Anaxagoras' lightning theory.

Aristotle, Seneca, Aetius, and Hippolytus are consistent with each other, except that in Aristotle and *N.Q.* 2.12.3 *aether* is first enclosed in cloud, and subsequently causes lightning, while *N.Q.* 2.19, Aetius, and Hippolytus suggest that it causes lightning as soon as it touches the cloud.<sup>3</sup> I prefer the former version, not just because Aristotle is the best source, but also because it accords with Anaxagoras' principle 'in everything a portion of everything' that there should be *aether* actually inside the cloud. The two stages, of enclosure and subsequent lightning, would easily get telescoped into one when the theory was summarized, and so produce Aetius' version. Whichever version is right, Seneca, who gives both, is simply as good as his source in each passage.

(b) Anaxagoras on earthquakes (DK 59 A 89)

Aristotle says, briefly, (*Mete.* 365<sup>a</sup> 19–21): 'Ἀναξαγόρας . . . φησι τὸν αἰθέρα περικύκτα φέρεσθαι ἄνω, ἐμπύπτοντα δ' εἰς τὰ κάτω τῆς γῆς καὶ κοῖλα κινεῖν αὐτήν. (His criticisms, which follow, confirm that the *αἰθήρ* moves the earth in trying to ascend from beneath it to its natural place in the sky.) Anaxagoras identified *αἰθήρ* with *πῦρ*;<sup>4</sup> so Seneca's account in part agrees with Aristotle's (*N.Q.* 6.9.1): '*Ignem causam motus quidam . . . iudicant, imprimis Anaxagoras,*

<sup>1</sup> Since like *Mete.* it also quotes what is evidently Empedocles' theory (though without naming him), and Seneca goes on to give Aristotle's own theory in 2.12.4.

<sup>2</sup> MSS. have 'Anaxandrus'; Seneca has just given Anaximenes' and Anaximander's theories in 2.17–18, so cannot mean either of them; and Anaxagoras is the only pre-

Socratic whose lightning theory is said by any source to have involved *αἰθήρ* (save for Archelaus, who adopted Anaxagoras' theory: Aetius 3.3.5 DK 60 A 16).

<sup>3</sup> But some MSS. of Hippolytus read *ἐκπύπτοντος* for *ἐμπύπτοντος*.

<sup>4</sup> Aristotle, *Mete.* 339<sup>b</sup> 22, 369<sup>b</sup> 14; *Cael.* 270<sup>b</sup> 24, 302<sup>b</sup> 4.

qui existimat simili paene ex causa et aera concuti et terram. Cum *in inferiore parte* spiritus crassum aera et in nubes coactum eadem vi qua apud nos quoque nubila frangi solent rupit et *ignis* ex hoc collisu nubium cursuque elisi aeris emicuit, hic ipse *in obvia incurrit exitum quaerens ac divellit repugnantia, donec per angustum aut nactus est viam exeundi ad caelum aut vi* et iniuria fecit.' The italicized words roughly correspond to Aristotle's account.

Of the doxographers, Aetius 3.15.4 says: 'Αναξαγόρας ἀέρος ὑποδύσει τῇ μὲν πυκνότητι τῆς ἐπιφανείας προσπίπτοντος, τῷ δὲ ἔκκρισιν λαβεῖν μὴ δύνασθαι τρόμῳ τὸ περιέχον κραδαίνοντος.

Hippolytus *Ref.*1.8.12 (DK 59 A 42): σεισμους δὲ γίνεσθαι τοῦ ἄνωθεν ἀέρος εἰς τὸν ὑπὸ γῆν ἐμπίπτοντος· τούτου γὰρ κινουμένου καὶ τὴν ὀχουμένην γῆν ὑπ' αὐτοῦ σαλεύεσθαι.

Diogenes Laertius 2.9 (DK 59 A 1): σεισμὸν ὑπονόστησιν ἀέρος εἰς γῆν.

All except Seneca agree that earthquakes are due to αἰθήρ or ἀήρ from above the earth which has descended beneath it, and Aristotle's αἰθήρ seems likelier than the doxographers' ἀήρ: Anaxagoras would be more likely to introduce αἰθήρ than ἀήρ from above the earth (since to him there is always ἀήρ beneath the earth, supporting it),<sup>1</sup> and the separation from the cold and dense of hot, fine matter such as αἰθήρ, and its movement to the sky, was an important feature of his system.<sup>2</sup>

Seneca agrees with Aristotle in making fire beneath the earth cause earthquakes by trying to ascend to the sky, but he does not mention its previous descent from above; his statement that the fire is produced below the earth in the same way as lightning above it, though not implausible, is unconfirmed and certainly wrong in detail (see p.428). His account here does not seem to be derived from Aristotle, and is perhaps rather more accurate than the doxographers'.

(c) Anaximenes on earthquakes (DK 13 A 21)

*Mete.*365<sup>b</sup>6–8: 'Αναξιμένης . . . φησὶν βρεχομένην τὴν γῆν καὶ ξηραυομένην ῥήγνυσθαι, καὶ ὑπὸ τούτων τῶν ἀπορρηγνυμένων κολωνῶν ἐμπίπτοντων σειέσθαι.

Aetius 3.15.3, as far as he goes, agrees with this: 'Αναξιμένης ξηρότητα καὶ ὑγρότητα τῆς γῆς αἰτίαν τῶν σεισμῶν, ὧν τὴν μὲν αὐχμοὶ γεννῶσι, τὴν δὲ ἐπομβρίαί. Hippolytus *Ref.*1.7.8 (DK 13 A 7) (σεισμὸν . . . τῆς γῆς ἐπὶ πλεῖον ἀλλοιουμένης ὑπὸ θερμασίας καὶ ψύξεως) is not inconsistent with this, since heat and cold would naturally be thought to cause drought and rain, but is inadequate as an account of the theory.

*N.Q.* 6.10.1: 'Anaximenes ait terram ipsam sibi causam esse motus . . . Quasdam enim partes eius decidere, quas aut umor resolverit aut ignis exederit aut spiritus violentia excusserit . . . [Also] omnia vetustate labuntur nec quicquam tutum a senectute est' (and so parts of the earth collapse with old age and cause earthquakes). Seneca has stated (6.5.1) that different authors regard earthquakes as due to each of the four elements, and in this passage he is trying to find an explanation of earthquakes as caused by earth: allowing for this, my quotation (up to 'ignis exederit') is recognizable as a version of the theory given by Aristotle and Aetius. The rest may conceivably be an alternative theory of Anaximenes', ignored by Aristotle; but much more likely it is another example

<sup>1</sup> Aristotle *Cael.*294<sup>b</sup>13 ff. (DK 13 A 20) etc.

<sup>2</sup> See frags. 12, 15, and Theophrastus, *Sens.*59 (DK 59 A 70).

of Seneca's habit of drifting away from the author he has started to paraphrase. Here Aetius, if not Hippolytus, seems to be more accurate than Seneca.<sup>1</sup>

(d) Democritus on earthquakes (DK 68 A 97–8)

The best-attested feature of Democritus' theory is that earthquakes are due to water. According to *Mete.* 365<sup>b</sup> 1–6 they occur either because water over-fills cavities within the earth, and moves the earth in forcing its way out of them; or because the earth dries, and water in it is drawn from fuller places to empty ones, moving the earth as it moves thither. Aetius 3.15.1 says simply: *Θαλῆς μὲν καὶ Δημόκριτος ὕδατι τὴν αἰτίαν τῶν σεισμῶν προσάπτουσιν.*

Seneca describes Democritus' theory in *N.Q.* 6.20.1–4. Most of this describes ways in which water causes earthquakes, which accords with Aristotle and Aetius: in one of them, as in Aristotle, it causes earthquakes by over-filling a place within the earth (6.20.2: 'aqua . . . ubi in unum locum congesta est' etc.). But Seneca says nothing of the earth's drying as a cause of earthquakes; and he begins his account (6.20.1) by saying that Democritus 'ait . . . motum aliquando spiritu fieri, aliquando aqua, aliquando utroque'. Here, despite Aristotle's silence about *spiritus*, Seneca may be right. Democritus was a later (and more voluminous) writer than Anaximenes, so it is much likelier that ideas of his, ignored by Aristotle, became known to Seneca. Seneca's statement about *spiritus* is the beginning of his report, which (as we have seen) should be the most accurate part; and he seems to have had some special source of information about Democritus, since he twice elsewhere gives accounts—plausible from their ingenious use of the atomic theory—of Democritean ideas mentioned by no one else.<sup>2</sup> Aristotle's silence is not conclusive evidence against Seneca, since his accounts of earlier meteorology are demonstrably incomplete: he fails to mention theories we know of from earlier writers, as well as the doxographers. Thus he says practically nothing about earlier wind theories,<sup>3</sup> and names no earlier writer as proposing one: later writers name eight,<sup>4</sup> and two Hippocratic treatises<sup>5</sup> confirm that there were earlier ideas on wind which Aristotle ignores. Nor does Aristotle mention that any earlier writer had explained thunder and lightning by the action of wind on cloud, though we know from Aristophanes,<sup>6</sup> besides later writers,<sup>7</sup> that this was so: a theory resembling Aristotle's own, like the theory of wind causing earthquakes which Seneca imputes to Democritus. Aristotle in *Mete.* discusses his predecessors in order to refute theories alternative to his own; where their theories anticipate his, he usually ignores them. *N.Q.* 6.20.4 suggests that *spiritus* had but a subordinate part in Democritus' earthquake theory: if so, Aristotle may have thought it not worth mentioning.

It would be rash to trust the details of *N.Q.* 6.20.1–4: Seneca is rarely accurate in detail, and the details he gives here do not agree with Aristotle's.

<sup>1</sup> The earthquake theories of Anaxagoras and (as seems likely: v. DK 12 A 28 and n.) Anaximenes are also reported by Ammianus 17. 7.11–2: I ignore this here, as no estimate of Ammianus' accuracy is needed for my inquiry.

<sup>2</sup> *N.Q.* 4b.9, on how different bodies absorb heat, and 5.2 (DK 68 A 93a), on wind.

<sup>3</sup> Mentioned only at *Mete.* 349<sup>a</sup> 16 ff., 353<sup>b</sup> 6 ff., 355<sup>a</sup> 21 ff., 360<sup>a</sup> 17 ff.

<sup>4</sup> Anaximander (DK 12 A 24 etc.),

Anaximenes (DK 13 A 7(7) etc.), Xenophanes (DK 21 A 46, B30), Heraclitus (DK 22 A 1 (10)), Anaxagoras (DK 59 A 42(11) etc.), Diogenes of Apollonia (DK 64 A 17), Democritus (see n.2 above), and Metrodorus of Chios (DK 70 A 18).

<sup>5</sup> *Vict.* 2.38 and *Nat. Puer.* 2.24–5.

<sup>6</sup> *Nu.* 404–7.

<sup>7</sup> e.g. Aetius 3.3

On the main point, that *spiritus* as well as water causes earthquakes, Seneca may or may not be right: either he is right, and Aristotle made no mention of *πνεῦμα* in describing Democritus' theory for the reason just suggested; or Seneca is wrong, and this is one of the less usual passages where Seneca's report is wrong at the beginning. If Seneca is right, he may have exaggerated the importance of *spiritus* from his desire, mentioned in 6.5.1 and 6.20.1, to find a thinker who regarded earthquakes as due to several but not all the elements.

To sum up: the comparisons just made suggest that the doxographers' reports of pre-Socratic meteorology are usually right as far as they go;<sup>1</sup> their typical fault is incompleteness, which sometimes makes the theory reported incomprehensible without other evidence. When he is covering the same ground as they, Seneca appears about equally accurate. (It may be thought surprising that Seneca is no more accurate than (say) Aetius;<sup>2</sup> but I take it that Seneca, though a scholar in his way, usually quoted from memory; Aetius and his like were mere excerptors, but presumably did have in front of them the texts—of earlier doxographers, I mean, such as Seneca doubtless also used—which they were excerpting.)

In several places Seneca appears to give information not in Aristotle or the doxographers: it is difficult to prove him wrong, but the inaccuracy of his reports of Aristotle and Plato makes it advisable to distrust this extra information; where it comes at the *beginning* of Seneca's report, it has a better chance of being right than when it comes elsewhere.

The passages just discussed (like those I shall discuss in detail in §IV, except for *N.Q.* 3.13–14) are taken from reviews of earlier theories: they are not citations made by Seneca in the course of developing his own arguments, which fact removes one possible cause of inaccuracy. But Seneca reviews earlier theories in order to establish the truth, so that he needs to consider every possible theory, and to consider how each theory would actually work; and this may have led him to discuss modifications and details of earlier theories which were not in his sources, but which he thought deserved consideration. This could account for some of his apparent inaccuracy.

There must always be some doubt about Seneca's reports of the pre-Socratics: as Diels showed in *Doxographi Graeci*, Aetius' work is derived at second hand from Theophrastus, which makes him a third-hand source for the pre-Socratics; and the same presumably applies to Seneca, who is no better than Aetius. At *N.Q.* 2.12.3, where Seneca's source is evidently Aristotle, there is only one intermediary between Seneca and Anaxagoras; but in the other cases where Seneca and *Mete.* report the same pre-Socratic theories Seneca's report is so different as to suggest that *Mete.* was not his source (or not directly). The natural assumption is that he used some doxographic source derived from Theophrastus, such as Diels's *vetusta placita* (especially where he describes several pre-Socratic theories in successive or nearly successive chapters, as in *N.Q.* 2.17–20 and 6.9–12). But I doubt he used just one source; I have already suggested three: Aristotle, the *vetusta placita*, and some special source for Democritus (p.430); what he

<sup>1</sup> This is confirmed by other passages where Aristotle and Aetius report the same theory: compare *Mete.* 342<sup>b</sup> 25 ff. with Aetius 3.2.2 (DK 59 A 81), *Mete.* 345<sup>a</sup> 13 ff. with Aetius 3.1.2 (DK 41.10, 58 B 37c). (*Mete.* 348<sup>b</sup> 12–4 neither confirms nor contradicts Aetius 3.4.2

(DK 59 A 85). I ignore passages where Aristotle reports a theory without saying who held it.)

<sup>2</sup> Cf. P. J. Bicknell, 'Seneca and Aetius on Anaximander's and Anaximenes' accounts of thunder and lightning', *Latomus* 27 (1968), 181–4.

tells us of the pre-Socratics may well combine memories of a wide variety of sources. However, whatever sources Seneca used, his accounts of pre-Socratic theories, like those of Aetius, generally agree with Aristotle's, at least roughly or in part, and Aristotle's information presumably was first hand: though some uncertainty must remain, we should accept Seneca's reports as at least approaches to the truth, except where there is special reason not to do so.

#### IV. SOME APPLICATIONS, ESPECIALLY CONCERNING THE MILESIAINS

From the conclusions just reached it follows that we should accept as at least roughly correct Seneca's accounts of pre-Socratic theories reported by no one else: such as *N.Q.* 4b.9, 5.2 and 7.3.2, describing Democritean ideas on heat, wind, and the planets; 6.12.1–2, on Archelaus' earthquake theory; and 2.56.1, citing an opinion of Heraclitus on lightning—though in that case the obscurity of Heraclitus' style makes it much likelier that his view has been seriously corrupted or misunderstood. But Seneca's usual inaccuracy makes it unwise to infer anything from a mere allusion to an earlier view: I doubt we can deduce anything about Anaxagoras from 4b.3.6, 'Quare non et ego mihi idem permittam quod Anaxagoras?', even though the context must surely contain some reference to his view of snow and hail, had we the clue to it.<sup>1</sup>

I conclude by discussing in more detail some passages of Seneca on the Milesians, in the light of the conclusions so far reached.

##### (a) Anaximander and Anaximenes on thunder and lightning<sup>2</sup>

*N.Q.* 2.17–18: Ut Anaximenes ait,<sup>3</sup> spiritus incidens nubibus tonitrua edit et, dum luctatur per obstantia atque interscissa vadere, ipsa ignem fuga accendit. (18) Anaximandros omnia ad spiritum retulit. Tonitrua, inquit, sunt nubis ictae sonus. Quare inaequalia sunt? Quia et ipse <spiritus>. Quare et sereno tonat? Quia tunc quoque per crassum et scissum aera spiritus prosilit. At quare aliquando non fulgurat et tonat? Quia spiritus infirmior non valuit in flammam, in sonum valuit. Quid est ergo ipsa fulguratio? Aeris diducentis se corruentisque iactatio languidum ignem nec exiturum aperiens. Quid est fulmen? Acrioris densiorisque spiritus cursus.

Aetius 3.3.1–2 (DK 12 A 23, 13 A 17): περί βροντῶν ἀστραπῶν κεραυνῶν πρηστῆρων τε καὶ τυφῶνων. Ἀναξίμανδρος ἐκ τοῦ πνεύματος ταυτί πάντα συμβαίνει· ὅταν γὰρ περιληφθὲν νέφει παχεί βιασόμενον ἐκπέσῃ τῇ λεπτομερείᾳ καὶ κουφότητι, τόθ' ἡ μὲν ῥῆξις τὸν ψόφον, ἡ δὲ διαστολὴ παρὰ τὴν μελανίαν τοῦ νέφους τὸν διαυγασμὸν ἀποτελεῖ.

Ἀναξίμενης ταῦτα τοῦτω προστιθεῖς τὸ ἐπὶ τῆς θαλάσσης, ἥτις σχιζομένη ταῖς κώπαις παραστίλβει.

Hippolytus *Ref.* 1.6.7 (DK 12 A 11, on Anaximander): ἀστραπὰς . . . ὅταν ἄνεμος ἐμπίπτων (Cedrenus ἐκπίπτων) διστᾷ τὰς νεφέλας.

Hippolytus *Ref.* 1.7.8 (DK 13 A 7, on Anaximenes): ἀστραπὴν . . . ὅταν τὰ νέφη διστῇται βία πνευμάτων· τούτων γὰρ δισταμένων λαμπρὰν καὶ πυρώδη γίνεσθαι τὴν αὐγὴν.

<sup>1</sup> The clue must have been in the lost beginning of book 4b.

<sup>2</sup> For a detailed discussion see Hine, pp.419–32; for a different view, Bicknell, *op.cit.*

<sup>3</sup> Oltramare, with most editors, reads 'Ita, ut Anaximenes', thus making

Anaximenes' theory an illustration of the preceding sentence, which compares thunder to the noise of red-hot iron quenched in water; but Hine omits *Ita*, pointing out (pp.420 f.) that Anaximenes' theory makes a bad illustration and that *Ita* is not found in the best manuscripts.



We have seen that, in meteorology, Aetius is likely to be right as far as he goes; and we know from Aristophanes *Nu.* 404–7 (already cited) that the theory he describes, of wind trapped in cloud and bursting out, is genuinely early. Probably, therefore, Aetius is roughly correct. As elsewhere, Hippolytus is not inconsistent with him (especially if we read *ἐκ πίπτων* in 1.6.7), though grossly inadequate.

Seneca agrees with them in making thunder and lightning due to the violent action of wind on cloud, and the beginning of his account of Anaximander seems to resemble Aetius verbally.<sup>1</sup> But what of 'Quare inaequalia' etc.? Both the manner of it—the imaginary dialogue—and much of the matter—the explanation of details, and rare variant phenomena, in 'Quare inaequalia . . . in sonum valuit'—are typical of Seneca,<sup>2</sup> and most unlikely to have been found in the doxographic sources on which (we may presume) he was drawing: it is highly improbable that more of these details have been preserved from Anaximander than from any later pre-Socratic, or from Aristotle.<sup>3</sup> Anaximander is indeed likely to have explained *fulguratio* (i.e. *ἀστραπή*) or *fulmen* (i.e. *κεραυνός*) or both; but Seneca's account—in dialogue, and following such implausible statements—does not create confidence: we may presume he had authority for the first eleven words of 2.18, but in the rest he is probably elaborating or reconstructing Anaximander's theory on his own. (Even if what he says was in his immediate source, much of it cannot go back to Anaximander.)

Seneca's account of Anaximenes, and of Anaximander up to 'nubis ictae sonus', differs from Aetius in suggesting that the wind strikes clouds from outside, instead of bursting out from within. We have already met this confusion with Anaxagoras, and Hippolytus here illustrates how it could arise: his account of Anaximenes could be taken either way, and doubt about one letter of his text creates the same doubt for Anaximander. Aetius is here the most detailed and explicit, and so seems to me most likely to be right; indeed, Seneca *could* mean that wind strikes the clouds from within.

Seneca also differs from Aetius in saying that fire is involved in causing lightning. Here he may be right: early thinkers may have thought *πῦρ* was present even in phosphorescence.

#### (b) Thales on earthquakes

*N.Q.* 3.13.1–14.2 (mostly DK 11 A 15): Ut Thales ait, [aqua] valentissimum elementum est. Hoc fuisse primum putat, ex hoc surrexisse omnia . . . (14.1) Quae sequitur Thaletis inepta sententia est. Ait enim terrarum orbem aqua sustineri et vehi more navigii mobilitateque eius fluctuare tunc cum dicitur

<sup>1</sup> Hine pp.419 f. says that 'omnia ad spiritum retulit' means that *spiritus* was the first principle of Anaximander's cosmology. But I cannot believe that Seneca would introduce (and dismiss) so abruptly, and with so little explanation, a point so irrelevant to the context: Hine compares 3.13.1, on Thales' first principle, but that is much more explicit (see below). If 'omnia' cannot mean 'all the phenomena I am talking about', then (as Hine alternatively suggests) *haec* or *ista* must be added to the text.

<sup>2</sup> Imaginary dialogue: e.g. *N.Q.* 2.1.3–4; 2.13.3; 2.14.1; 2.25–6; 2.28.1. Details and

rare variant phenomena: e.g. 1.1.15 (thunder from a clear sky); 2.26.8–9 (lightning on clear nights); 2.27 (varieties of thunder); 2.30.1 (thunder and lightning associated with volcanic eruptions); 2.40 (varieties of thunderbolt).

<sup>3</sup> Diogenes of Apollonia, according to *N.Q.* 2. 20.1, explained thunder unaccompanied by lightning, and *Mete.* 369<sup>b</sup> 1 ff. explains the *παντοδαποὶ ψόφοι* of thunder. I do not think any of the three questions in 'Quare inaequalia . . . in sonum valuit' are answered elsewhere in any account of a pre-Socratic or in Aristotle.

tremere; non est ergo mirum si abundat umor ad flumina profundenda, cum in umore sit totus. (2) Hanc veterem et rudem sententiam explode . . . [Here 3.13 cites Thales in support of the cosmic importance of water, and 3.14 seems to be just a digression.]

*N.Q.* 6.6.1–3 (on the cause of earthquakes); In aqua causam esse nec ab uno dictum est nec uno modo. Thales Milesius totam terram subiecto iudicat umore portari et innare, sive illud oceanum vocas, sive magnum mare, sive alterius naturae simplicem adhuc aquam et umidum elementum. Hac, inquit, unda sustinetur orbis velut aliquod grande navigium et grave his aquis quas premit. (2) Supervacuum est reddere causas propter quas existimat gravissimam partem mundi non posse spiritu tam tenui fugacique gestari; non enim nunc de situ terrarum sed de motu agitur. Illud argumenti loco ponit aquas esse in causa quibus hic orbis agitetur, quod in omni maiore motu erumpunt fere novi fontes, sicut in navigiis quoque evenit ut, si inclinata sunt et abierunt in latus, aquam sorbeant . . . (3) Hanc opinionem falsam esse non est diu colligendum.

Several of these statements are confirmed by the best testimony we have for any of Thales' theories: Aristotle tells us that water was Thales' ἀρχή, from which all things have come to be (*Metaph.* A 983<sup>b</sup>6 ff. (DK 11 A 12)); and that 'they say' Thales said water supports the earth like floating wood (*Cael.* 294<sup>a</sup>28 ff. (DK 11 A 14)): ἐφ' ὕδατος κεῖσθαι [sc. τὴν γῆν] . . . φασὶν εἰπεῖν Θαλῆν τὸν Μιλήσιον ὡς διὰ τὸ πλωτὴν εἶναι μένουσαν ὥσπερ ξύλον ἢ τι τοιοῦτον ἕτερον (καὶ γὰρ τούτων ἐπ' ἀέρος μὲν οὐθὲν πέφυκε μένειν, ἀλλ' ἐφ' ὕδατος). It is, I think, unlikely that this reason was actually given by Thales: it was natural for Anaximenes, having made ἀήρ his ἀρχή, to suppose that the earth rests on it; but in earlier thought ἀήρ was of little importance, and the idea that earth might rest on it is unlikely to have occurred to anyone, even to be dismissed. Therefore Thales can hardly have said that the earth cannot rest on ἀήρ; and, if not, we must *a fortiori* reject as imaginary the additional reasons at which Seneca hints in *N.Q.* 6.6.2. We must also reject Seneca's account of the argument on which Thales based his earthquake theory (*N.Q.* 6.6.2, 'Illud argumenti' etc.): if Aristotle had to guess Thales' reasons for making water his ἀρχή (*Metaph.* A 983<sup>b</sup>22 ff.), it is incredible that Seneca really knew how he supported his (less important) earthquake theory.

This does not disprove the earthquake theory itself: but there is little other evidence that Thales had anything to say about earthquakes. Hippolytus *Ref.* 1.1.1–2 says that Thales ἔφη ἀρχὴν τοῦ παντός εἶναι καὶ τέλος τὸ ὕδωρ. ἐκ γὰρ αὐτοῦ τὰ πάντα συνίστασθαι πηγνυμένων καὶ πάλιν διανιεμένων ἐπιφύεσθαι τε αὐτῷ τὰ πάντα, ὥρ' οὐ καὶ σεισμούς καὶ πνευμάτων συστροφὰς καὶ ἄστρον κινήσεις γίνεσθαι. But a late writer who tells us more than Aristotle could about the working of Thales' ἀρχή<sup>1</sup> does not inspire confidence.<sup>2</sup> To say simply that water causes earthquakes (or wind, or anything else) was an obvious invention for anyone who knew water was Thales' ἀρχή; which consideration also arouses doubt about Aetius 3.15.1 (quoted p.430).<sup>3</sup>

<sup>1</sup> Cf. πηγνυμένων . . . διανιεμένων, unparalleled in Aristotle *Metaph.* A 983<sup>b</sup>6 ff. (DK 11 A 12).

<sup>2</sup> 'Of small value' say Kirk and Raven (*Presocratic Philosophers*, pp.5 f.) of Hippolytus' report of Thales.

<sup>3</sup> M. L. West, *Early Greek Philosophy and*

*the Orient* (1971), p.210, also refers to Thales Aetius 3. 15.9 οἱ δὲ φασιν ἐφ' ὕδατος [sc. ἐποχεῖσθαι τὴν γῆν], καθάπερ τὰ πλαταμώδη καὶ σανιδώδη ἐπὶ τῶν ὑδάτων· διὰ τοῦτο κινεῖσθαι. But we can hardly regard this as independent evidence for Thales when Aetius does not name him.

Nevertheless, the primitiveness of the analogy in *N.Q.* 3.14.1 has led some normally sceptical scholars to accept it.<sup>1</sup> Neither there nor in *N.Q.* 6.6 does Seneca begin with an account of the earthquake theory; but it is clear from his rejection of it that it is not his own view, i.e. this is not a passage where the citation ends sooner than appears, and Seneca has gone on to give an earthquake theory of his own; and at 6.6 the earthquake theory is the *purpose* of the passage, i.e. it is not 'artistic detail, to lend an air of verisimilitude' to what Seneca says at the beginning of the chapter. It is therefore unlikely that Seneca has invented the earthquake theory (cf. p.424); he probably found it in his source.

Nevertheless the chances are against its being genuinely Thales' theory. Considering how little even Aristotle knew about Thales,<sup>2</sup> we ought to be suspicious of any unsupported statements about him in a writer as late as Seneca. Seneca clearly did not take much care about the accuracy of his statements on earlier thinkers (see pp.425 f.), he is not usually more accurate than Aetius or Hippolytus (p.431); and there are few who accept their statements about Thales, where unconfirmed by earlier testimony. Those who reject them ought not to accept Seneca's account of Thales' earthquake theory.<sup>3</sup>

(c) Thales on the Nile floods

*N.Q.* 4a.2.22: 'Si Thaleti credis, etesiae descendenti Nilo resistunt et cursum eius acto contra ostia mari sustinent. Ita reverberatus in se recurrit, nec crescit, sed exitu prohibitus resistit et quacumque mox potuit in se congestus erumpit.'<sup>4</sup>

I said above that we ought to distrust unconfirmed statements by Seneca about earlier thinkers; I quote this last passage to show how Seneca's evidence may be of value when combined with the testimony of others on the same subject, even though the others, taken individually, are as unreliable as Seneca. Six sources besides Seneca purport to give Thales' theory of the Nile floods: the Latin 'liber Aristotelis de inundacione Nili';<sup>5</sup> Diodorus 1.38.2; Aetius 4.1.1; Diogenes Laertius 1.37; the scholiast on Apollonius Rhodius 4.269; and the 'Anonymus Florentinus'.<sup>6</sup> all describe essentially the same theory as Seneca, except that the scholiast combines it with the view (elsewhere attributed to others)<sup>7</sup> that the flood is due to the Etesians blowing clouds onto the mountains of Ethiopia—an addition clearly due to a private muddling up by the scholiast or his source of the generally accepted tradition.

Now the Latin version of 'Aristotle' is presumably derived from its Greek original—whether that was by Aristotle or another—without reference to any of our other sources; Diodorus' source is generally supposed to have been Agatharchides;<sup>8</sup> and Seneca and Aetius—if they did not use 'Aristotle' directly—would seem more likely to depend on a philosophic source than on Agatharchides

<sup>1</sup> e.g. Kirk and Raven, op.cit., p.92; G. E. R. Lloyd, *Polarity and Analogy* (1966), p.308. Others have rejected it, e.g. H. Diels, *Doxographi Graeci* (1879), p.255.

<sup>2</sup> Cf. Kirk and Raven, op.cit., p.85; Guthrie, *History of Greek Philosophy* 1.45.

<sup>3</sup> The same applies to the statement in *N.Q.* 3. 14.1 that the earth's floating on water accounts for the supply of water to maintain the rivers.

<sup>4</sup> This is Oltramare's text, which includes emendations; but I do not think there is

doubt about the main point, that the Etesians cause the flood by holding up the Nile in its course.

<sup>5</sup> A Latin summary of a Greek work attributed in antiquity to Aristotle (see *Aristotelis fragmenta*, ed. V. Rose (1886), frg.248).

<sup>6</sup> For a brief account of these sources see Diels, *Doxographi Graeci*, pp. 226–9.

<sup>7</sup> See B. Postl, *Die Bedeutung des Nil in der römischen Literatur* (1970), p.65.

<sup>8</sup> See, e.g., Diels, op.cit., p.227.

or Diodorus, i.e. something like Diels's *vetusta placita*. We thus have at least three *independent* witnesses to the Hellenistic view of Thales' theory: clearly, the common source whence they are derived must be *early* Hellenistic at latest<sup>1</sup>—very likely it was Aristotle's own work. Finally, the theory ascribed to Thales is at least as old as Herodotus 2.20, though he does not say whose it was. The evidence that Thales held this theory is very nearly as good as for those theories where we have Aristotle's direct testimony.

In this paper I have concentrated on the pre-Socratics. Seneca is, however, more important as a source for later thinkers; perhaps most important for Posidonius. I believe that what I have said of Seneca's methods in quoting Aristotle and Plato should also be relevant to his quotations from later writers. For example, Edelstein and Kidd<sup>2</sup> print the whole of *N.Q.* 2.54–55.3 as Posidonius F135, although only the first sentence mentions Posidonius, and there is no necessary connection between 2.54 and 2.55: 2.55 follows naturally enough on 2.54, but would serve equally well as a defence of any of the theories which make thunder due to wind acting violently on cloud. In my opinion, the argument of this paper makes it dangerous to use 2.55 as a source for Posidonius. I cannot, however, discuss this here in detail.<sup>3</sup>

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<sup>1</sup> The case is different with Thales' earthquake theory, for which Seneca, Aetius, and Hippolytus may well depend on a *late* Hellenistic source.

<sup>2</sup> *Posidonius*, ed. by L. Edelstein and

I. G. Kidd, vol. 1 (1972).

<sup>3</sup> I should state, however, that I understand from Professor Kidd that he regards 2.55 as 'of possible relevance' for Posidonius, but not a direct report of him.