

# ΤΕΣΣΑΡΑΚΟΝΤΑΕΤΗΡΙΣ

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# HERACLITUS OF EPHESUS

by

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It is a pleasure to present to an outstanding scholar of modern Greece a summary of investigations on the philosophy of Heraclitus that have now been carried on for almost thirty years<sup>(1)</sup>. Unfortunately it will be but a very incomplete sketch, since time and space fail and much important material is not available here.

It would be interesting to know when Heraclitus' book was written—if, indeed, it was composed at any one time and does not rather represent the result of a long and continuous elaboration. At any rate, it contains, in a most condensed and even compressed form, the result of life-long speculation and we may perhaps assume that its author worked on it until he felt that death was near. Tradition will have it that he died at the age of sixty and that he had «flourished» about 500 B. C., that is to say, that he was somehow connected with some historical event located at that date. If he was from 30 to 50 then, his book was probably completed at some time between 490 and 470. From the way in which he mentions Pythagoras, Xenophanes and Hecataeus we may infer that the first of these was already dead whereas the two others were still alive<sup>(2)</sup>. But that does not solve our difficulty. There is a slight indication that the

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(1) Zu Heraklit, Zeitschrift für die österreichischen Gymnasien, 1910, S. 61 ff. Über die ursprüngliche Reihenfolge einiger Bruchstücke Heraklits. Hermes, Band 58 (1923), S. 20 ff. «Heraklits Einheitslehre» von Alois Patin als Ausgangspunkt zum Verständnis Heraklits. Wiener Studien, Band 43 (1924), S. 115 ff. Ἐδίζησάμην ἑμεωυτόν. Festschrift für Julius Schlosser. Wien, Amalthea-Verlag, 1926, S. 1 ff.

(2) Πολυμαθὴν νόον ἔχειν οὐ διδάσκει. Ἡσίοδον γὰρ ἂν ἐδίδαξε καὶ Πυθαγόρην, αὐτὸς τε Ξενοφάνειά τε καὶ Ἐκκαταῖον. (Frg. 40 Diels-Kranz).

book was not finished before 480<sup>(1)</sup>, and in that case Heraclitus' glorification of war as making «some slaves and others freemen»<sup>(2)</sup> may not have lacked some significance from the point of view of contemporary history: perhaps he would not have expressed himself in this way, if the barbarians had not recently been defeated by the Hellenes<sup>(3)</sup>.

What was his position with respect to the affairs of his city? Frg. 121 reads: «It would become all the men of Ephesus to hang themselves, one by one, and to abandon the city to the non-adult, having expelled Hermodorus, their ablest man, for they said (*i. e. thought*): «among us there shall not be one who is ablest; but if there is, let him stay elsewhere and among others»<sup>(4)</sup>. I wonder whether Heraclitus himself was dwelling within his native city when he wrote these words. Is there not a certain flavor of the refugee or emigrant mentality about them? In this context it may be noted that some ties seem to have connected him with Italy and Sicily: he mentions Pythagoras and Xenophanes, but neither Anaximander nor Anaximenes; his doctrine of opposites seems to be influenced by Pythagoras and Alcmaeon; Aristotle and Theo-

(1) The words κλέος ἀνάσσειν in Frg. 29 recall ἀνάσσειν τε κλέος in Simonides' poem in honor of Leonidas and his companions. If one of them borrowed from the other, it was certainly the philosopher and not the poet.

(2) Πόλεμος . . . τοὺς μὲν δούλους ἐποίησε, τοὺς δὲ ἐλευθέρους. (Frg. 53).

(3) If, as is currently assumed, Parmenides referred to Heraclitus in Frg. 6, the date suggested above would be too late, for Parmenides must have been «very old» when Socrates was «very young» (although he looked as fresh as if he were but 65, Plato, Parm. 127 A): hence, he was in all probability born not later than 535 and he cannot have been more than 50 when he wrote the poem in which the goddess addressed him as κοῦρος (Frg. 1,24). But that assumption is absolutely untenable, as Zeller and Reinhardt have shown long ago. Parmenides refers to «crowds lacking judgment» (ἄκριτα φῦλα) that is, to the masses of average men and most certainly not to an isolated thinker who could hardly be known and assuredly could not have «crowds» of followers at the time. Comp. Imago. Zeitschrift für Anwendung der Psychoanalyse auf die Geisteswissenschaften, Band X (1924), S. 2, Ann. 1 and S. 8, Ann. 25.

(4) Ἄξιον Ἐφρασίους ἠβηδὸν ἀπάγξασθαι πᾶσι καὶ τοῖς ἀνήθοις τὴν πόλιν καταλιπεῖν, οἷτινες Ἐρμόδωρον, ἄνδρα ἐωντῶν ὀνήσιτον ἐξέβαλον φάντες ἡμέων μηδὲ εἰς ὀνήσιτος ἔστω, εἰ δὲ μή, ἄλλη τε καὶ μετ' ἄλλων (Frg. 121).

phrastus emphasize that he shared Hippasus' views about Fire; and it was Empedocles who agreed with him in holding that the world oscillates between two phases and that its present phase is due to, and dominated by, Strife. Moreover, there was a tradition to the effect that Hermodorus, too, went to Italy and even played a part in the legislation of the Roman decemviri. But who was this Hermodorus and what was the cause for which he stood? Heraclitus, with remarkable emphasis, stressed the significance of Law. «The people must fight for (*their*) law as if for the walls (*of their city*)» (1). «All human laws grow out of the divine One» (2). The law, as it stood, was probably aristocratic and the «people» were the nobility. But if Hermodorus had been the head of an oligarchic faction, why should Heraclitus have condemned «all» his fellow-citizens? Was he, then, a «tyrant», or at least a would-be «tyrant», supported by the masses? Heraclitus certainly held that «to follow the advice of one man is a law too», arguing that «to me one man is worth ten thousand, if he be the best» (3). But that he whom Timon justly termed «mob-abusing Heraclitus» should have taken his stand by the side of the masses is hardly credible either. Perhaps the consideration of another fragment may shed some light—or at least some twilight—on the problem. «In Priene there lived Bias, the son of Teutames, who was more considerable than the others (*i. e. the other citizens*). And indeed the Prieneans dedicated a sanctuary to him, termed the Teutameum» (4). Now, Ephesus and Priene are very close to each other. A car takes you from one to other in about an hour.

(1) Μάχεσθαι χρῆ τὸν δῆμον ὑπὲρ τοῦ νόμου ὅκωσπερ τείχεος (Frg. 44).

(2) . . . τρέφονται γὰρ πάντες οἱ ἀνθρώπειοι νόμοι ὑπὸ ἐνὸς τοῦ θείου. . . (Frg. 114), not to be understood as referring to the one divine law, of which the philosopher could not go on to say: κρατεῖ γὰρ τοσοῦτον ὀκόσον ἐθέλει, since the law is not a thing possessed of desire or will. Comp. Wiener Studien 43, S. 129.

(3) Νόμος καὶ βουλῆ πείθεσθαι ἐνὸς (Frg. 33) and: εἷς ἐμοὶ μύριοι, εἰάν ἄριστος ἦ (Frg. 49).

(4) Ἐν Πριήνῃ Βίας ἐγένετο ὁ Τευτάμεω οὐ πλείων λόγος ἢ τῶν ἄλλων. Καὶ οἱ Πριηνεῖς δὲ τέμενος αὐτῷ καθιέρωσαν, τὸ Τευτάμειον λεγόμενον. (Frg. 89). That the second sentence probably forms part of the fragment and is not due to a later scholar was first seen by Patin (not by the writer, as Kranz puts it).

May we not suppose that there was a certain rivalry between them? And would it not seem as if Heraclitus had exalted the latter in order to disparage the former? «The Prieneans knew how to honor their greatest man, whereas the Ephesians did not». A parallel was thus established between Hermodorus and Bias. But Bias was neither an oligarchic leader nor a tyrant. He was rather a sage, a statesman and perhaps a lawgiver, of the type of Solon. Hence, Hermodorus may have been a man of the same type. And indeed «Hermodorus, the Ionian» had drafted laws<sup>(1)</sup>. Possibly he was a contemporary of Bias and Heraclitus had not known him personally at all. The philosopher's ire might have been kindled by the thought: the Ephesians misjudge me just as they misjudged their greatest man. But if he did happen to live in Heraclitus time, may he not really have come to Rome and may not the Romans, after all, have had good reasons for honoring his memory by the statue mentioned by Pliny?

Timon termed Heraclitus not only «mob-abusing», but a «riddler» likewise<sup>(2)</sup>. Indeed, his «obscurity» soon became proverbial. Aristotle gives a somewhat superficial account of it, complaining that it requires «an effort to punctuate Heraclitus»<sup>(3)</sup>. A good example of this is afforded by Frg. 87 usually supposed to mean; «A dull man is apt to be frightened by every (*new*) word (*i. e. thought*), but the point of which is only grasped when it is punctuated thus: «Man is dull: he is apt to be frightened by every new word»<sup>(4)</sup>. This kind of obscurity is simply the effect of a very compressed style and was certainly not deliberately aimed at for its own sake. But another and a much more significant sort of obscurity, or rather ambiguity, was as certainly wiled. Indeed, obscurity was the fashion of the age which felt that it was easy and even vulgar to write in a way understandable to the average reader: it was only by expressing yourself in a way intelligible but to the wisest and most refined that you could prove you belonged to the intellectual and cultural *élite* just beginning to emerge, and

(1) A 3a Diels-Kranz.

(2) ὀχλολοιδόρος and αἰνικτής.

(3) A 4 Diels-Kranz.

(4) Βλάξ ἄνθρωπος ἐπὶ παντὶ λόγῳ ἐπτοῆσθαι φιλεῖ.

were not like those poets who just «sing to the vulgar» — like Homer or Hesiod (1). There are many arrows in my quiver, says Pindar toward the end of the second Olympic ode, but they are meant but for those who have understanding; the others may stare as the raven does when the eagle, the bird of Zeus, soars high above him. Aeschylus, too, cannot have been unaware of the obscurity of his *cantica*. And Heraclitus himself explicitly extolled divine ambiguity: «The Lord whose is the oracle at Delphi does not reveal (*his meaning*) nor does he conceal it; he hints at it» (2). Heraclitean obscurity is not quite the same, however, as oracular ambiguity. Usually the philosopher's pronouncements have, first of all, a literal and often somewhat trivial meaning behind which, however, there looms an indefinite number of more general and also more profound meanings. Let us consider but two instances. «Way up — (*way*) down — one and the same» (3). The foreground meaning of this would seem to be the simple and unpretentious statement that we often descend a hill by the same path by which we ascended it (although it might also mean that, given three paths on different levels, the path on the middle level may be termed either «the upper path» when envisaged from below, or the «lower path» when beheld from above). But Theophrastus already appears to have interpreted the words as referring to the transformation of matter in a cosmic process: the stages remain the same whether fire is transformed first into water and thence into earth, or whether earth is retransformed first into water and thence into fire. «But there's need to know that warfare implies communion and justice discord and that all things are generated by discord and neediness» (4). Warfare implies communion, or rather, it is «common» since, of course, both parties must be engaged in it. But there certainly is an allusion to a Homeric phrase also, pointing out that the risk, too, is shared by both (5). Did it

(1) . . . . δῆμων αἰδοῖσι πείθονται καὶ διδασκάλῳ χρεῖωνται δμῖλῳ . . . (Frg. 104).

(2) Ὁ ἀναξ οὗ τὸ μαντεῖον ἔστι τὸ ἐν Δελφοῖς οὔτε λέγει οὔτε κρύπτει, ἀλλὰ σημαίνει (Frg. 93).

(3) Ὀδὸς ἄνω κάτω μία καὶ αὐτή. (Frg. 60).

(4) Εἰδέναι δὲ χρὴ τὸν πόλεμον ἔόντα ξυνὸν καὶ δίκην ἔρην καὶ γιγνόμενα πάντα κατ' ἔρην καὶ χρεῶν. (Frg. 80).

(5) ξυνὸς Ἄρης.

occur to Heraclitus, moreover, that war brings the warring peoples into contact and entails mutual influences? Or that it is also «common» to all the warriors taking part in it on the same side and thus proves a principle of unity and organization? We can hardly decide. But we see from another fragment<sup>(1)</sup> that an infinitely more general interpretation was certainly in his mind: every contrast is a kind of warfare and by contrast contraries are inseparably bound up with each other, such as right and left, up and down, sleeping and waking, life and death, master and servant, gods and men. Justice implies discord. Now, the term standing for justice also means judicial procedure, lawsuit, litigation, and that litigation implies discord is obvious and trivial. But evidently, an insight by far more profound is behind: if there were no injustice, there would be no need for justice<sup>(2)</sup>: if there were no conflicting interests, there would be no need for law; law really *is* a way of settling quarrels and disputes. All things are generated by discord and neediness. The foreground meaning probably is that generation presupposes the contrast of Male and Female and that men do not act when not prompted by some need. But in the background the view seems to loom that there would be no change whatsoever if the equilibrium of contraries were never disturbed; that all Becoming serves the purpose of restoring it; and is thus conditioned by some neediness, that is, some deficiency or «hunger» on the one hand, and, indeed, some corresponding excess or «satiety» on the other<sup>(3)</sup>. The danger of reading such background meanings into the text where they were not intended is, of course, as great as that of overlooking them where they may be clearly described and often we have no means of guarding against either<sup>(4)</sup>.

(1) Frg. 53.

(2) Comp. Frg. 23.

(3) ἔλλειψις - ὑπερβολή· χρησιμοσύνη or λιμὸς-κόρος. (Frg. 64, 67).

(4) Some instances may be given of this, all referring to the concept of Soul (ψυχή). Fragments 45 and 115 have generally been supposed to be particularly profound and even mysterious. Ψυχῆς πείρατα ἴων οὐκ ἂν ἐξεύροιο πᾶσαν ἐπιπορευόμενος ὁδόν· οὕτω βαθὺν λόγον ἔχει. (Frg. 45). Since Heraclitus clearly identified Soul with Fire or Heat and since the term βαθὺς originally refers to the soil and simply means Rich or Fertile, my guess is that by these words he wanted but to state that

Heraclitus has often been termed a metaphysician. That may mean anything or nothing. But if it is understood to imply that he aimed at transcending appearances and at discovering entities or principles removed from sense-perception, then this designation is certainly inappropriate. He tells us in so many words that he «preferred what may be seen, or heard, or found out; (1)» that it is what is «manifest» what men are mistaken about (2); and that error arises when people are unable to understand the testimony of their eyes and ears because they have «souls of barbarians», that is, of such as are incapable of understanding the language of these witnesses (3).

Fire or Heat pervades the entire universe and that its amount can never be exhausted. I should, therefore, translate them thus: «You cannot find out the limits of Soul, whatever road you may take; so plentiful is its nature». Similarly I should discount excessive profundity in interpreting and rendering the second: Ψυχῆς ἐστὶ λόγος ἐσπερὸν αἰξῶν (Frg. 115). It would seem mainly to refer to physiology and to mean: «The nature of Soul is growth». But perhaps there was an inkling of mental development likewise, and of the mind's natural capacity for learning. On the other hand, the real point of the very fragment (Frg. 36) which, when compared with Frg. 31 shows that Heraclitus identified Soul with Fire seems to have escaped all interpreters: ψυχῆσι θάνατος ὕδαρ γενέσθαι, ὕδατι δὲ θάνατος γῆν γενέσθαι, ἐκ γῆς δὲ ὕδαρ γίνεται, ἐξ ὕδατος δὲ ψυχή. «For souls it's death to become water, for water it's death to become earth, but from earth emerges water and from water soul». As may be seen from Frg. 76 some of the ancients already ignored the fact that death is referred to but in the first half of the sentence and fancied they were just consistently working out the philosopher's thought by inserting its mention into the second half likewise: And it's death for earth to become water, and for water to become soul. But we know (Heraclitus A 6 Diels-Kranz) that Heraclitus held movement to be characteristic of life, and rest of death. Hence, to pass from a more fluid to a more solid state implies death in a very specific and literal sense: but to pass from a more solid to a more fluid state means revival and was certainly termed «emerging» or «being born» (γίνεται) deliberately and on purpose.

(1) Ὅσων ὄψιν ἀκοή μάθησις, ταῦτα ἐγὼ προτιμέω. (Frg. 55).

(2) Ἐξηπάτηνται οἱ ἄνθρωποι πρὸς τὴν γνῶσιν τῶν φανερῶν. . . (Frg. 56).

(3) Κακοὶ μάρτυρες ἄνθρωποισιν ὀφθαλμοὶ καὶ ὄτα, βαρβάρους ψυχὰς ἐχόντων. (Frg. 107). Comp. Frg. 72: «They disagree with the statements (referring to things) with which they are most familiar and the facts which confront them daily appear strange to them». (ᾧ μάλιστα διηνεχῶς ὀμιλοῦσι λόγῳ, τούτῳ διαφέρονται καὶ οἷς καθ' ἡμέραν ἐγκυροῦσι,



What is it, then, that this testimony reveals to those whose «Hellenic» souls are able to understand it? Three tenets are usually assumed to be most essential to the teaching of Heraclitus: 1. The ultimate reality is Fire; the world has emerged out of fire in the past and will be reabsorbed into it in the future. 2. All things whatsoever are perpetually changing, a universal state of flux prevails; nothing endures, nor is anything ever at rest; in truth, there is no Being, there is but Becoming. 3. Change, however, though it is universal, strictly conforms to an unchanging and eternal law, expressing the nature, or the decree, of the divine *Logos*, or world-reason. The first of these assumptions, stated by Aristotle and Theophrastus already, is certainly true in the main, but needs qualification and clarification. The second, although it may be traced back to Plato, or rather to his elder friend Cratylus, is very doubtful. The third, due to the Stoics, is certainly wrong if expressed in the form indicated above, although a somewhat similar statement would be correct.

Some of the words in which Heraclitus expressed his doctrine regarding fire may be quoted: «To those awake there is one common order of things, but of those asleep each one turns aside into an order of his own. But this world, (*I mean*) the same for all, was not made by any god nor by any man, but ever was, is and will be: everliving fire, kindled according to measure and extinguished according to measure. (*But*) fire turns: first into ocean, but ocean (*again*) half into earth, and half into flame (<sup>1</sup>). By «flame» I render a Greek word which, according

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ταῦτα αὐτοῖς ξένα φαίνεται). One must not be misled by statements such as «occult harmony better than manifest» (ἁρμονία ἀφανής φανερῆς κρείττων, Frg. 54) or: «Nature is apt to hide herself» (φύσις κρύπτεσθαι φιλεῖ, Frg. 123), or that there are things no one would be prepared for since they are «untraceable and inaccessible» (ἐὰν μὴ ἔλπηται ἀνέλπιστον, οὐκ ἔξευρήσει, ἀνεξερεύνητον ἔόν καὶ ἄπορον, Frg. 18). That knowledge is, on principle, attained to by the use of the senses and by interpreting their testimony in the right way does not, of course, imply that it may not be much more difficult to find out some things than others or that there may not be some which it is even very hard to discover.

(<sup>1</sup>) Τοῖς (μὲν) ἐγρηγορόσι εἰς καὶ ξυνός ἐστι κόσμος, εὐδόντων δὲ ἕκαστος εἰς ἴδιον ἀποστρέφεται. (Frg. 89. Comp, Wiener Studien 43, S. 130). κόσμον (δὲ) τόνδε, τὸν αὐτὸν ἀπάντων, οὔτε τις θεῶν οὔτε ἀνθρώπων ἐποίησεν,

to its derivation, ought to mean something that burns or cremates but which, in archaic meteorology, mostly stands for sheet-lightning. Since this would not make sense here and since the context cogently calls for a reference to those hot vapors that rise from the sea and which Heraclitus (as Theophrastus tells us) believed to be gathered in, and to shine forth from, the heavenly luminaries, we must suppose it to designate the blazing flames visible in the sun and the other celestial bodies. This is important because it suggests that when Heraclitus spoke of «fire», he was thinking rather of heat than of flame, the latter arising from the former but by a somewhat complex process of transformation.

Hence, even viewed as a theory of primeval matter, Heraclitus' doctrine, when compared with that of Thales, Anaximander and Anaximenes, reveals a progress in the direction of the less concrete and tangible and comes near the more modern ideas of Force and Energy. Nor is it difficult to understand that he identified Fire and Soul, since the latter was, for all the Presocratics, mainly the principle of life and since «the Warm»<sup>(1)</sup> was by so many ancient thinkers supposed to distinguish the living from the dead and was, even by Aristotle, held to be an indispensable prerequisite of animation. The question has lately been much discussed whether the philosopher's description of the process by which fire «turns» into water and thence into earth and flame, then to be reversed till it returns to its starting point referred to the gradual formation and, again, to the dissolution of the universe or rather to the every-day phenomena of rain, sedimentation, evaporation, and so forth. Heraclitus himself was evidently not explicit on the point. But since Greek philosophy originated in mythology (merely substituting, *e.g.*, Water or Air to Earth, and the Unlimited to Chaos) and since all the Presocratics (with the exception, of course, of some of the Eleatics, but not of Parmenides himself), down to Democritus (and even to Plato), presented their cosmology in the form of cosmogony, it can

ἀλλ' ἦν αἰεὶ καὶ ἔστι καὶ ἔσται πῦρ αἰεζῶον ἀπτόμενον μέτρα καὶ ἀποσβεννύμενον μέτρα. (1'rg. 30). πυρὸς (δὲ) τροπαί' πρῶτον θάλασσα, θαλάσσης δὲ τὸ μὲν ἥμισυ γῆ, τὸ δὲ ἥμισυ πρηστήρ. (1'rg. 31).

(1) Τὸ θερμόν.

hardly be supposed that Heraclitus should have departed from this viewpoint altogether. On the other hand, for Anaximenes already (and, as Aristotle guessed, even for Thales) the everyday phenomena had evidently been the model on which they had worked out their cosmogony, and surely Heraclitus did not differ from his predecessors in this respect. He would not, for instance, have assumed that the earth had emerged from water, if he had not known that a process of this sort goes on even now in the estuaries of great streams.

The theory of universal flux is explicitly attributed to Heraclitus by Plato, who, however, at once goes on to say: «and, likening things to the flux of a river, he says that one cannot enter the same river twice»<sup>(1)</sup>. This would, by itself, suggest that this interpretation of Heraclitus was based solely on his pronouncements about the impossibility of entering the same river twice. But these pronouncements have come down to us and so we may judge for ourselves whether they justify Plato's interpretation. Now, Aristotle tells us that Plato had been familiar, since early manhood, «with Cratylus and the Heraclitean views» concerning the universal flux<sup>(2)</sup>, and in another passage that Cratylus was one of those «who claimed to «heracliticize», but objected that Heraclitus had not carried his theory of the flux far enough<sup>(3)</sup>. The words about «not entering the same stream twice» are thus quoted again and again. It is highly improbable that there was anything else to quote. If the philosopher had propounded the theory explicitly, the passage would almost certainly have been preserved. Hence, we have a fair chance to evaluate the significance of his statement ourselves. It ran thus: «We enter the same rivers and we do not; we are (*the same*) and we are not. (*For-even*) when we enter the same rivers, the waters that follow each

(1) Λέγει που Ἡράκλειτος ὅτι πάντα χωρεῖ καὶ οὐδὲν μένει καὶ ποταμοῦ ὁοῦ ἄπεικάζων τὰ ὄντα λέγει ὡς δις εἰς τὸν αὐτὸν ποταμὸν οὐκ ἂν ἐμβῆις. (Cratylus 402a).

(2) Ἐκ νέου... συνήθης γενόμενος... Κρατύλῳ καὶ ταῖς Ἡρακλειτείσι δόξαις... (Metaph. I 6).

(3) ... ἢ... δόξα... ἢ τῶν φασκόντων Ἡρακλειτεῖν καὶ οἶον Κρατύλῳ εἶχε, ὅς... Ἡρακλείτῳ ἐπειρῶμα εἰπόντι ὅτι δις τῷ αὐτῷ ποταμῷ οὐκ ἔστιν ἐμβῆναι· αὐτὸς γὰρ ᾤετο οὐδ' ἄπαξ (Metaph. IV 6).

other are others and others; and the souls, too, stream up from the moisture (*as others and others*)»<sup>(1)</sup>. The foreground meaning is quite clear: yesterday's river and today's river are the same, inasmuch as their channels are; but they are not, since the waters are different; and so we too are the same today as we were yesterday, since our bodies are, yet not the same, since our soul, or vital heat, has been renewed. What about the less obvious meaning? That the passage was intended to illustrate the unceasing change of all things, is possible. But even in that case we ought to refrain from exaggeration. In Heraclitus' time there was no atomic theory. Consequently, imperceptible, or microscopic, changes were most likely out of the question. Our body changes in so far as we eat and excrete. That is what Epicurus had in mind when he made one of his characters say: A yard does not remain a yard when you add something to it, or take something away. Even so with man: «one grows, another dwindles, and so we are changing all the time...»<sup>(2)</sup>. Really all the time? Are there no phases of stability? Does the water not remain water for some time, after it has emerged from heat and before it evaporates into flame? We possess a tiny little fragment that would seem to answer the question in the affirmative: «It rests from change»<sup>(3)</sup>. But that is not all. Again and again Heraclitus emphasizes the identity of opposites: what is good, is bad also; what is useful, is detrimental too; life is death and death is life, and so on and on. Are our fragments not simply meant to explain that the identical is non-identical as well and that what is the same is yet, at the same time, not the same? If they are, then the doctrine of universal flux evaporates into nothing, or rather, turns out to be just the interpretation of such as «claimed to heracliticize».

The concept of a divine Logos is simply a Stoic fabrication. Neither Plato nor Aristotle say a word about it. Yet both were

(1) Ποταμοῖς τοῖς αὐτοῖς ἐρβαίνομεν τε καὶ οὐκ ἐρβαίνομεν, εἰμέν τε καὶ οὐκ εἰμεν. (Frg. 49a). ποταμοῖσι τοῖσιν αὐτοῖσιν ἐρβαίνουσι ἕτερα καὶ ἕτερα ὕδατα ἐκίχθητ' καὶ ποταῖ δὲ ἀπὸ τῶν ὑγρῶν ἀναθυμιῶνται. (Frg. 12).

(2) . . . . . ὁ μὲν γὰρ αὐξέθ', ὁ δὲ γὰρ μὲν φθίβει, ἐν μεταλλαγῇ δὲ πάντες ἐντὶ πάντα τὸν χρόνον. (Frg. 2 Diels-Kranz).

(3) Μεταβάλλον ἀναπαύεται. (Frg. 84a).

extremely interested in the notion of cosmic reason. They extol Anaxagoras for having accounted for cosmic order by referring it to Thought<sup>(1)</sup>. Aristotle even says that in so far as he held this doctrine, Anaxagoras was like a sober man among drunkards. How could he have failed to note a substantially identical doctrine, if he had found it in Heraclitus? Furthermore, Logos, in fifth-century Greek, never means Reason<sup>(2)</sup>. It means any kind of linguistic expression and is used wherever we, nowadays, would point to the thoughts expressed by the words. Hence, it may also stand for any discourse, as well as for the doctrine expressed by it; and if, as is now almost universally admitted, Heraclitus' book began thus: «This is the *Logos* of Heraclitus, son of Bloson, of Ephesus. But although this *Logos* is eternal (i. e. eternally true or valid), men do not listen to it...»<sup>(3)</sup>, is it not evident that we must interpret the term in the way just indicated? If, now, we discard the interpretations of ancient thinkers and modern scholars and turn to the remains of Heraclitus' book, as far as known to us, three other trains of thought appear to be much more essential to his thought than those just discussed.

1. Alois Patin was the first to see that the philosopher himself had clearly pointed out one discovery as being his most important and most original contribution: «Of all whose discourses I heard not one attained to the knowledge of wisdom (*as being*) separated (*i. e. distinct*) from every other thing»<sup>(4)</sup>,

(1) Νοῦς.

(2) Comp. Wiener Studien 43, S. 125.

(3) (Λόγος Ἡρακλείτου Βλόσωνος υἱοῦ Ἐφεσίου). Τοῦ δὲ λόγου τοῦδε ἔόντος αἰεὶ ἀξύνετοι γίνονται ἄνθρωποι... (Frg. 1).

(4) Ὀκόσων λόγους ἤκουσα, οὐδεὶς ἀφικνεῖται ἐς τοῦτο, ὥστε γινώσκειν [ὅτι] σοφόν [ἐστὶ] πάντων κεχωρισμένον. (Frg. 108). Whether we strike out the two bracketed words, does not make much difference to the meaning. But it is amusing to note why we must hold them to have been inserted later. In one of the manuscripts a marginal note has slipped into the text: since (he would be) either a god or a beast (ἢ γὰρ θεὸς ἢ θηρίον). This is a reminiscence from Aristotle's Politics: man is a social being; an absolutely isolated man would have to be either superhuman or subhuman, «either god or beast». Hence, the author of the marginal note fancied Heraclitus was referring to «a wise man separated from all (other men)». But this misunderstanding was possible only if the text he copied read: σοφόν πάντων κεχωρισμένον.

How do we know that by «separated» Heraclitus meant «distinct»? In the first place, it is utterly inconceivable that the term could, at that early time, have been used in the technical sense in which Aristotle employs it when discussing the «separation» of the intelligible ideas from the objects of sense. In the second place, we find that Anaxagoras uses the very same form of the same word simply in the sense of «not mixed up with». These are his own words: «In this one world things are not separated from each other, nor hewn asunder by a hatchet, neither the Warm from the Cold nor the Cold from the warm»<sup>(1)</sup>. He then goes on to explain that Thought, in a certain sense, is an exception. It, indeed, is not mixed up with all the other things, but is «all by itself»<sup>(2)</sup>, although, nevertheless, «in some things», «namely in the beings capable of thought, «a share of it» may yet be found<sup>(3)</sup>, and even in so far as it is «by itself», it yet is «just where all other things are too», namely in undifferentiated as also in differentiated matter<sup>(4)</sup>. In Anaxagoras, then, there is, indeed, a definite, but rather unsuccessful effort to work out the concept of the «transcendent» which, however, he is, as yet, unable to disentangle from the more concrete and more primitive notion of spatial separation. In Heraclitus who does not admit any fundamental distinction between different kinds of matter, the ideas of their being «mixed up» or «not mixed up» with each other must be discarded altogether and «separated» can only mean «distinct». His discovery, then, was simply this: whereas his predecessors had distinguished but between «the Warm» and «the Cold», or «the Moist» and «the Dry», Heraclitus contended that «the Wise» (this, really, is the expression he uses) is something different from them all: the thinker who endeavours to analyze nature must take into account not merely semi-material factors like Heat and Cold, Moisture and

(1) Οὐ χωρίζεται ἀλλήλων τὰ ἐν τῇ ἐνὶ κόσμῳ οὐδὲ ἀποκέκοπται πελέκει οὔτε τὸ θερμὸν ἀπὸ τοῦ ψυχροῦ οὔτε τὸ ψυχρὸν ἀπὸ τοῦ θερμοῦ. (Anaxagoras Frg. 8).

(2) Anaxagoras Frg. 12.

(3) Ἐν παντὶ παντός μοῖρα ἔνεστιν πλὴν νοῦ, ἔστιν οἷα δὲ καὶ νοῦς ἐνι. (Anaxagoras Frg. 11).

(4) Ὁ δὲ νοῦς . . . καὶ νῦν ἐστὶν ἵνα καὶ τὰ ἄλλα πάντα . . . (Anaxagoras Frg. 14).

Dryness, but also Wisdom, the power that orders them all and makes them conform to a definite plan or scheme.

It can hardly be doubted that he vested wisdom in fire and assumed it to inhere in this universal element, since he pronounced «the dry soul» to be «the wisest and the best»<sup>(1)</sup>, and accounted for the stultifying effects of drunkenness by pointing out that the drunken man's soul «has got wet»<sup>(2)</sup>. But that does not dispose of the much more delicate question whether, or rather to what extent, he supposed wisdom to imply something like mind, or consciousness, or even personality. On the one hand, he seems to identify wisdom with «insight» (to have understanding means «to understand the One which is wise, insight that steers all things throughout»<sup>(3)</sup>). On the other hand, the fact that, in order to designate it, he makes use of the neutral gender («*the* Wise») tells powerfully against any personalistic interpretation. As if to add to our embarrassment, Frg. 32 reads thus: «The One which alone is wise does not wish, and (*yet*) does wish, to be called by the name of Zeus»<sup>(4)</sup>. It is easy to see why Wisdom wishes to be called *Zeus*, since it «steers all things throughout», as Zeus is commonly supposed to do. It is much less easy to see why it objects to this designation. Is it merely because no proper name is appropriate to it? Indeed, in some important fragments «God» is referred to, but «Zeus» never is. Furthermore, in one passage where we might expect a mention of Zeus, his symbol, the thunderbolt, is named instead<sup>(5)</sup>; and in another his epithets «father and king of all things» is transferred to War<sup>(6)</sup>. But in one of the two fragments in which «God» is referred to in this specific sense the philosopher is evidently not thinking of Wisdom, but of Fire, or of the universe<sup>(7)</sup>, and hence it is probable that the

(1) Αἴη ψυχὴ σοφωτάτη καὶ ἀρίστη. (Heraclitus Frg. 118).

(2) . . . ὑγρὴν τὴν ψυχὴν ἔχων. (Frg. 117).

(3) . . . ἐν τῷ σοφὸν ἐπίστασθαι, γνώμην ὅτι ἐκυβέρνησε πάντα διὰ πάντων. (Frg. 40/41). Comp. Zeitschrift f. d. oesterr. Gymnasien, 1910, S. 966.

(4) Ἐν τῷ σοφὸν μόνον λέγεσθαι οὐκ ἐθέλει καὶ ἐθέλει Ζηνὸς ὄνομα. (Frg. 32).

(5) Τὰ δὲ πάντα οὐκίζει κεραυνός. (Frg. 64).

(6) Πόλεμος πάντων μὲν πατήρ ἐστι, πάντων δὲ βασιλεύς . . . (Frg. 58).

(7) Ὁ Θεὸς ἡμέρη εὐφρόνη, χειμῶν θέρος, πόλεμος εἰρήνη, κόρος λιμός. (Frg. 67).

other ought to be interpreted in the same way<sup>(1)</sup>. In other words, it would seem that it is «everliving Fire» that is termed «God» when viewed as possessing, or being the vehicle of, wisdom, whereas the neutral term Wisdom (or rather «the Wise») is employed when the order, or plan, or scheme to which the universe conforms is referred to. Hence, Wisdom probably objects to the name «Zeus» because it is conceived rather as impersonal cosmic rationality than as a divine person.

What then is the nature of this cosmic scheme? Which are the features of the universe that reveal it and which convince us that its order and structure are planned by, and due to wisdom? Here we are on safer ground and can say with reasonable assurance that two such features may be distinguished, although closely connected with each other.

2. In the first place, the world consists of pairs, or couples, of opposites and these opposites, in every single instance, are, although contradictory, yet ultimately identical. As a first approach to the understanding of this paradox, we might perhaps say that, according to Heraclitus, the world is built upon a symmetrical pattern (right and left, up and down; day and night, summer and winter) and that these symmetrical counterparts conspire to produce an effect of order, regularity and beauty, or, as the philosopher preferred to call it, *harmony* — a term which, at that time, was still used in its original meaning of mutual adjustment and attunement. «Running counter to each other they convene and it is from disagreement that the best agreement springs»<sup>(2)</sup>. «They do not understand how what diverges may yet be in agreement with itself: reconverging adjustment, as in (*the shape of*) the bow and the lyre»<sup>(3)</sup>. «Occult attunement better than manifest»<sup>(4)</sup>. «To be joined

(1) Τῷ μὲν θεῷ κατὰ πάντα καὶ ἀγαθὰ καὶ δίκαια, ἄνθρωποι δὲ ἅ μὲν ἄδικοι ὑπειλήφασιν ἅ δὲ δίκαια. (Frg. 102).

(2) Τὸ ἀντίξουν συμφέρον καὶ ἐκ διαφερόντων καλλίστη ἁρμονία. (Frg. 8). In the case of this fragment and of some of those that follow a literal translation appeared to be still less practicable than in most other cases. The term *convene* was used in order to render, at least to some extent, the double meaning of συμφέρον (what *meets* and what is *convenient*).

(3) Οὐ ξυνιᾶσιν ὅπως διαφερόμενον ἑαυτῷ ὁμολογέει· παλίντροπος ἁρμονία ὅκωσπερ τόξου καὶ λύρης. (Frg. 51).

(4) ἁρμονία ἀφανῆς φανεροῆς κρείττων. (Frg. 54).



together: the entire and the fragmentary, the convening and the diverging, the consonant and the dissonant, and out of all (emerges) One and out of One they all (emerge)»<sup>(1)</sup>. «For God all things are right, and good, and just; men however have supposed some to be just and others unjust»<sup>(2)</sup>.

Sometimes opposition and contradiction are personified and termed *War* or *Discord*. They are thus hailed, not merely as indispensable conditions of order and beauty, but also as *agonistic* principles or, as we should say, as principles of competition and even, to a certain extent, of natural selection. «War is the father of the universe and its king: he has revealed some as gods, others as men; of some he has made slaves, and freemen of others»<sup>(3)</sup>. Heraclitus inveighed against Homer on account of the verse: «Oh, that Discord would disappear from among gods as well as men». For there would be no harmony without the contrast of High and Low, nor living beings without the contrast of Male and Female; indeed, the universe would be exploded<sup>(4)</sup>. And such a wish was particularly absurd and even nefarious in Homer who, being a rhapsodist, could hope to win fame solely by emerging triumphant from the contests in poetry and music. Consequently, «he ought to be banned from the games and flogged»<sup>(5)</sup>. But his case is a good illustration of the truth that «men would not be better off if all their desires were fulfilled»<sup>(6)</sup>.

As far as these considerations go, Heraclitus might well be said to have discovered a law of universal *polarity*. But this term does not cover his entire conception. He did not hold the opposites to be merely symmetrical counterparts; he conceived them, moreover, as *identical* in a still stricter sense. For this his favorite contention Heraclitus gave a long list of illustra-

(1) Συνάψιες ὅλα καὶ οὐχ ὅλα, συμφερόμενον διαφερόμενον, συνᾶδον διᾶδον, καὶ ἐκ πάντων ἓν καὶ ἐξ ἑνὸς πάντα. (Frg. 10).

(2) Frg. 102, comp. p. 61, note 1.

(3) Frg. 53. Beginning in note 6, p. 60. Then: καὶ τοὺς μὲν θεοὺς ἔδειξε, τοὺς δὲ ἀνθρώπους, τοὺς μὲν δούλους ἐποίησε, τοὺς δὲ ἐλευθέρους.

(4) Heraclitus A 22 Diels-Kranz.

(5) Τὸν τε Ὅμηρον ἔφρασκε ἄξιον ἐκ τῶν ἀγῶνων ἐκβιάλλεσθαι καὶ ραπίζεσθαι... (Frg. 42).

(6) Ἄνθρωποις γίνεσθαι ὀκόσα θέλουσι οὐκ ἄμεινον. (Frg. 110).

tions. These seem to fall under different heads according to the viewpoints adopted. But we must be careful to realize that these viewpoints, familiar as they may be, and significant as they may appear to us, evidently meant nothing to Heraclitus by themselves: to him they were just different illustrations of one and the same fact—the identity of opposites—and most likely he was not even aware of their difference.

In one case a modern interpreter feels inclined to assume that the philosopher simply made use of a pun. The Greek noun *bios* means *life* when the accent is on the first vowel; when it is on the second, its meaning is *bow*. Hence, «the bow's name is Life, but its effect is Death»<sup>(1)</sup>. But I feel assured that Heraclitus supposed this to be an entirely serious argument: in a certain sense Life and Death *coexist* in the bow: the former reveals its presence by the name, the latter by the effect; how could this be, if both were not, at bottom, the same?

In many other cases we might feel tempted to assume that what Heraclitus presents as identity of opposites is simply relativity of predicates: an object exhibits different properties when considered in its relations to different other objects because its effects on, or its response to these is different. «Sea-water is perfectly pure and definitely sullied: to fishes it is drinkable and life-preserving, whereas to men it is undrinkable and deadly»<sup>(2)</sup>. To an ass chopped straw is preferable to gold; pigs use filth for cleaning purposes and hens bathe in dust or ashes<sup>(3)</sup>. The most beautiful of apes appears ugly when compared with the human race; and the wisest of men will turn out to be but an ape by the side of a god with respect to wisdom, beauty and everything else; indeed, a man must be pronounced childish by the side of daemons, just as a boy by the side of men<sup>(4)</sup>. In a circle the beginning coincides with the end; and the fuller's screw moves in a circle and in a straight line at the same time<sup>(5)</sup>. The way up and the

(1) Τῷ οὖν τόξῳ ὄνομα ΒΙΟΣ, ἔργον δὲ θάνατος. (Frg. 48).

(2) Frg. 61.

(3) Frg. 9 and 37.

(4) Frg. 82, 83, 79.

(5) Frg. 103 and 59.

way down are one and the same. When we enter a river twice, it is the same and not the same, and so are we<sup>(1)</sup>. «Good and Bad are the same. Thus surgeons who cut and burn the patients and torment them badly in every way (*yet*) complain not to receive adequate payment from them for acting in this way»<sup>(2)</sup>. But surely, Heraclitus was not interested in relativity as such: he is far from saying that the surgical operation is bad *in one respect* and good *in another*. His conclusion, and, indeed, his point, is that Good and Bad are *the same*. He does not distinguish between an object and its properties in the way we do. Where there is goodness, there must be a *good thing*; and a *bad thing* where there is badness. Now, in all the above instances, goodness and badness could be traced in one and the same thing; consequently, the good thing and the bad thing were identical; hence, Good and Bad themselves were identical likewise. That is not our logic, but it was the logic of the early fifth century. Or rather, thinking, at that time, was conditioned by another set of categories. Then, as now, a property was assumed to inhere in the object; but whereas we consider it as something variable and comparatively short-lived, it was by those early thinkers felt to be an element of its unchanging essence.

In another group of cases the opposites are presented as mutually conditioning each other—either subjectively, inasmuch

(1) *Fr.*g. 49a and 12.

(2) Οἱ γοῦν ἰατροὶ τέμνοντες, καίοντες, πάντη βασανίζοντες κακῶς τοὺς ἀρρώστούοντας ἐπαιτιῶνται μηδὲν ἄξιον μισθὸν λαμβάνειν παρὰ τῶν ἀρρώστούων ταῦτα ποιησάμενοι. (*Fr.*g. 58). This is the reading of the manuscripts and there is no cogent reason for departing from it. Evidently, if the surgeons hold the payment they mostly receive to be inadequate, they must be convinced that, by illtreating the patient, they have, at the same time, conferred a great boon upon him which is just what had to be proved. If, however, we alter one letter (reading ἄξιοι for ἄξιον), we get a simpler and therefore still more satisfactory meaning: . . . yet are not rebuked and (even) held to deserve payment. . . » (ἐπαιτιῶνται μηδὲν, ἄξιοι μισθὸν λαμβάνειν). Utterior alterations that have been proposed and generally accepted and which make the author say that the surgeons do *not* deserve payment (μηδὲν ἄξιοι μισθὸν λαμβάνειν) appear to be absurd, since this would *disprove* what ought to be proved, namely that their treatment is at the same time an evil and a good. Comp. *Zeitschrift f. d. österr. Gymnasien* 1910. S. 970.

as one cannot be felt to be what it is but by its contrast to the other; or objectively since the essence of each, or at least of one, is just to be the negation of the other. «They would not have known (*or rather* come to fear) the name of Justice, if this (*namely injustice*) did not exist»<sup>(1)</sup>. «Sickness makes health enjoyable and good, hunger satiety, strain rest»<sup>(2)</sup>.

When we generalize the law of polarity and apply it to the universe, we shall see that its bi-polar structure really points to a fundamental unity: since all opposites are essentially one, the universe comprizing them all must ultimately be one too. But whence does the appearance of difference and plurality, whence does the fact of polarity itself arise? In a famous passage Heraclitus strove to clarify this point. But the solution was hardly satisfactory and unfortunately even the wording is somewhat doubtful. But the philosopher's main thought would appear to have been that all things are substantially one and that all apparent differences, or even contradictions, are but of a secondary and perhaps even arbitrary nature. «God is day and night, winter and summer, war and peace, satiety and hunger. But he is differentiated (*just*) as, when he (?) is mixed up with (*different kinds of*) incense, he may be named according to each man's pleasure (?)»<sup>(3)</sup>. It is

(1) Δίκης ὄνομα οὐκ ἂν ἤδεσαν (or rather ἔδεισαν which is nearer to the manuscript-reading ἔδησαν), εἰ τοῦτο μὴ ἦν. (Frg. 23).

(2) Νοῦσος ὑγιεινὴν ἐποίησεν ἡδὺ καὶ ἀγαθόν, λιμὸς κόρον, κάματος ἀνάπαισιν. (Frg. 111).

(3) Ὁ θεὸς ἡμέρη εὐφρόνη, χειμῶν θέρος, πόλεμος εἰρήνη, κόρος λιμὸς ἀλλοιοῦται δὲ ὅκωσπερ ὅπότεν συμμιγῆ θυσίμασιν, ὀνομάζεται καθ' ἡδονὴν ἐκάστου. (Frg. 67). After ὅκωσπερ the word πῦρ is now mostly inserted. It is doubtful whether, that is indispensable, for to Heraclitus God and Fire ultimately meant the same and even ἀλλοιοῦται («is differentiated») could hardly be predicated of God in the strict sense of the term. But it is more important to determine the precise meaning of the simile. It is usually supposed that the philosopher is referring to the fact that fire, or rather smoke, is designated differently according to the kind of incense burned and hence the words καθ' ἡδονὴν ἐκάστου are assumed to mean: according to the odor of each kind (although there is no other instance of ἡδονή being used in the sense of *scent* instead of that of *flavor*). But it is not easy to understand how, if this were correct, the simile could apply to the cosmos. The incense is different from and independent of the fire; hence, it makes sense to say that the latter is

not really surprising that this should sound unsatisfactory, for, after all, every monist must feel some embarrassment when called upon to explain why there is any difference at all to be overcome and accounted for by monism. But at least we know, to some extent, what, to Heraclitus, appeared to be the ultimate essence and nature of differentiation.

β. «There is one and the same within: living and dead, and awake and asleep, and young and old: for the latter are turned into the former and these, again, into the latter»<sup>(1)</sup>. Identity, then, is ultimately deducible from the phenomenon of mutual convertibility: the living could not *become* the dead, nor the waking man a sleeper, or the young man old, if all these were not, after all, the same since, as was shown already, according to the categories implicitly adopted at the time, properties were supposed to be as unchanging as substances were later on.

This fact of convertibility, as proof of identity, is illustrated by some other fragments also. «(It is)» cold things that become warm, the warm becomes cold; the wet becomes dry and the arid moist»<sup>(2)</sup>. Heraclitus further assumed that human souls when rising upward and thus becoming hotter are turned into gods and that, conversely, daemons when dropping down on earth and thereby becoming cooler are again turned into human souls, and in this sense he said: «Immortals are mortals, mortals immortals: our life (*implies*) the death of gods, our death

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designated by different names according to the different kinds of the former. But what is there, according to Heraclitus, in the universe different from and independent of God? Therefore, it would seem more likely that he had in mind the case of fire consuming different kinds of incense at one and the same time. In this case, he would then have meant to say, it is arbitrary by which of the corresponding names to designate the fire: each of them may be used «according to each man's pleasure» (καθ' ἡδονὴν ἑκάστου). And in the same way we may apply to God the names Day or Night; Winter or Summer; War or Peace; Satiety or Hunger «as we please»: all are equally justified because, after all, there is no real difference in God corresponding to this difference of names.

(<sup>1</sup>) Ταῦτό τ' ἓνι ζῶν καὶ τεθνηκὸς καὶ ἐγρηγορὸς καὶ καθεῦδον καὶ νέον καὶ γηραιόν· τάδε γὰρ μεταπεσόντα ἐκεῖνά ἐστι κάκεινα πάλιν μεταπεσόντα ταῦτα. (Frg. 88).

(<sup>2</sup>) Τὰ ψυχρὰ θερεται, θερμὸν ψύχεται, ὑγρὸν αἰθαίνεται, κορυφαλέον νοτίζεται. (Frg. 126).

(*implies*) their life»<sup>(1)</sup>. Hesiod whom most people acknowledge as their teacher did not even know the nature of day and night, since he distinguished them: «for they are one»<sup>(2)</sup>, most likely because they too turn into each other. And even so with winter and summer, war and peace, hunger and satiety. In short, change, everywhere, expresses convertibility, and convertibility presupposes identity.

Furthermore, the basic nature of change is clearly set forth in a fragment already alluded to: «This order of things . . . was made neither by any god nor by any man, but ever was, is and will be: everliving fire, kindled according to measure and extinguished according to measure»<sup>(3)</sup>. All changes whatsoever, then, move, as it were, in one and the same dimension or, we might say, have a common denominator; they represent either an intensification or a relaxation of cosmic heat. In day, in summer, in war, in hunger, in life, in waking, in youth, in gods it is intensified: fire blazes forth; in night, in winter, in peace, in satiety, in death, in sleep, in old age, in men it relaxes: fire burns down. All change means a transition from the blazing flame to the glimmering embers, or vice versa.

But here we are confronted with yet another and perhaps an even more significant conception: intensification and relaxation of fire are said to take place *according to measure*<sup>(4)</sup>, that is, in conformity with certain definitive numbers or ratios. And we may add at once that these «measures» were, in all probability, by Heraclitus declared to be «ordained», i. e. determined once for all<sup>(5)</sup>. Here, a certain influence emanating from the Pythagoreans may perhaps be traced. At any rate, Hera-

(1) Ἀθάνατοι θνητοί, θνητοί ἀθάνατοι, ζῶντες τὸν ἐκείνων θάνατον, τὸν δὲ ἐκείνων βίον τεθνεῶτες. (Frg. 62).

(2) . . . ἔστι γὰρ ἓν. (Frg. 57).

(3) Frg. 30. Comp. p. 51, note 1.

(4) . . . ἀπτόμενον μέτρα καὶ ἀποσβεννόμενον μέτρα. (Frg. 30).

(5) Ἔστι γὰρ εἰμασμένα πάντα. (Frg. 137). That the term occurred in a discussion of μέτρα appears from Aetius (Heraclitus A 8 Diels-Kranz). Nor is there any reason for suspecting the authenticity of the quotation. εἰμασμένα is the manuscript reading in Aeschylus, Agamemnon 913. That it was not arbitrarily inserted by a Stoic author is shown by the consensus of pre-Stoic evidence (Diogenes Laertius IX 8: Heraclitus A 5 and A 8 Diels-Kranz: comp. Hermes 58, S. 51 sqq.). And Kranz

clitus indulged in some quaint numerical speculations centering, as it would seem, mainly around the number Seven which he held to be of paramount significance not only in the realm of the heavenly bodies, but no less in human life, admitting, however, that it does not always reveal itself in its own guise, but is to a large extent represented by the number Thirty—this being, as he contended, derivable, in a way as artificial as it was ingenious, from Seven<sup>(1)</sup>. But by the «measures» dominating the cosmic process he appears to have meant something more tangible and less fantastic. From one fragment it is evident that «measure» sometimes stood for a definite quantitative ratio. When, in the process of gradual «extinction», fire has been turned into ocean, then *half* of ocean turns into earth and the other half into flame; and when, in a subsequent process

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argument that «there are no quotations from Heraclitus in Aetius» (who quotes the sentence) is a curious one, since here we have such a quotation (γράφει γούν). A unique phenomenon must never be denied just because it is unique.

(<sup>1</sup>) According to Frg. 126a Seven «is divided» among the Greater and the Lesser Bear (each consisting of 7 stars) but may also be «figured out» with respect to the moon «according» to the ratio of periods» (κατὰ λόγον δὲ ὥρεων συμβάλλεται ἑβδομάς κατὰ σελήνην, διαίρεται δὲ κατὰ τὰς ἄρκτους...). How did he «figure» that «out»? The lunar period covers 30 days. Now we learn that Heraclitus (A 19 Diels-Kranz) determined a «generation» as consisting of 30 years, using the curious argument (comp. H. Fraenkel, Am. Journal of Philology Jan. 1938) that within such period a man may become a grandfather, or rather as he is said to have expressed himself, «complete a circle of generation», inasmuch as his son might possibly in his turn become a father. And this argument he developed by pointing out that a man might beget a son at the age of 14 so that he would be 15 when the son was born; and it would then take this son another 15 years to become a father. Hence, the 30 years of a «generation» are «figured out» to be equal to 2. (2.7 + 1). Now, applying this strange calculus to the moon Heraclitus probably «figured out» that the 30 days of her period were equal to 2.7 days of waxing plus 1 day for the full moon plus 2.7 days of waning plus 1 day for the new moon, so that the «ratio of periods», may here too be expressed by the formula:  $30 = 2. (2.7 + 1)$ . Moreover, Heraclitus also ascribed cosmic significance to an astronomic period (by many termed the «Great Year») which he supposed to consist of 10,800 solar years — which means after all, that it would comprise 360 months (or periods of 30 days each), just as the solar year comprises 360 days (Heraclitus A 18 Diels-Kranz).

of gradual «kindling», earth is reconverted into ocean, then this is «measured» so as to conform to «the same ratio that had obtained before it became earth» (1). But another implication of the concept of «measure» was probably still more important:

«The sun will not overstep his measure. If he did, the Furies, the bailiffs of Justice, will find him out» (2). It is unlikely that this referred mainly to the sun's orbit. The job of the Furies is, after all, to avenge murder. Why should they interfere, if the sun merely deviated from the road prescribed to him? Another interpretation is called for. According to Heraclitus it is «the periods that bring everything about» (3). Surely, it did not escape him that the opposites, such as day and night, winter and summer, waking and sleeping, youth and old age, do not alternate irregularly and without any regard to definite measures of time. There is then, a definite time allotted to night as well as to day. But if the sun «overstepped his measure», that is, if he unduly prolonged day, he would, thereby, cut short the time to which night is entitled, just as the murderer cuts short the lifetime of his victim. This, evidently, is why Justice would have to interfere and to call upon the Furies to avenge his misdeed. The «laws» of nature in the physical sense are at the same time «laws» in the political sense. But what is here explicitly said about day and night, must have referred to winter and summer, youth and old age, and, indeed, to all pairs of opposites as well. Although every one of them is inseparably bound up with its counterpart, yet they do not simply *coexist*; they *alternate*, or rather they *prevail alternately*, according to definite ratios of time. This is why fire may be said to be kindled and extinguished *according to measure*. The cosmic process conforms to a definite *rhythm*

(1) ... θαλάσσης δὲ τὸ μὲν ἡμισυ γῆ, τὸ δὲ ἡμισυ πρηστῆρ ... θάλασσα διαχέεται καὶ μετρέεται εἰς τὸν αὐτὸν λόγον ὁκοῖος πρόσθεν ἦν ἢ γενέσθαι γῆ. (Frg. 31).—Why should just *half* the ocean be turned into earth? Perhaps for no other reason than that evaporation had also to be accounted for and that both processes appeared to be equally significant.

(2) Ἡλιος οὐχ ὑπερβήσεται μέτρα· εἰ δὲ μή, Ἐρινύες μιν, Δίκης ἐπίκουροι, ἔξευρήσουσιν (Frg. 94).

(3) Ἔλαται, αἶ πάντα φέρουσιν (Frg. 100).



as essential to the world-scheme of wisdom as the bi-polar structure of the universe.

The preceding sketch has left some important and, in part, obscure sections of Heraclitus' system out of account, such as his epistemology (<sup>1</sup>), his theology and his eschatology. What has been said may be summed up in the following theses: 1. The substance underlying the universe was conceived by Heraclitus to be fire, but fire rather in the sense of heat than in that of flame and held to be, at the same time, identical with soul, namely, with the principle of life and thought. 2. That he taught universal «flux» is true only in the sense that he defined the cosmic process as a continuous «blazing forth» and «burning down» of fire. 3. That he proclaimed a divine Logos, or Reason, as presiding over all change and Becoming is a Stoic mis-interpretation. 4. What he did assert was that in order to account for the structure and the phases of the universe we must assume there is wisdom vested in fire and expressing itself in a universal world-scheme, two features of which he emphasized. 5. The first is the bi-polar structure of the cosmos: it consists of pairs of opposites mutually conditioning each other which, since each of them is always convertible into the other, must be seen to be ultimately identical. 6. The second is the fact that these opposites prevail alternately, according to definite ratios of time, thereby imposing upon the universe a definite periodicity or rhythm. Thus it is mainly by polarity and rhythm that the wisdom inherent in the universe expresses itself. 7. Heraclitus was not a metaphysician, if by a metaphysician we mean a thinker who feels he is revealing entities and conditions removed from immediate experience: he contended, on the contrary, that they were all «manifest» — if only a man had an «Hellenic soul» capable of properly interpreting the data of sense-perception.

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(<sup>1</sup>) Amply discussed by the writer, Wiener Studien 43, S. 115 sq.