# FIFTY MAJOR PHILOSOPHERS A REFERENCE GUIDE

DIANÉ COLLINSON



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# FIFTY MAJOR PHILOSOPHERS A REFERENCE GUIDE

DIANÉ COLLINSON

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# **Preface**

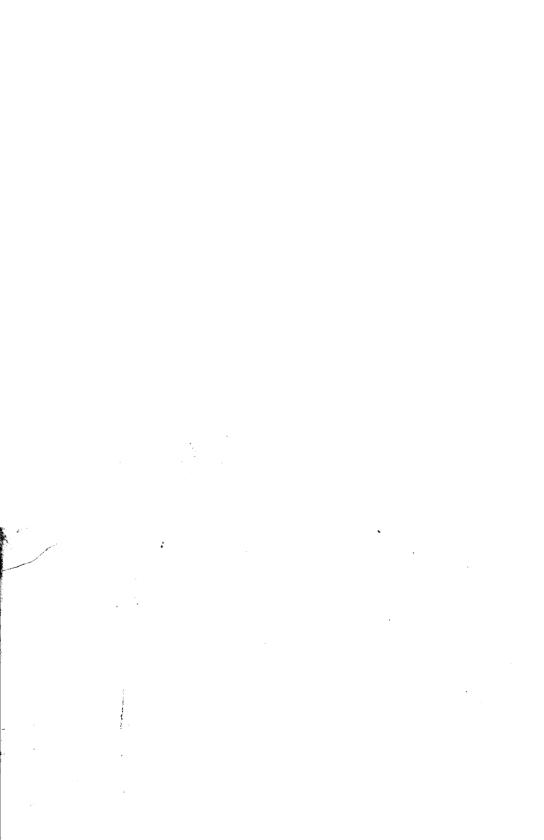
For each philosopher treated in this book I have provided the following: a short statement describing the main thrust of his philosophy; information about his life; and concise expositions of one or two aspects of his thought, along with mention, where appropriate, of its connection with the thought of other philosophers. I have selected for exposition those aspects of an individual's philosophy which I take to be especially important, interesting, and characteristic of his work. My aim has been to enable the reader briefly to share something of the point of view of each philosopher. No living philosopher is included in the book.

At the end of each essay I have provided information that can launch the interested reader into further and more detailed study. First, there are notes to which the numbers in the text refer; second, a list of other philosophers treated in the book whose thought relates in one way or another to that of the philosopher in hand; third, details of the philosopher's principal writings; fourth, a list of books suitable for further reading.

At the end of the book there is a short glossary of philosophical terms. It contains brief explanations of technical or semi-technical terms that occur a number of times in the book. For the most part it has been possible to give a brief explanation of such a term with its first use, but it was not feasible to repeat the explanation for every subsequent use. Subsequent or unexplained uses therefore appear in bold print in order to indicate that there is a glossary entry for the term or for a cognate of it. The term does not appear in bold print on the occasion of its being briefly explained in the text. The glossary entries should not be taken to be either clear-cut definitions or complete explanations of the terms they describe. They are meant to provide only a first foothold for a reader not familiar with the philosophical terrain.

Accommodating fifty philosophers between two covers has involved presenting a good deal of information in a closely packed way. By choosing to expound just one or two aspects of each philosopher's work I have sought to avoid offering material that is too condensed to be readily understood. By supplying the appendices, already mentioned, to each essay I have tried to provide the means of augmenting and developing what I have written. I have thought of each essay as providing guidance towards the main routes of further study; that is, as embodying references and indications which, if pursued, will help the enquiring reader to enjoy the sort of critical understanding and appreciation that each of these fifty philosophers deserves.

Diané Colliason



# The Philosophers

# Thales of Miletus about 624-546 BC

Western philosophy is said to have begun in the sixth century BC at Miletus on the Ionian seaboard of Asia Minor. Ionia was the meeting place of East and West; it was also the land of Homer. The first Milesian philosophers, Thales, Anaximander and Anaximenes, were open not only to oriental influences and the Homeric tradition but to the mathematics of Egypt and Babylon and to the ideas and information that flowed along the trade routes passing through Ionia.

What we know of Thales of Miletus has come to us through the reports of others, for nothing of his own writing has survived. He seems to have been, in the characteristically Greek manner, extremely capable in a number of ways. He probably travelled to Egypt to learn astronomy, geometry and practical skills to do with the measuring and management of land and water. According to Herodotus he predicted an eclipse of the sun that occurred in 585 BC. His knowledge of geometry enabled him to navigate ships and to measure pyramids by reference to the shadows they cast at certain times of day. Herodotus relates the story of how Thales overcame the problem of getting an army across an unbridged river by diverting the flow of water to run behind the army's encampment until the channel in front of it was shallow enough to be forded. He seems, too, to have been politically astute and is reported to have advised the Ionians to set up a single deliberative chamber at Teos in the middle of Ionia and to regard the other cities as demes or lesser townships. He features in the history of mathematics as the originator of geometrical proof. According to Proclus, Thales produced a number of propositions which, although not presented in correct logical sequence, were nevertheless related to each other in the deductive way

that came to be required for geometrical proof.

But it was not these wide-ranging achievements that earned Thales the title of philosopher; rather, it was his attempt to provide a rational description and explanation of the world. This rational project significantly distinguishes his thought from earlier, mythologically based accounts of the world. Thales asked the question: What is the source of all things? The answer he gave was: water. He maintained, according to those who wrote about him,2 that everything comes into being from water and that the earth floats on water like a log. Aristotle discusses this view in his Metaphysics. He points out that Thales does not seem to consider that the water on which the earth rests must itself rest on something. He suggests that Thales arrives at the supposition that water is the primary substance, maintaining its own nature while other things come into being from it, through observing that everything is nourished by moisture and that seeds and sperm are moist.

We have to remember that Thales' ideas, as well as those of the other Milesians, may have been shaped for us by the outlook and understanding of those who reported them. It has been suggested that Aristotle, who at three hundred years' remove could have known about Thales only indirectly, may not have fully comprehended what he meant. Thales, it is argued, would have subscribed to the then popular conception of the world and its surrounding water as stretching downwards limitlessly, so that for him there would have been no troublesome question such as that raised by Aristotle about its ultimate support. That the earth rested on water was an Egyptian belief as well as part of the Homeric tradition and it would be a small move from thinking of it as the support of all things to thinking of it as the source of all

things. But the details of Thales' thoughts about the relationship of water to everything else are unknown and Aristotle may, to some extent, have made his own inferences from Thales' broad conception. What is noteworthy is that Thales apparently substantiated his cosmogony, that is, his theory of the universe, by observation of the natural world rather than by reference to mythology and proverbs.

Thales' second major claim about the nature of the universe was that 'all things are full of gods'. His exact meaning is not entirely clear but he is widely taken to have meant that some kind of vital force permeates the world; that all things are in some sense besouled or partake of a common and unifying vitality. Whether he propounded a relationship between water and the 'gods in all things' is not known, but it would be difficult to deny a relationship of some sort between them, given the premiss that water is the source of everything.

Thales' view of the nature of the world may seem at first to be more like a theory in the natural sciences than philosophy. Its philosophical content and importance are explained with superb lucidity by Nietzsche:

Greek Philosophy seems to begin with a preposterous fancy, with the proposition that water is the origin and mother-womb of all things. Is it really necessary to stop there and become serious? Yes, and for three reasons: Firstly, because the proposition does enunciate something about the origin of things; secondly, because it does so without figure and fable; thirdly and lastly, because in it is contained, although only in the chrysalis state, the idea -Everything is one. The first-mentioned reason leaves Thales still in the company of religious and superstitious people; the second, however, takes him out of this company and shows him to us as a natural philosopher; but by virtue of the third, Thales becomes the first Greek philosopher.3

### **Notes**

1. Proclus took his information from a History of geometry written by Eudemus, who attributed several theorems to Thales, maintaining that he must have employed them to solve certain practical problems in navigation. See G.S. Kirk, J.E. Raven and M. Schofield, The presocratic philosophers, 2nd edn (Cambridge University Press, Cambridge, 1983), pp. 2 and 85-6.

2. Plato, Aristotle, Theophrastus, Simplicius,

2. Plato, Aristotle, Theophrastus, Simplicius, Diogenes and Eudenius were the major reporters of Thales's ideas. See Kirk, Raven and Schofield, *The presocratic philosophers*, pp. 1-6 and 76-99.

3. Fredrich Nietzsche, Early Greek Philosophy. trans. Oscar Levy (Russell and Russell, New York, 1964), p. 86.

### See also in this book

Anaximander, Anaximenes, Pythagoras.

### Thales' writings

A Nautical star-guide was ascribed by some to Thales; others said the Star-guide was written by Phokos of Samos. Various other writings were attributed to Thales but none of the attributions is certain.

### Further reading

Tex

Diels, H. (ed.) (1964) Die Fragmente der Vorsokratiker, 11th edn (Weidmann, Zurich). These are the presocratic texts in Greek.

Freeman, K. (ed.) Ancilla to the pre-Socratic philosophers, a complete translation of the fragments in Diels (Harvard University Press, Cambridge, Mass., 1983).

Kirk, G.S., Raven, J.E., Schofield, M. The presocratic philosophers, 2nd edn (Cambridge University Press, Cambridge, 1983). This is the book I have used for textual references.

### General

Barnes, J. The pre-Socratics (2 vols, Routledge and Kegan Paul, London, 1979; 1-vol. edn, 1982)

Dicks, D.R. 'Thales', Classical Quarterly vol. 9 (1959), pp. 294-309

Emlyn-Jones, C. The Ionians and Hellenism (Routledge and Kegan Paul, London, 1980)

Guthrie, W.K.C. A history of Greek philosophy (6 vols, Cambridge University Press, Cambridge, 1962-81; paperback edition, vols IV and V, 1986)

Stokes, M.C. One and many in presocratic philosophy (University Press of America, Lanham, distr. by Eurospan, London, 1986)

Taylor, A.E. Aristotle on his predecessors (Open Court, La Salle, Ill., 1977)

# Anaximander about 610-546 BC

Anaximander is thought to have been only a few years younger than Thales. Theophrastus describes him as Thales' 'successor and pupil'. Like Thales, Anaximander seems to have been a mixture of astrologer, geologist, mathematician and physicist as well as a philosopher. He probably introduced the gnomon (the shadow-casting rod of the sundial) into Greece. And it was he who, according to Agathemerus, 'first dared to draw the inhabited world on a tablet'.1 One fragment remains of the book. Concerning nature, that he is said to have written. According to all reports it was a very large work, offering a cosmogony, accounts of the heavenly bodies and of the development of living organisms, studies of natural history, biology, meteorology and astronomy, geography and maps of the world, and dissertations upon every aspect of human and animal life: He set the example of intellectual prowess for the many brilliant thinkers who succeeded him.

Anaximander maintained that the original world-forming stuff is apeiron, a substance that is without boundary, limit or definition. By this he may have meant that apeiron was spatially infinite or that it was indefinite in the sense that it was unlike any one kind of matter in the physical universe; or he may have meant both. He described apeiron as surrounding everything boundlessly and as being that from which all the heavens and all the worlds in them come into being: earth, air, fire and water are somehow generated from the indefinite substance. Things are constantly in motion and what has its birth from the infinite returns to it at death. Anaximander seems to have believed that some kind of ultimate balance or state of justice is maintained between all things, probably through interactions between the cosmic opposites of hot and cold, dry and wet. A passage from Plutarch indicates some of the details of this cosmogony:

He [Anaximander] says that that which is productive from the eternal of hot and cold was separated off at the coming-to-be of this world, and that a kind of sphere of flame from this was formed round the air surrounding the earth, like bark round a tree. When this was broken off and shut off in certain circles, the sun and the moon and the stars were formed.<sup>2</sup>

Anaximander believed that the earth was cylindrical in shape, its depth being one-third of its width so that it was like the drum of a column. It was, he suggested, 'held up by nothing, but remaining on account of its similar distance from all things'. He conjectured very shrewdly about the origins of the human race, maintaining that the first living creatures were born in moisture enclosed in thorny barks and that humankind appeared later in the development of organic life. He argued that this must have been so and that human beings were produced from creatures of another sort because, whereas most other creatures are self-supporting, human beings need prolonged nursing and could not have survived if their present form had been their original one.

The extant fragment of Anaximander's writing occurs as part of an account of his views given by Simplicius:

And the source of coming-to-be for existing things is that into which destruction, too, happens, 'according to necessity; for they pay penalty and retribution to each other for their injustice according to the assessment of Time', as he describes it in these rather poetical terms.<sup>3</sup>

Commentators agree that the last clause in that passage indicates that the phrase preceding it is a direct quotation of Anaximander's words. But there is little agreement over the actual meaning of the fragment and its reported context. One interesting speculation is that in the metaphor of paying penalties for injustice Anaximander offers an underlying metaphysical principle that

explains the surface appearances of things. For the implication may be that the changes and conflicts, the give and take that we observe occurring everywhere in nature, are parts of a process of exploration and reparation which, in the long run, maintains an equilibrium or state of 'justice' in the whole. This view is consistent with Anaximander's other reported remarks that the apeiron 'is both principle and element' and 'steers all things'. Moreover, the interaction of opposites features importantly in accounts of his natural philosophy, although the details of how Anaximander himself understood such interactions are not known.

Perhaps we should not make too much of Anaximander as a metaphysician. There is no doubt that it was his amazingly comprehensive natural philosophy rather than his metaphysical views that commanded widespread acclaim and respect, established his reputation as an intellectual giant and set a standard of intellectual achievement. Nevertheless it is interesting to speculate about the metaphysical implications of his ideas and especially to savour the excitement, so often engendered in us by these early philosophers, of conjecturing in adventurous, innocent and primitive ways, as most of us do in childhood, about the origins and essential nature of the cosmos.

### Notes

- 1. G.S. Kirk, J.E. Raven and M. Schofield, *The presocratic Philosophers*, 2nd edn (Cambridge University Press, Cambridge, 1983), p. 104.
  - 2. Ibid., p. 131.
  - 3. Ibid., p. 118.

### See also in this book

Thales, Anaximenes, Heraclitus,

### **Anaximander's writings**

Books on nature and on the stars are ascribed to Anaximander but there is no certainty that these ascriptions are correct.

### Further reading

Tex

Diels, H. (ed.) Die Fragmente der Vorsokratiker, 11th edn (Weidmann, Zurich, 1964). These are the presocratic texts in Greek.

Freeman, K. (ed.) Ancilla to the pre-Socratic philosophers, a complete translation of the fragments in Diels (Harvard University Press, Cambridge, Mass., 1983)

Kirk, G.S., Raven, J.E., Schofield, M. The presocratic philosophers, 2nd edn (Cambridge University Press, Cambridge, 1983). This is the book 1 have used for textual references.

### General

Barnes, J. The pre-Socratics (2 vols, Routledge and Kegan Paul, London, 1979; 1-vol. edn, 1982)

Emlyn-Jones, C. The Ionians and Hellenism (Routledge and Kegan Paul, London, 1980)

Guthrie, W.K.C. A History of Greek philosophy (6 vols, Cambridge University Press, Cambridge, 1962-81; paperback edition, vols IV and V, 1986)

Kahn, C.H. Anaximander and the origins of Greek cosmology (Columbia University Press, New York, 1960)

Stokes, M.C. One and many in presocratic philosophy (University Press of America, Lanham, distr. by Eurospan, London 1986)

Taylor, A.E. Aristotle on his predecessors (Open Court, La Salle, Ill., 1977)

# Anaximenes about 585-528 BC

Anaximenes was the third of the trio of philosophers known as the Milesians. He is thought to have flourished around 540 BC and Diogenes Laertius recorded, in his *Lives of Famous Philosophers*, probably compiled in the third century AD, that he was a pupil of Anaximander.

Like Anaximander, Anaximenes maintained that the first principle of all things was infinite. But, unlike Anaximander, he was prepared to specify what that first principle was, namely air. Theophrastus, a pupil of Aristotle, reports Anaximenes as believing that other material substances were derived from air through processes of rarefaction and densification:

Being made finer it [air] becomes fire, being made thicker it becomes wind, then cloud, then (when thickened still more) water, then earth, then stones; and the rest comes into being from those. He, too, makes motion eternal, and says that change, also, comes about through it.

The one extant sentence of Anaximenes' writing is: 'As our soul, being air, holds us together and controls us, so does wind [or breath] and air enclose the whole world.'2

Although Anaximander rather than Anaximenes is often regarded as the high point of Milesian philosophy, it is arguable that Anaximenes was in some ways the more advanced thinker. Certainly his account is an advance on Thales', since it specifies how earth, fire and water might come from his primary material, air. But it is also an advance on Anaximander's account in that it avoids postulating an indefinite substance as the primary one. Moreover, it appeals to common sense rather than mythology because it is based on observations of natural processes; at the same time it is rooted in the traditional belief that air is the source of life.

Anaximenes taught that the earth was flat and rode upon air, that the stars 'are implanted like nails in the crystalline' and that the heavenly bodies move around the earth 'iust as if a felt cap turns round our head'.3 He explains the occurrence of earthquakes by reference to the earth's alternating between dry and wet conditions. When the earth dries out, it 'breaks asunder and is shaken by the peaks that are thus broken off and fall in'.4 Rain, he maintains, is produced when the air thickens to form clouds which are then compressed so that moisture is squeezed from them. Hail is the result of the coalescence of the descending water and snow falls when wind is mixed in with the moisture. Actius reports him as saying that the sun 'is flat like a leaf' and that all the heavenly bodies are fiery but have earthly bodies among them.<sup>5</sup> Anaximenes not only endeavours to provide natural explanations for all phenomena but he also, through his conception of air as holding together both human souls and the world itself, seems to suggest an organic unity that embraces everything that exists, including human beings.

Although the Milesians mark, for Western philosophy, the advent of scientific and rational thought, the move from myth to reason was not sudden. Myth and reason interacted, influencing each other, so that traditional beliefs about elements such as air and water were gradually transformed by increasingly rational reflection and awareness of the natural world. The shift in attitude was from explaining the world by reference to gods or strange powers to explaining it by reference to a natural order of causes and regularities. The Milesians were scientists in that they observed the world and developed theories from their observations. But they were philosophers as well because their main concern was not just to say what the world is but how it came to exist at all; they wanted not only to describe phenomena but to discover their ultimate source.

### **Notes**

- 1. G.S. Kirk, J.E. Raven and M. Schofield, *The pre-Socratic philosophers*, 2nd edn (Cambridge University Press, Cambridge, 1983), p. 145.
  - 2. Ibid., pp. 158-9.
  - 3. Ibid., pp. 154-5.
  - 4. Ibid., p. 158.
  - 5. Ibid., p. 154.

### See also in this book

Thales, Anaximander.

### **Anaximenes' writings**

From a passing remark about his use of plain and economical language it has been inferred that Anaximenes wrote a book.

### **Further reading**

Text

Diels, H. (ed) Die Fragmente der Vorsokratiker, 11th edn (Weidmann, Zurich, 1964). These are the pre-Socratic texts in Greek.

Freeman, K. (ed.) Ancilla to the pre-Socratic philosophers, a complete translation of the fragments in Diels (Harvard University Press, Cambridge, Mais., 1983) Kirk, G.S., Raven, J.E. Schofield, M. The pre-Socratic philosophers, 2nd edn (Cambridge University Press,

### **PYTHAGORAS**

Cambridge, 1983). This is the book I have used for textual references.

### General

Barnes, J. The pre-Socratics (2 vols, Routledge and Kegan Paul, London, 1979; 1-vol. edn, 1982)

Coxon, A.H. 'Anaximenes' in N.G. Hammond and H.H. Scullard (eds), Oxford classical dictionary (Oxford University Press, Oxford, 1970)

Emlyn-Jones, C. The Ionians and Hellenism (Routledge and Kegan Paul, London, 1980)

Guthrie, W.K.C. A History of Greek philosophy (6 vols, Cambridge University Press, Cambridge, 1962-81; paperback edition, vols IV and V, 1986)

Stokes, M.C. One and many in presocratic philosophy Cambridge, Mass., (University Press of America, Lanham, distr. by Eurospan, London 1986)

Taylor, A.E. Aristotle on his predecessors (Open Court, La Salle, Ill., 1977)

# Pythagoras about 571-496 BC

Pythagoras was a mathematician and a mystic. He was probably born at Samos, an island off the coast of Ionia, but spent much of his life at Croton in southern Italy where he founded and led a community of scholars who were his disciples and who are reported to have loved him for the inspiration of his society. The way of life of this Pythagorean community involved secrecy and public silence concerning its practices. In spite of this, most of our information about it is derived from reports of what its members did and said. The accuracy of such reports is questionable but one of them, it has been remarked, shines like a ray of light through the clouds. It was written by Dicaearchus, a pupil of Aristotle:

What [Pythagoras] used to teach his associates, no one can tell with certainty; for they observed no ordinary silence. His most universally celebrated opinions, however, were that the soul is immortal; then that it migrates into other sorts of living creature; and in addition that after certain periods what has happened once happens again, and nothing is absolutely new; and that one should consider all animate things as akin.

The doctrine of the transmigration of souls is called 'metempsychosis'. If the soul is immortal and if it migrates between persons and other sorts of living creatures then certain things follow. It follows, for example, that in killing and eating creatures we may be killing our own kind, even our former friends and relatives. Because of this the Pythagoreans developed an elaborate set of prescriptions concerning the killing and eating of creatures as well as a range of prohibitions designed to establish and maintain purity of soul. A few examples will best convey the flavour of Pythagorean religious thought:

Abstain from beans.

Do not touch a white cock.

Do not look in a mirror beside a light.

Do not stir the fire with iron.

When the pot is removed from the fire, do not leave its mark in the ashes.

When rising from bed, roll the bedclothes together and smooth out the impress of your body.

Do not let swallows share your roof.

Be not possessed by irrepressible mirth.<sup>2</sup>

Like the Milesians, who were his philosophical predecessors and contemporaries, Pythagoras produced a cosmogony. But the focus of his cosmogony and of all his thought is very different from that of the Milesians, largely because of his preoccupation with mathematics and his intellectual mysticism. Where the Milesians asked questions about the origins and workings of the Cosmos, Pythagoras pondered on religion and on the human soul and its salvation. Where the Milesians observed physical phenomena, Pythagoras engaged in studies of arithmetic and geometry. It is these mathematical studies that unite the strands of his philosophy and which inform every aspect of his thought.

Aristotle tells us that Pythagoras believed that numbers rather than elements such as air and water were the principles of all things:

such and such a modification of numbers

being justice, another being soul and reason, another being opportunity — and similarly almost all other things being numerically expressible ... they supposed ... the whole heaven to be a musical scale and a number ... Evidently, then, these thinkers also consider that number is the principle both as matter for things and as forming their modifications and their permanent states, and hold that the elements of number are the even and the odd, and of these the former is unlimited and the latter limited.<sup>3</sup>

Aristotle also describes the Pythagorean Table of Opposites. The table gives ten principles which are the contrarieties thought to govern human affairs: limit and unlimit, odd and even, one and plurality, right and left, male and female, resting and moving, straight and curved, light and darkness, good and bad, square and oblong.

Number, for Pythagoras, is both the matter and the meaning of the Cosmos. He held that even and odd together produce unity and that unity produces number, which is the source of all things. As Aristotle informs us, definite numbers were assigned to things by the Pythagoreans. Marriage, for instance, was five because five is the sum of three, the first masculine number, and two. the first feminine number. Numbers also determined shapes of things. One is a point. two a line, three a surface and four a solid. Numbers were represented by geometrical patterns made from the appropriate quantity of dots. Thus there were 'square' or 'oblong' numbers, depending on how the dots were arranged. Ten was a sacred number and a diagram, the Tetraktys, shows that ten is the sum of the first four integers, one, two, three and four:

If we think of points, lines and surfaces as the units from which everything in nature is formed and of each of these units as representing a number, it is possible to see how Pythagoras conceived of number as the source of everything. He thought that the heavens were like a musical scale, that the stars produced harmonies and that souls at their best must be harmonious with the That musical scales can heavens. expressed numerically was another reason for regarding number as fundamental and originating in the Cosmos. Curiously, the Pythagoreans believed that neither the earth, which they thought was spherical, nor the sun was the centre of the universe. They said that both earth and sun revolved around a ' central fire and that the world breathes in air from the Unlimit by which it is surrounded.

The Pythagorean study of number and its relationship with the physical universe, and especially its relationship with music and astronomy, produced a strange blend of mysticism and real mathematical development. On the mystical side numbers were seen as sublime and as dictating hierarchy and ritual for the religious life and the purification of the soul. On the purely mathematical side Pythagorean geometry covered several of Euclid's books, including, of course, 'Pythagoras' Theorem', which proved that the square on the hypotenuse of a rightangled triangle is equal to the sum of the squares on the sides enclosing the right angle. Pythagoras is also believed to have proved that the side and the diagonal of a square are incommensurable, a discovery which made the early Greeks abandon concepts of number and measurements in their geometry. There is a story of doubtful accreditation that relates that Hippasus, a Pythagorean, was put to sea and drowned because he had disclosed to the uninitiated the fact that some geometrical quantities could not be expressed as whole numbers.4 Proclus, in his book on Euclid written in the fifth century AD, remarked that Pythagoras and his followers turned the study of geometry into a liberal education by transforming a mass of arithmetical and geometrical material into an orderly deductive system. Certainly Plato,

### HERACLITUS OF EPHESUS

over a century later, was profoundly influenced by both the mathematics and the disquisitions on the soul that were developed by the Pythagoreans in the sixth century BC.

(University Press of America, Lanham, distr. by Eurospan, London, 1986) Taylor, A.E. Aristotle on his predecessors (Open Court, La Salle, Ill., 1977)

### Notes

- Quoted in J. Barnes, The pre-Socratics (2 vols, Routledge and Kegan Paul, London 1979), vol. 1, pp. 102-3.
- These and other prohibitions are discussed in J.S.
   Kirk, J.E. Raven and M. Schofield, The presocratic philosophers, 2nd edn (Cambridge University Press, Cambridge, 1983), pp. 230-1.

3. Quoted in Kirk, Raven and Schofield, The pre-socratic philosophers, pp. 329, 330.

4. Pythagorean mathematics is discussed in W.W. Rouse Ball, A short account of the history of mathematics (Dover Publications, New York, 1960), pp. 19-28.

### See also in this book

Thales, Anaximander, Anaximenes, Plato.

### Pythagoras' writings

There are no extant writings attributable to Pythagoras. There is a huge quantity of reportage of his beliefs, ideas and teaching and there are several biographies of him.

### Further reading

Text

Diels, H. (ed.) Die Fragmente der Vorsokratiker, 11th edn (Weidmann, Zurich, 1964). These are the pre-Socratic texts in Greek.

Freeman, K. (ed.) Ancilla to the pre-Socratic philosophers, a complete translation of the fragments in Diels (Harvard University Press, Cambridge, Mass., 1983)

Kirk, G.S., Raven, J.E., Schofield, M. The presocratic philosophers, 2nd edn (Cambridge University Press, Cambridge, 1983). This is the book I have used for textual references.

### General

 Barnes, J. The pre-Socratics (2 vols, Routledge and Kegan Paul, London, 1979; 1-vol. edn, 1982)
 Emlyn-Jones, C. The Ionians and Hellenism (Routledge

and Kegan Paul, London, 1980)

Gorman, P. Pythagoras: a life (Routledge and Kegan Paul, London, 1979)

Guthrie, W.K.C. A history of Greek philosophy (6 vols, Cambridge University Press, Cambridge, 1962-81; paperback edition, vols IV and V, 1986)

Maziarz, E.A. and Greenwood, T. Greek mathematical philosophy (Frederick Ungar, New York 1968)

Raven, J.E. Pythagoreans and Eleatics (Cambridge University Press, Cambridge, 1948)

Stokes, M.C. One and many in presocratic philosophy

# Heraciltus of Ephesus flourished 504-501 BC

Diogenes Laertius tells us that Heraclitus was exceptionally haughty and supercilious and that he eventually became a misanthrope who lived in the mountains and fed on grasses and plants. But all that is known for certain about him is that he came of an aristocratic family, spent most of his life in Ephesus and was not generally liked by his fellow citizens. About one hundred fragments of his writings are extant. They are mostly epigrams and cryptic remarks dealing with the cosmos and the soul.

He maintained that the world was not created but had always existed and, like his predecessors and all other pre-Socratic thinkers, he brooded over the fact that change is incessant and universal. Flux, fire and cosmic unity are his main themes. He wrote: 'This world-order ... always was and is and shall be: an ever-living fire, kindling in measures and going out in measures.' He argues that coherence and stability persist within and indeed because of the process of continual change. Wisdom consists in recognition of this underlying coherence and unity of all things: 'Things taken together are wholes and not wholes, something which is being brought together and brought apart. which is in tune and out of tune; out of all things there comes a unity, and out of a unity all things.'2

Heraclitus calls this underlying structural coherence 'the Logos'. He says: 'Listening not to me but to the Logos it is wise to agree that all things are one.' Perception of the fundamental unity is wise in that it sees beyond the conflict of the world of appearances. It recognises, for example, that it is disease that makes health good and weariness that reveals the benefits of rest. Oppo-

sites, Heraclitus points out, may be related in a variety of ways. A path regarded from one point of view may be seen as the wav un: from another as the way down. Salt water may be an evil for humankind but good for fish. Moreover, pairs of opposites may form unities and pluralities and may link up with other pairs and other complex unities. Yet all such variations occur within a total unity and if we recognise that all opposites and changes are generated by the Logos then we will see that all things ultimately are divine. Thus Heraclitus says that 'to god all things are beautiful and good and just, but men have supposed some things to be unjust, others just." Sometimes he speaks of the unified totality as if it were god, immanent in all things: 'God is day, night, winter, summer, war, peace, satiety, hunger ...; he undergoes alteration in the way that fire, when it is mixed with spices, is named according to the scent of each of them 15

He believed that fire is the archetypal form of matter and that the world is 'an everliving fire', parts of which, in accordance with the principle of the Logos, are continually being extinguished and then rekindled. Even water becomes fire and fire changes to earth and water: 'All things are an equal exchange for fire and fire for all things, as goods are for gold and gold for goods.'6 Perhaps in those words there is an echo of Anaximander's remark about things paying 'penalty and retribution to each other for their injustice." Both philosophers seem to have had intuitions of a fundamental equilibrium in the universe. For Heraclitus fire was not only the prime matter of the universe but its form as well. It was the Logos incarnate, the material enactment of the principle of change and flux. He sometimes describes its balanced give and take as 'the indicated way', that is, the way things are and have to be in the world we have. He points out that if the conflict ceased it would be because some factions had overcome others and that would mean that the world as we know it would have ceased to be. He believed that souls are

fire, too, and that human life is as much a part of the eternal flux as anything else, and he stipulates that 'a dry soul is wisest and best.'8 This is rather surprising since it is difficult to reconcile the superiority of the dry over the wet soul with the previously mentioned view that everything, ultimately, is divine. But perhaps we have to think of soul as essentially having the character of dryness, even though it will relate to and take its meaning from its opposite, wetness. Certainly, we think of soul as light, ethereal. incorporeal, and as the principle of life, and this is consistent with Heraclitus' remark 'For souls it is death to become water." He thought that virtuous souls do not become water when their bodies die but eventually become part of the cosmic fire. He believed that sleeping, waking and dying are connected with degrees of fieriness in the soul. The soul of a sleeping person is partly detached from the world fire because the senses, which in the waking state are in direct contact with the world fire, are lulled and in abevance when one is asleep. In sleep the individual soul maintains contact only by breathing, the mind becomes forgetful and reason ebbs. But on waking, contact with the Logos is regained and reason is restored.

Heraclitus' ideas strike us as sharply different from those of the Milesians. His vision is a somewhat mystical one. He is difficult to interpret but at the same time appeals to many of our intuitions; thus he exerts a fascination. The flavour of his oracular thought is best imparted by dwelling on some of his aphoristic remarks, many of which are germanely provocative to a philosophic cast of mind.

Thunderbolt steers all things.

The real constitution of things is accustomed to hide itself.

The path up and down is one and the same.

Evil witnesses are eyes and ears for men, if they have souls that do not understand their language.

### **PARMENIDES**

Human disposition does not have true judgement, but divine disposition does.

An unapparent connection is stronger than an apparent one.

War is the father of all and the king of all, and some he shows as gods, others as men; some he makes slaves, others free.<sup>10</sup>

paperback edition, vois IV and V, 1986) Kohn, C.H. The art and thought of Heraclitus (Cam-

bridge University Press, Cambridge, 1981)

Kirk, G.S. Heraclius: the cosmic fragments (Cambridge University Press, Cambridge, 1954)

Stokes, M.C. One and many in presocratic philosophy (University Press of America, Lanham, distr. by Eurospan, London, 1986)

### **Notes**

- 1. G.S. Kirk, J.E. Raven and M. Schofield, *The presocratic philosophers*, 2nd edn (Cambridge University Press, Cambridge, 1983), p. 198.
  - 2. Ibid., p. 190.
  - 3. Ibid., p. 187.
  - 4. Ibid., p. 191, note.
  - 5. Ibid., p. 190.
  - 6. Ibid., p. 198.
  - 7. See Anaximander in this book, p. 5.
- 8. Kirk, Raven and Schofield, The presocratic philosophers, p. 203.
  - 9. Ibid.
  - 10. Ibid., ch. 6.

### See also in this book

Thales, Anaximander, Anaximenes, Pythagoras.

### Heraclitus' writings

Diogenes Laertius, writing in the third century AD, reported that Heraclitus wrote a three-part book called On nature. Recent commentators have pointed out that the aphoristic character of the fragments of his work that have survived does not support the idea that they come from a continuous piece of writing.

### Further reading

Text

Diels, H. (ed.) Die Frugmente der Vorsokratiker. 11th edn (Weidmann, Zurich, 1964). These are the pre-Socratic texts in Greek.

Freeman, K. (ed.) Ancilla to the pre-Socratic philosophers, a complete translation of the fragments in Diels (Harvard University Press, Cambridge, Mass., 1983)

Kirk, G.S., Raven, J.E., Schofield, M. The presocratic philosophers, 2nd edn (Cambridge University Press, Cambridge, 1983). This is the book I have used for textual references.

### General

Barnes, J. The pre-Socratics (2 vols, Routledge and Kegan Paul, London, 1979; 1-vol. end, 1982)

Emlyn-Jones, C. The Ionians and Hellenism (Routledge and Kegan Paul, London, 1980)

Guthrie, W.K.C. A history of Greek philosophy (6 vols, Cambridge University Press, Cambridge, 1962-81;

# Parmenides flourished 501-492 BC

Parmenides was born towards the end of the sixth century BC. He was a citizen of Elea in southern Italy and is said to have made excellent laws for the city. He was a major figure in pre-Socratic philosophy and the most prominent member of the group of thinkers who became known as the Eleatic school. He wrote his thoughts in verse, in the form of a revelation from a divine source. Fragments of his poem, some 150 lines, are preserved in the writings of Simplicius. The poem has a prologue and two main themes: 'The Way of Truth' and 'The Way of Seeming, or Opinion'.

Commentators have agreed that it is extremely difficult both to translate and understand Parmenides' poem. In 'The Way of Truth' he declares that:

There still remains just one account of a way, that it is. On this way there are very many signs, that being uncreated and imperishable it is, whole and of a single kind and unshaken and perfect. It never was nor will be, since it is now, all together, one, continuous. For what birth will you seek for it? How and whence did it grow? I shall not allow you to say nor to think from not being: for it is not to be said nor thought that it is not...¹

Parmenidean reality is therefore an uncreated and timeless plenum. It is invisible, motionless, the same everywhere, and 'it is perfected, like the bulk of a ball well-rounded on every side, equally balanced in every direction from the centre'.<sup>2</sup> Its unchanging immobility is in sharp contrast to