

PROLOGUE

I

The Springs of Reason

(a) *The art of thinking*

Logic is a Greek discovery. The laws of thought were first observed in ancient Greece; and they were first articulated and codified in Aristotle's *Analytcs*. Modern logicians surpass Aristotle in the scope of their enquiries and in the technical virtuosity of their style; but for elegance of conception and rigour of thought he is their peer, and in all things their intellectual father.

Aristotle was conscious of his own prowess: commendably immodest, he trumpeted his achievement and solicited the gratitude of posterity. Yet God, as John Locke caustically observed, 'has not been so sparing to Men to make them barely two-legged Creatures, and left it to *Aristotle* to make them Rational'. If Aristotle's predecessors did not study the art of ratiocination, they were expert in its practice; if they were not logicians, they were thinkers of depth and power. Nor indeed was anyone better aware of this than Aristotle himself: Aristotelian man is essentially a reasoner; and Aristotle's writings describe and praise the attainments of those men who first discovered and charted the broad oceans over which the stately galleon of his own philosophy was to sail.

Pre-eminent among those voyagers were Plato and Socrates; but they too had at their disposal a serviceable set of navigational aids. The aids were prepared by a motley band of doctors and poets, scientists and charlatans, on whom their customary title imposes a spurious community. They are the Presocratic philosophers; and their works are the subject of this book. The term 'Presocratic' is stretched a little: some of the thinkers I shall discuss were Socrates' contemporaries rather than his seniors. And the term 'philosopher' is elastic by its very nature: my Presocratics are men of widely differing interests and professions. The storms of time have not been kind to them: their ships are wrecked, a few shattered planks alone surviving. But our meagre evidence shows something of the men: it reveals (to change the metaphor) that they sought out and drank from the springs of reason; and if that original and heady potation at times induced a trembling delirium in their brains, we still owe them an immeasurable debt for their precocious intoxication. Their tipsy gait taught us to walk more steadily; had they not drunk, we should only shamble.

The Presocratic philosophers had one common characteristic of supreme importance: they were rational. And it is their rationality which this book aspires to exhibit and to celebrate. But Presocratic rationality is often misunderstood, and sometimes mistakenly denied. Let me briefly elucidate my assertion that the Presocratics were rational men.

First, that assertion does not imply that the Greeks, as a race, were peculiarly devoted to reason or peculiarly devoid of superstition. Modern scholarship has abundantly

illustrated how folly, unreason, and the bonds of superstition were as oppressive in classical Greece as in any other age or land. The average Greek was doubtless as silly as the average Englishman; and the educated men of the sixth and fifth centuries BC were as barbarous and as bigoted as the educated men of today. The Presocratic philosophers were not typical of their fellows: they rose above the vulgar.

Again, it is a simple mistake to think that rationality is the hallmark or the prerogative of the natural sciences. The Presocratics were indeed the first empirical scientists; and in the history books it is the scientific endeavours of the early thinkers which hold pride of place. But reason is omnivorous; it does not pasture exclusively in scientific fields; and the Presocratics did not confine their reasoning powers to a monotonously scientific diet. It is the non-scientific aspects of Presocratic thought with which I am primarily concerned: I shall discuss their metaphysics, not their meteorology.

Third, it is not to be supposed that rational men must resolutely reject the supernatural. Scholars often, and rightly, contrast the naturalistic cosmogonies of the Milesian philosophers with such mythological stories as we find in Hesiod's *Theogony*. Yet the essence of the contrast is sometimes misrepresented: what is significant is not that theology yielded to science or gods to natural forces, but rather that unargued fables were replaced by argued theory, that dogma gave way to reason. Theology and the supernatural may be treated dogmatically or rationally: if the Presocratics reject the blank assertions of piety and poetry, that rejection by no means entails the repudiation of all things divine and superhuman.

Fourth, rational men are not obliged to dream up their ideas for themselves, aloof, autonomous and impervious to influence, classical scholars have, with limited success, investigated the origins and antecedents of Presocratic opinions. Many scholars, having located, or conjectured, the source of an opinion, go on to infer that any argument offered for that opinion is mere rationalization: borrowed beliefs, they suppose, are necessarily unreasoned. The absurdity of that inference is patent: evidently, we may purchase opinions from other men and then advance them for our own. The Presocratics, like all rational men, bought many of their opinions off the peg.

Finally, what is rational is not always right; reasoned beliefs are often false; and reasoning—even good and admirable reasoning—is not invariably clear and cogent. Few Presocratic opinions are true; fewer still are well grounded. For all that, they are, in a mild but significant sense, rational: they are characteristically supported by argument, buttressed by reasons, established upon evidence.

Thus in saying that the Presocratics were rational men I mean no more than this: that the broad and bold theories which they advanced were presented not as *ex cathedra* pronouncements for the faithful to believe and the godless to ignore, but as the conclusions of arguments, as reasoned propositions for reasonable men to contemplate and debate. And in holding that the Presocratics were the fathers of rational thought I hold only that they were the first men self-consciously to subordinate assertion to argument and dogma to logic. Some readers may wonder if such a weak form of rationality is not too common a property to merit admiration: to them I commend the aphorism of Bishop Berkeley: All men have opinions, but few men think.

(b) *Thales on magnets and water*

The originator of natural philosophy, according to Aristotle, was Thales the Milesian (*Met* 983b20=11 A 12). Thales' name is connected with the solar eclipse of 585 BC; he and his native town of Miletus flourished at the beginning of the sixth century. The two theses on which Thales' reputation must rest are not, at first blush, remarkable for their sobriety: 'the magnet has a soul'; 'everything is water'. Yet the first judgment, I shall argue, betrays a keen philosophical eye; the second marks the beginnings of Western science; and both are supported by simple but rational considerations.

I start with the magnet:

Aristotle and Hippias say that [Thales] gave inanimate things (*ta apsucha*) too a share in soul (*psuchê*), taking his evidence from the magnetic stone and from amber (1: Diogenes Laertius, 1.24=A 1; cf. Scholiast to Plato, A 3).

Aristotle's words have survived:

It seems, from what they report, that Thales too supposed the *psuchê* to be a sort of motor, given that he said that the magnet has a *psuchê* because it moves iron (2: *An* 405a19–21=A22).

Aristotle does not name his reporter, but it is a plausible conjecture that he alludes to Hippias of Elis, the second authority named by Diogenes. Hippias, a fifth-century Sophist of some distinction, is sometimes hailed as the inventor of the history of ideas; but according to his own account he compiled not a history but a chrestomathy, a collection of wise or ingenious saws, culled from a variety of sources, and woven into 'a new and manifold argument' (86 B 6).¹ Thales' magnets and amber evidently caught Hippias' jackdaw eye; but where they lay during the century and a half from Thales to Hippias, we cannot tell.

The argument which Hippias preserved has a pleasing simplicity.

Thales adduced two premisses:

- (1) If anything has a motor, it has a *psuchê*;
- (2) Magnets and pieces of amber have motors; and he inferred that:
- (3) Magnets and pieces of amber have a *psuchê*.

The sceptical will point out that only the conclusion, (3), is unequivocally ascribed to Thales in our sources: premiss (1) is introduced by Aristotle with a cautionary 'it seems', and premiss (2) with the conjunction 'given that'. Perhaps the whole argument was constructed by Aristotle, or by Hippias, and falsely fathered upon Thales?

That melancholy supposition cannot, I think, be disproved; yet I do not find it plausible. Aristotle's 'given that (*eiper*)' most probably means 'since', and thus definitely attributes (2) to Thales; and in any case we can hardly fail to think that Thales rested his paradoxical view upon (2) or some equivalent premiss. And if we give (2) to Thales, it is clear that we may give him (1) to complete the deduction.

What is the sense, and what the cogency, of Thales' argument? The word *psuchê* is commonly translated by 'soul'; and in most contexts this translation is reasonable enough. Here, however, the standard translation masks the charm of the argument, and a heterodox rendering has some justification.

To have a *psuchê* is to be *empuschos*. *Empuschos* means 'animate' or 'living': *ta empuscha* and *ta apuscha* jointly exhaust the natural world, being the animate and the inanimate portions of creation. The *psuchê*, then, as Aristotle says, is simply 'that by which we are alive' (*An* 414a12): it is the source or principle of life in animate beings, that part or feature of them (whatever it may be) in virtue of which they are alive.² In short, an *empuschon* is an animate thing; and its *psuchê* is its animator. Instead of 'soul', then, I propose the term 'animator' as a translation of *psuchê*; and I prefer the comic overtones of 'animator' to the theological undertones of 'soul'.

What are the criteria for life? According to Aristotle, 'things are said to be alive on several accounts, and if just one of these belongs to a thing we say that it is alive—viz. understanding, perception, change and rest in place, and again the change brought on by nourishment, and decay and growth' (*An* 413a22–5). More generally, 'the animate seems to differ from the inanimate by two things in particular, motion and perception' (*An* 403b25–7). Aristotle is not putting forward a philosophical thesis here: he is recording, and accepting, a commonplace. Anything that has powers of cognition, of which perception is the most common and the most evident example, is alive; and anything which has the power to alter itself or its environment, of which autonomous locomotion is the most evident example, is likewise alive. If the great marks of animation are the power to perceive and the capacity to locomote or to cause locomotion, then a *psuchê* or animator will be essentially a source of perception, or a perceptor, and a source of motion, or a motor.

Thales' argument now has a superficial plausibility. His first premiss is a platitude: motors—that is to say, self-starting motors—are, on Aristotle's own account, and in ordinary thought, animators or *psuchai*; and anything capable of autonomous locomotion is thereby shown to be animate. His second premiss is a matter of ordinary observation: magnets and pieces of amber are seen to possess the power to cause locomotion in other things and to move themselves. And the conclusion follows: magnets and pieces of amber are animate beings; they may not have the faculty of perception, but for all that they are alive.

Thales' successors ignored his argument. Later scientists felt the force of magnetic attraction, and offered crude mechanistic hypotheses to explain it; but they did not, so far as we know, stop to ponder Thales' curious conclusion.³ Even Aristotle, who was aware of Thales' argument and who must have seen its power, says nothing directly against it; yet Aristotle hardly believed that magnets were alive.

Aristotle's psychology does, however, contain an implicit answer to Thales; and a short sketch of that answer may bring out the philosophical interest of the magnet.

The magnet, Aristotle would have said, does not initiate locomotion after the fashion of genuinely animate beings. Animate motion is necessarily caused by a 'desire', or *orexis*, on the part of the mover; it is, in a later jargon, preceded by a 'volition' or act of will. But magnets do not have desires or perform acts of will. Thus magnets may move, but they do not move in the manner of living things. To this, Thales has a retort: perhaps magnets do have primitive desires; perhaps their passion for knives and needles, and their

indifference to silver churns, evinces a discrimination and a will? And if Aristotle adds that desire implies perception and judgment, Thales will simply say that the discriminatory capacities which magnets, like computers or potato-sorting machines, exhibit are primitive perceptions—and he will have some modern psychologists on his side.

Aristotle distinguishes between ‘rational’ and ‘irrational’ powers: if *a* has a rational power to ϕ , then *a* can both ϕ and refrain from ϕ ing; if *a*’s power to ϕ is irrational, then *a* can ϕ but cannot refrain from ϕ ing. Animate movers have rational powers: they can withstand temptation, or be bloody-minded. But the magnet is weak-willed and intemperate; if a piece of iron is placed at a suitable distance from it, locomotion commences, and the magnet has no choice in the matter. Magnets are not free: that is why they are not alive.

I do not offer this as the correct rebuttal of Thales’ argument; evidently the debate can continue. But enough has, I hope, been done to indicate that Thales’ argument is not a naive aberration or a puerile sophism; it raises puzzles of a distinctively philosophical nature. Thales’ magnet is the ancient equivalent of the clockwork animals of the eighteenth century and of our modern chess-playing computers: we know that mechanical toys are not alive; and we suspect that the most ingenious computer lacks something that every rabbit possesses. Yet if we attempt to justify those convictions or suspicions, we soon find ourselves lost in the thickets of the philosophy of mind. Vaucanson and Turing are justly celebrated for the challenge they made to lovers of the mind: Thales, I claim, deserves a small bow of recognition.

According to Hippias, Thales did not rest content with (3): he said, more generally, that inanimate things have *psuchai*. It is reasonable to associate this conclusion with the apophthegm ‘everything is full of spirits’ which, in various forms, is ascribed to Thales (Aristotle, *An* 411a7=A 22; Aëtius, A 23; etc.: the same authorities present Thales with the view that the world as a whole has a soul, and Aristotle conjectures that this may have been the source of the apophthegm; but the opposite derivation is more probable). The purport of this generalization of (3) is uncertain: did Thales merely remark that (3) should prepare us for further surprises, that the world is not divided into animate and inanimate as easily as we might think? Should we rather press upon him the assertion that everything is animate, that the common distinction between animate and inanimate objects is illusory? And if we do press this upon him, are we to dismiss it as irresponsible enthusiasm? Or can we ascribe to him the philosophical reflexion that if the common criteria for distinguishing the living from the non-living yield results like (3), then those criteria must be vain creations of the human mind, marking no difference in external reality?

Such questions have no answers: even to pose them may be deemed a sign of speculative lunacy; and I turn hastily to Thales’ second and more notorious contribution to rational thought:

Thales...says that [the material principle] is water, and that is why he asserted that the earth rests on water (3: Aristotle, *Met* 983b20–2=A 12).

Thus we have two aqueous asseverations:

(4) The material principle of everything is water.

(5) The earth rests on water.

I shall first consider (5).⁴ Two chapters of Aristotle's *de Caelo* deal with the position and shape of the earth; and in his historical survey Aristotle adverts again to Thales:

Some say that [the earth] rests on water. For this is the oldest theory that has been handed down to us, and they say that Thales of Miletus propounded it, supposing that it remains there because it can float, like wood or something else of that sort (4:294a28–31 =A 14: again Hippias is probably Aristotle's source).

Here (5) is presented independently of (4) and with an argument of its own.

Some scholars discern a spark of genius in the argument: Thales' quick spirit tackled the grand and remote question of the earth's support by a homely analogy with floating logs; as Newton sat beneath his apple-tree and invented gravity, so Thales sat on a river-bank dreaming of astronomy. Yet Thales' spark is dim: had he amused himself by throwing stones into his river, he might have inferred that whatever the earth floats upon it is not water. The analogy will not do.⁵ In any case, Thales' answer recalls Locke's Indian philosopher, who held that the earth rests on the back of an elephant, the elephant on a tortoise, and the tortoise on 'something, he knew not what'. Aristotle puts the point briskly: 'as if the same argument did not apply to the earth and to the water supporting the earth' (*Cael* 294a32–3=A 14). And that, I think, disposes of Thales' claim to genius here.

For all that, Thales' argument has an extrinsic importance. First, its analogy provides the first example of a marked characteristic of Presocratic thought: from Thales onward, analogical illustration and argument are frequent; the analogies are often drawn from humble and unscientific areas, and they are sometimes spun out with some ingenuity. I shall discuss this at more length in a later context (below, pp. 52–6).

Second, Thales offered the first non-mythological answer to a standing problem in Greek science. Aristotle explains the problem with unusual lucidity: 'It would take, I suppose, a somewhat dull mind not to wonder how in the world it can be that a small piece of earth, if released in mid-space (*meteôristhen*), moves and will not stay where it is (and the bigger it is, the faster it moves), while if you were to put the whole earth in mid-space and release it, it would not move; in fact, heavy as it is, it is stable. And yet if you took a moving piece of earth and took the ground from under it before it fell, it would move on and downwards as long as nothing obstructed it. Hence puzzling about this naturally became a philosophical problem for everyone' (*Cael* 294a12–20). Two apparently obvious truths generate the puzzle: first, the earth is clearly at rest; second, the earth is clearly in mid-space. The conjunction of the two is paradoxical, given the observed behaviour of portions of earth.

Thales answered the paradox by denying that the earth is in mid-space; his successors, noticing the infelicity of his proposal, attempted other solutions. Their attempts are sophisticated and of some interest; and they too will be discussed at some length (below, pp. 23–8).

Thales' other watery thesis, (4), poses intricate problems of interpretation. Scholars agree that he cannot have stated (4) as it stands; for it uses the terminology of a later age. Yet (4) encourages the ascription to Thales of some such sentiment as:

(6) Everything is from water (*panta ex hudatos estin*).

It is easy to imagine that Aristotle rendered (6) by (4); and parallels to (6) can be found in the earliest remnants of Presocratic thought.

Was Aristotle's interpretation of (6) correct, and was Thales a 'material monist'? If Aristotle is wrong, what can Thales mean by (6)? I shall return to these questions later. Here, leaving the sense of (6) partly indeterminate, I ask why Thales assented to such a strange hypothesis, and why he should have subscribed to:

(7) There is some single stuff from which everything is, which is immediately entailed by (6).

Our texts provide no answer to these questions; but it is not hard to excogitate one. (7) offers what is, in a very obvious sense, the simplest hypothesis that will account for the constitution of the world: unity is simpler than plurality; a postulated unity is more fundamental than a plurality. Science always strives for economy and simplicity in explanation; and in adopting (7) Thales was only proving himself an embryonic scientist; he saw that (7) was eminently simple and because of its simplicity he adopted it as a hypothesis.

Given that Thales subscribed to (7), why did he pick on water as his basic stuff, and plump for (6)? Aristotle and Theophrastus supply a set of arguments, which amount to the claim that water is essential in various ways to the existence of living creatures (*Met* 983b22–7=A 12; Simplicius, A 13; cf. Aëtius, I.3.1). Now Aristotle's remarks are explicitly conjectural; and Theophrastus joins Thales with Hippo of Rhegium, a fifth-century thinker of little note who later adopted (4) as his own (cf. Hippolytus, 38 A 3; Alexander, A 6; Philoponus, A 10): most scholars suppose that the arguments were propounded in a work of Hippo's and projected back onto Thales by the Peripatetics. They may be right: other arguments can be invented (it is usually observed that water, alone of the common constituents of the world, is regularly found in gaseous, solid and liquid states); or we may prefer to suppose that Thales adopted water as a whimsy.⁶ But Hippo's reasons are not recondite; nor are they wholly unintelligible reasons, given Thales' psychological views: living creatures are far more prevalent than we ordinarily think; water is evidently necessary for their existence; water is not readily generated from any other stuff; hence water must be a basic constituent of the world. And since, by (7), there is at most one basic constituent of the world, thesis (6) comes tottering in as a conclusion. It does not take a giant intellect to knock holes in that reasoning; but at least there is a piece of reasoning, and not a mere prejudice, to attack.

The two theories which I have just examined show that Thales was no mean thinker. He offers reasoned views on abstract and philosophical subjects, and he merits his traditional place of honour at the head of Western science and philosophy: he was 'the originator of this sort of Philosophy' (Aristotle, *Met* 983b20=A 12; cf. *Cael* 294a29=A 14). *Vixerunt alii ante Agamemnona*: Theophrastus cautiously supposed that Thales had predecessors whom his own genius eclipsed and hid from the eyes of history (Simplicius, B 1). Certainly, Thales was not the first man to think about cosmogony; but what little we know of his predecessors does not contain much that is rational or philosophical in spirit. There is myth, and there is genealogical theology. Apart from that, a few tantalizingly abstract phrases from the seventh-century Spartan poet Alcman peep coquettishly through the veil of time, exciting the imagination without satisfying the desire.⁷ And there is the bizarre figure of Pherecydes of Syros: Aristotle called him a 'mixed' theologian (*Met*

1091b8=7 A 7), whose work was only partly mythological; and his cosmogony, of which we have substantial fragments, seems in some respects to mediate between Hesiodic myth and Ionian science. But Pherecydes was almost certainly a generation younger than Thales; and in any case his fragments contain nothing of philosophical interest: he is at best a 'literary curiosity'.⁸

In his cosmic speculation, then, Thales had a few uninteresting predecessors. In psychology no one, so far as we know, had preceded him.

It would, of course, be a mistake to infer that Thales was a lonely revolutionary, indulging in abstract ratiocinations remote from the practical concerns of the world. On the contrary, tradition represents him as one of the Seven Sages: early stories depict him as an engineering consultant to the Lydian army (Herodotus, I.170=A 6) and as a national statesman urging Pan-Ionian federation against the Persians (Herodotus, I.75=A 4); and the early record was embellished by a host of later and less trustworthy raconteurs. Most famously, Thales is said to have predicted an eclipse of the sun, which interrupted a battle between the Lydians and the Persians. The story is told by Herodotus (I.74=A 5), but it was known earlier to Xenophanes (21 B 19) and to Heraclitus (22 B 38). What lies behind the story is uncertain: Thales' prediction cannot have been based on any abstract astronomical theory, and it will not have pretended to any degree of accuracy; probably he had picked up some lore from the East.⁹ However that may be, he surely showed some interest in matters astronomical; and Eudemus of Rhodes, who was set to write the Peripatetic history of the exact sciences, duly made him the first astronomer (fr. 144W=Diogenes Laertius, I.23=A 1). Thales also stood at the head of Eudemus' history of geometry, where he was credited with the proof of several abstract theorems.¹⁰ It is no part of my brief to list or assess those ascriptions; and the heated controversy they have aroused will deter all but the most reckless from advancing an amateur opinion. One report, however, will usefully serve to introduce the subject of my next section.

(c) *Tradition and interpretation*

Thales is said to have discovered the theorem which appears as I.26 in Euclid's *Elements*: Triangles ABC , abc are identical if $AB=ab$, angle A =angle a , and angle B =angle b .

Eudemus in his *History of Geometry* ascribes this theorem to Thales; for he says that it was necessary for him to apply it in the method by which they say he proved the distance of ships at sea (5: Proclus, A 20).¹¹

Evidently Eudemus did not find a statement, let alone a proof, of Euclid I.26 in any work of Thales; rather, he found ascribed to Thales a method of calculating the distance of ships from the land; he judged that the method required the application of I.26; he assumed that Thales did apply I.26; and he inferred that Thales had discovered, or even that he had proved, I.26. The weakness of Eudemus' inference is plain enough; and if Thales' geometrical reputation rests wholly on such Peripatetic speculations, we shall be wary of thinking him a geometer at all: birds are not aeronautical engineers.

Eudemus was working in the dark. Aristotle, who relied on the reports of Hippias, had come across no writings of Thales' own (or at any rate none bearing on the subjects

which interested him); and it is improbable that Eudemus was any more fortunate than Aristotle.¹² Indeed, there was considerable uncertainty in antiquity over Thales' writings, and a strong tradition supposed that he had written nothing at all (Diogenes Laertius, 1.23=A 1).

Such reflections are dispiriting enough in themselves; generalized, they induce a grisly scepticism about our acquaintance with Presocratic thought as a whole. No piece of Presocratic philosophy has survived in its entirety;¹³ in most cases we have only a few *dissecta membra*; and those fragments—sentences, mangled phrases, or single words—are as often as not known to us only from the quotations of late sources, who cite them to display their learning or to make a polemical point. We rely, then, on the 'doxography'—on reports, by later authors, of the opinions and arguments of their remote predecessors. For Thales we have no fragments at all; for many later thinkers we are little better off; and even where we possess a page or two of the original, the doxography remains important, both as a source of doctrine not presented in the fragments, and as a means of setting those jewels in a suitable foil.

Then how reliable is the doxography? It is a vast and variegated thing: it stretches in time from the fifth century BC to the fourteenth century AD, and most of the surviving authors of antiquity contribute to it. This tumultuous and many-channelled stream welled in the Lyceum, whence most of its waters derive. The chief source, it seems, was Theophrastus' large study *On the Opinions of the Physicists*; but only a few fragments of that work survive,¹⁴ and we must usually drink from the lower reaches of the stream where the waters are stale and muddy. Moreover, the stream is contaminated. First, many of the later doxographers were not scholars but silly hacks who, by accident or design, regularly mutilated or distorted the Theophrastan material; and in any case they had at their disposal not Theophrastus' original work but some poor epitome and refashioning of it. Second, Theophrastus himself was not a historical purist: imitating his master, Aristotle, whose treatises are regularly prefaced by schematic doxographies, he presents earlier theories in terms of his own philosophy and earlier theorists as lispng Peripatetics.¹⁵ In short, the doxography flows from tainted sources through tainting channels: if it happens to preserve a little pure water, that is a lucky chance.

The doxography is unreliable. Our knowledge of the Presocratics must rest upon their *ipsissima verba*. Few *verba* survive. Hence our knowledge of the Presocratics is exiguous.

I believe that our knowledge of early Greek thought is indeed exiguous: despite the labours of scholarship and imagination, we possess little firm evidence; and it was all so unimaginably different, and so very long ago. Yet we need not plunge to the very depths of sceptical despair: ignorant of most, we know a little. First, Thales is not a typical figure: for most of the major figures in Presocratic thought we do still possess a modest collection of genuine fragments; and it is often plausible to believe that those fragments preserve the most important and most interesting of their philosophical doctrines. Obscurities and uncertainties abound; the fragments hide as much as they reveal; and the doxography is almost always indispensable. For all that (as readers of this book will discover) the fragments form an archipelago of islets in the dark ocean of our ignorance.

Second, the doxography is not utterly despicable. Acute philological scholarship has established the complicated interrelationships of our surviving sources;¹⁶ and we can often reconstruct with some probability the views, if not the words, of Theophrastus

himself: science can filter out the impurities which the doxographical stream picked up in the course of its long passage. Nor am I convinced that the Peripatetics were poor, let alone dishonest, historians. They wrote, as we all do, in their own jargon and for their own ends; and they were sometimes slapdash and sometimes inconsistent. But inconsistency is always detectable, and often corrigible; and there is little evidence of widespread carelessness. Thales, indeed, supplies us with a fine example of Peripatetic scholarship: Aristotle himself makes it plain that he is working from second-hand reports, and not from original documents; he indicates, more than once, that his opinions are speculative; and he states with candour that the line of reasoning he ascribes to Thales is conjectural. Moreover, the Aristotelian terminology of his reconstruction will mislead only the most myopic scholar: the Peripatetics do not pretend, and we do not believe, that Thales himself used the phrase 'material principle'; rather, they pretend to express Thales' old thesis in their new terminology.

'But surely,' some will complain, 'such rephrasing of an argument is in itself an unhistorical anachronism; and it is quite enough to condemn an interpretation.' If that complaint is correct, then all attempts to understand the Presocratics are doomed to failure; for understanding requires rephrasing or translation. But the complaint is foolish. Consider, as an elementary example, the connexion between my sentences numbered (1)–(3) above, and Thales' ancient words. It is my contention that sentences (1)–(3) express exactly the same argument that Thales once expressed. The differences between my argument and that of Thales are formal, not substantial; in particular, they reside in three notational devices which I use and Thales did not. First, (1)–(3) set the argument out in deductive form, whereas Thales presented it informally. That device is at worst a harmless pedantry; at best it adds clarity to the articulation of the argument. Second, my argument is mildly formalized: its component propositions are numbered (later arguments will wear the slightly more daring finery of logical symbols). This device, again, is purely clarificatory. Third, (1)–(3) are written in English, not Greek: that device is by far the most dangerous of the three: yet few, I suspect, will insist on keeping the Presocratics concealed in their original tongue.

The Peripatetic approach to the Presocratics is not, in theory, any more reprehensible than the approach adopted in (1)–(3) and common to most modern interpreters of ancient thought. If we are to do more than parrot the fragmentary utterances of the past, we must translate them into a modern idiom. The attempt at translation may, of course, cause disfigurement; but that is a weakness in the translator—translation itself is both intrinsically harmless and philosophically indispensable.

Yet if I defend the doxography against the wilder charges levelled at it, I do not wish to encourage sanguinity. We know remarkably little about the Presocratics. Their texts are frequently obscure in content; and they are usually pigmy in extent. A historian of philosophy who has studied the seventeenth century has difficulties enough; but he possesses a vast mass of moderately intelligible material, and we need not despair of constructing a detailed and well-rounded account of the thought of that period. With the Presocratics nothing like that is true. There are bright patches of detail, and a few dim suggestions of a more general pattern of development; more than that we can never expect. And I cannot refrain from adding the essentially frivolous comment that such a state of affairs is not wholly depressing: in a sea of ignorance the pursuit of truth is more exacting; and darkness adds excitement to the chase.

Enough of such generalities. Later chapters will have occasion to discuss particular instances of doxographical malpractice, and to raise more detailed problems of anachronism in interpretation. The aim of the preceding paragraphs has been to advocate a moderately cheerful scepticism. Our evidence for Presocratic thought is slight and fragmentary; but it is not wholly unreliable. We possess some titbits of knowledge: whether or not they constitute a nourishing and a savoury philosophical meal, the reader's palate must decide; he has, in the theses of Thales, a sort of *hors d'oeuvre*: I hope that his appetite is whetted for the dishes that follow.