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George Grote

Excerpt

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P L A T O .

PRE-SOKRATIC PHILOSOPHY.

CHAPTER I.

SPECULATIVE PHILOSOPHY IN GREECE, BEFORE AND IN
THE TIME OF SOKRATES.

THE life of Plato extends from 427-347 B.C. He was born in the fourth year of the Peloponnesian war, and he died at the age of 80, about the time when Olynthus was taken by the Macedonian Philip. The last years of his life thus witnessed a melancholy breach in the integrity of the Hellenic world, and even exhibited data from which a far-sighted Hellenic politician might have anticipated something like the coming subjugation, realised afterwards by the victory of Philip at Chæroneia. But during the first half of Plato's life, no such anticipations seemed even within the limits of possibility. The forces of Hellas, though discordant among themselves, were superabundant as to defensive efficacy, and were disposed rather to aggression against foreign enemies, especially against a country then so little formidable as Macedonia. It was under this contemplation of Hellas self-acting and self-sufficing—an aggregate of cities, each a political unit, yet held together by strong ties of race, language, religion, and common feelings of various kinds—that the mind of Plato was both formed and matured.

Change in
the political
condition of
Greece dur-
ing the life
of Plato.

In appreciating, as far as our scanty evidence allows, the circumstances which determined his intellectual and speculative character, I shall be compelled to touch briefly upon the various philosophical theories which were propounded

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anterior to Sokrates—as well as to repeat some matters already brought to view in the sixteenth, sixty-seventh, and sixty-eighth chapters of my History of Greece.

To us, as to Herodotus in his day, the philosophical speculation of the Greeks begins with the theology and cosmology of Homer and Hesiod. The series of divine persons and attributes, and generations, presented by these poets, and especially the Theogony of Hesiod, supplied at one time full satisfaction to the curiosity of the Greeks respecting the past history and present agencies of the world around them. In the emphatic censure bestowed by Herakleitus on the poets and philosophers who preceded him, as having much knowledge but no sense—he includes Hesiod, as well as Pythagoras, Xenophanes, and Hekataeus: upon Homer and Archilochus he is still more severe, declaring that they ought to be banished from the public festivals and scourged.^a The sentiment of curiosity as it then existed was only secondary and derivative, arising out of some of the strong primary or personal sentiments—fear or hope, antipathy or sympathy,—impression of present weakness,—unsatisfied appetites and longings,—wonder and awe under the presence of the terror striking phenomena of nature, &c. Under this state of the mind, when problems suggested themselves for solution, the answers afforded by Polytheism gave more satisfaction than could have been afforded by any other hypothesis. Among the indefinite multitude of invisible, personal, quasi-human, agents, with different attributes and dispositions, some one could be found to account for every perplexing phenomenon. The question asked was, not, What are the antecedent conditions or causes of rain, thunder, or earthquakes, but, Who rains and thunders? Who produces earthquakes?^b The Hesiodic Greek was satisfied when informed that it was Zeus or Poseidon. To be told of physical agencies would have appeared to him not merely unsatisfactory, but absurd, ridi-

Early Greek mind, satisfied with the belief in polytheistic personal agents, as the real producing causes of phenomena.

^a Diogen. Laert. ix. 1. Πολυμαθητή νόον οὐ διδάσκει' (οὐ φύει, ap. Proclum in Platon. Timæ. p. 31 F., p. 72, ed. Schneider), 'Ἡσίοδον γὰρ ἂν ἐδίδασκε καὶ Πυθαγόρην, αὐτίς τε Ξενοφάνεια καὶ

'Ἐκαταίων' τὸν θ' "Ὀμηρον ἔφασκεν ἕξειον εἶναι βαπίζεσθαι ἐκ τῶν ἀγώνων, καὶ Ἀρχίλοχον ὁμοίως.

^b Aristophanes, Nubes, 367, 'Ἄλλὰ τίς ἔει; Herodot. vii. 129.

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CHAP. I.

HESIOD.

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culous, and impious. It was the task of a poet like Hesiod to clothe this general polytheistic sentiment in suitable details: to describe the various Gods, Goddesses, Demigods, and other quasi-human agents, with their characteristic attributes, with illustrative adventures, and with sufficient relations of sympathy and subordination among each other, to connect them in men's imaginations as members of the same brotherhood. Okeanus, Gæa, Uranus, Helios, Selênê,—Zeus, Poseidon, Hades—Apollo and Artemis, Dionysus and Aphroditê—these and many other divine personal agents, were invoked as the producing and sustaining forces in nature, the past history of which was contained in their filiations or contests. Anterior to all of them, the primordial matter or person, was Chaos.

Hesiod represents the point of view ancient and popular (to use Aristotle's expression^c) among the Greeks, from whence all their philosophical speculation took its departure; and which continued throughout their history, to underlie all the philosophical speculations, as the faith of the ordinary public who neither frequented the schools nor conversed with philosophers.

Belief in such agency continued among the general public, even after the various sects of philosophy had arisen.

While Aristophanes, speaking in the name of this popular faith, denounces and derides Sokrates as a searcher, alike foolish and irreligious, after astronomical and physical causes—Sokrates himself not only denies the truth of the allegation, but adopts as his own the sentiment which dictated it; proclaiming Anaxagoras and others to be culpable for prying into mysteries which the Gods intentionally kept hidden.^d The repugnance felt by a numerous public, against scientific explanation—as eliminating the divine agents and substituting in their place irrational causes,^e—was a permanent fact of which philosophers were always obliged to take account,

^c Aristotel. *Metaphys.* i. 7, p. 989, a. 10. Φησὶ δὲ καὶ Ἡσίοδος τὴν γῆν πρώτην γενέσθαι τῶν σωμάτων οὕτως ἀρχαίαν καὶ δημοτικὴν συμβέβηκεν εἶναι τὴν ὑπόληψιν.

Again, in the beginning of the second book of the *Meteorologica*, Aristotle contrasts the ancient and primitive theology with the "human wisdom" which grew up subsequently:

Οἱ ἀρχαῖοι καὶ διατρίβοντες περὶ τὰς θεολογίας — οἱ σοφώτεροι τὴν ἀνθρωπίνην σοφίαν (*Meteor.* ii. i. p. 353, a.).

^d Xenophon, *Memor.* iv. 7, 5; i. 11-15. Plato, *Apolog.* p. 26 E.

^e Plutarch, *Perikles*, c. 23. Οὐ γὰρ ἠείχοντο τοὺς φυσικοὺς καὶ μετεωρολόσχας τότε καλουμένους, ὡς εἰς αἰτίας ἀλόγους καὶ δυνάμεις ἀπροσῆτους διατρίβοντας τὸ θεῖον.

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PRE-SOKRATIC PHILOSOPHY.

CHAP. I.

and which modified the tone of their speculations without being powerful enough to repress them.

Even in the sixth century B.C., when the habit of composing in prose was first introduced, Pherekydes and Akusilaus still continued in their prose the theogony, or mythical cosmogony, of Hesiod and the other old poets: while Epimenides and the Orphic poets put forth different theogonies, blended with mystical dogmas. It was, however, in the same century, and in the first half of it, that Thales, of Miletus (620–560 B.C.), set the example of a new vein of thought. Instead of the Homeric Okeanus, father of all things, Thales assumed the material substance, Water, as the primordial matter and the universal substratum of everything in nature. By various transmutations, all other substances were generated from water; all of them, when destroyed, returned into water. Like the old poets, Thales conceived the surface of the earth to be flat and round; but he did not, like them, regard it as stretching down to the depths of Tartarus: he supposed it to be flat and shallow, floating on the immensity of the watery expanse or Ocean.^f This is the main feature of the Thaletian hypothesis, about which, however, its author seems to have left no writing. Aristotle says little about Thales, and that little in a tone of so much doubt,^g that we can hardly confide in the opinions and discoveries ascribed to him by others.^h

^f Aristotel. *Metaphys.* A. 3, p. 983, b. 21. *De Cœlo*, ii. 13, p. 294, a. 29. Θαλής, ὁ τῆς τοιαύτης ἀρχηγὸς φιλοσοφίας, &c., Seneca, *Natural. Quæst.* vi. 6.

Pherekydes, Epimenides, &c., were contemporary with the earliest Ionic philosophers (Brandis, *Handbuch der Phil.* s. 23).

According to Plutarch (*Aquæ et Ignis Comparatio*, p. 955, *init.*), most persons believed that Hesiod, by the word Chaos, meant Water. Zeno the Stoic adopted this interpretation (*Schol. Apollon. Rhod.* i. 498). On the other hand, Bacchylides the poet, and after him Zenodotus, called Air by the name Chaos (*Schol. Hesiod. Theogon.* p. 392, *Gaisf.*). Hermann considers that the Hesiodic Chaos means empty

space (see the note of Brandis, *Handb. Phil.* p. 71).

^g See two passages in Aristotle *De Animâ*, i. 2, and i. 5.

^h Cicero says (*De Naturâ Deorum*, i. 10), "Thales — aquam dixit esse initium rerum, Deum autem eam mentem, quæ ex aquâ cuncta fingeret." That the latter half of this Ciceronian statement, respecting the doctrine of Thales, is at least unfounded, and probably erroneous, is recognised by Preller, Brandis, and Zeller. Preller, *Histor. Philos. Græc. ex Fontium Locis Contexta*, sect. 15; Brandis, *Handbuch der Gr.-R. Philos.* sect. 31, p. 118; Zeller, *Die Philos. der Griechen*, vol. i. p. 151, ed. 2.

It is stated by Herodotus that Thales foretold the year of the memorable solar

The next of the Ionic philosophers, and the first who published his opinions in writing, was Anaximander, of Miletus, the countryman and younger contemporary of Thales (570–520 B.C.). He too searched for an *ἄρχῆ*, a primordial Something or principle, self-existent and comprehending in its own nature a generative, motive, or transmutative force. Not thinking that water, or any other known and definite substance fulfilled these conditions, he adopted as the foundation of his hypothesis a substance which he called the Infinite or Indeterminate. Under this name he conceived Body simply, without any positive or determinate properties, yet including the fundamental contraries, Hot, Cold, Moist, Dry, &c., in a potential or latent state, including farther a self-changing and self-developing force,ⁱ and being moreover immortal and indestructible.^k By this inherent force, and by the evolution of one or more of these dormant contrary qualities, were generated the various definite substances of nature—Air, Fire, Water, etc. But every determinate substance thus generated was, after a certain time, destroyed and resolved again into the Indeterminate mass. “From thence all substances proceed, and into this they relapse: each in its turn thus making atonement to the others, and suffering the penalty of injustice.”^l Anaximander conceived separate

Anaximander—laid down as *ἀρχῆ* the Infinite or Indeterminate—generation of the elements out of it, by evolution of latent, fundamental contraries—astronomical and geological doctrines.

eclipse which happened during the battle between the Medes and the Lydians (Herod. i. 74). This eclipse seems to have occurred in B.C. 585, according to the best recent astronomical enquiries by Professor Airy.

ⁱ See Zeller, *Philosophie der Griechen*, vol. i. p. 157, seq. ed. 2nd.

Anaximander conceived τὸ ἄπειρον as *infinite matter*; the Pythagoreans and Plato conceived it as a distinct nature by itself—as a subject, not as a predicate (Aristotel. *Physic.* iii. 4, p. 203, a. 2).

About these fundamental contraries, Aristotle says (*Physic.* i. 4, init.): οἱ δ' ἐκ τοῦ ἐνδὸς ἐνούσας τὰς ἐναντιότητας ἐκκρίνεσθαι, ὡς περ' Ἀναξίμανδρος φησι. Which Simplicius explains, ἐναντιότητες εἰσι, θερμὸν, ψυχρὸν, ξηρὸν, ὑγρὸν, καὶ αἱ ἄλλαι, &c.

Compare also Schleiermacher, “Ueber

Anaximandros,” in his *Vermischte Schriften*, vol. ii. p. 178, seq. Deutinger (*Gesch. der Philos.* vol. i. p. 165, Rezensb. 1852) maintains that this ἐκκρίσις of contraries is at variance with the hypothesis of Anaximander, and has been erroneously ascribed to him. But the testimony is sufficiently good to outweigh this suspicion.

^k Anaximander spoke of his ἄπειρον as ἀθάνατον καὶ ἀνώλεθρον (Aristotel. *Physic.* iii. 4, 7, p. 203, b. 15).

^l Simplicius ad Aristotel. *Physic.* fol. 6 a. apud Preller, *Histor. Philos. Graeco-Rom.* § 57, ἐξ ἧν δὲ ἡ γένεσις ἐστί τοῖς ὄδοις, καὶ τὴν φθορὰν εἰς ταῦτα γίνεσθαι, κατὰ τὸ χρεῶν δίδοναι γὰρ αὐτὰ τίσι καὶ δίκην ἀλλήλοις τῆς ἀδικίας κατὰ τὴν τοῦ χρόνου τάξιν. Simplicius remarks upon the poetical character of this phraseology, ποιητικῶς κατὰ τὸν ὄνομασιν, &c.

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existence (determinate and particular existence, apart from the indeterminate and universal) as an unjust privilege, not to be tolerated except for a time, and requiring atonement even for that. As this process of alternate generation and destruction was unceasing, so nothing less than an Infinite could supply material for it. Earth, Water, Air, Fire, having been generated, the two former, being cold and heavy, remained at the bottom, while the two latter ascended. Fire formed the exterior circle, encompassing the air like bark round a tree: this peripheral fire was broken up and aggregated into separate masses, composing the sun, moon, and stars. The sphere of the fixed stars was nearest to the earth: that of the moon next above it: that of the sun highest of all. The sun and moon were circular bodies twenty-eight times larger than the earth: but the visible part of them was only an opening in the centre, through which^m the fire or light behind was seen. All these spheres revolved round the earth, which was at first semi-fluid or mud, but became dry and solid through the heat of the sun. It was in shape like the section of a cylinder, with a depth equal to one-third of its breadth or horizontal surface, on which men and animals live. It was in the centre of the Kosmos; it remained stationary because of its equal distance from all parts of the outer revolving spheres; there was no cause determining it to move upward rather than downward or sideways, therefore it remained still.ⁿ Its exhalations nourished the fire in the

^m Origen. *Philosophumena*. p. 11, ed. Miller; Plutarch ap. Eusebium *Præp. Evang.* i. 8, xv. 23-46-47; Stobæus *Eclog.* i. p. 510. Anaximander supposed that eclipses of the sun and moon were caused by the occasional closing of these apertures (Euseb. xv. 50-51). The part of the sun visible to us was, in his opinion, not smaller than the earth, and of the purest fire (Diogen. ii. 1).

Eudæmus, in his history of astronomy, mentioned Anaximander as the first who had discussed the magnitudes and distances of the celestial bodies (Simplikius ad Aristot. *De Cælo*, ap. Schol. Brand. p. 497, a. 12).

ⁿ Aristotel. *Meteorol.* ii. 2, p. 355, a. 21, which is referred by Alexander of Aphrodisias to Anaximander; also

De Cælo, ii. 13, p. 295, b. 12.

A doctrine somewhat like it is ascribed even to Thales. See Alexander's *Commentary on Aristotel. Meteorol.* i. p. 983, b. 17.

The reason here assigned by Anaximander why the Earth remained still, is the earliest example in Greek philosophy of that fallacy called the principle of the Sufficient Reason, so well analysed and elucidated by Mr. John Stuart Mill, in his *System of Logic*, book v. ch. 3, sect. 5.

The remarks which Aristotle himself makes upon it are also very interesting, when he cites the opinion of Anaximander. Compare Plato, *Phædon*, p. 109, c. 132, with the citations in Wyttenbach's note.

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peripheral regions of the Kosmos. Animals were produced from the primitive muddy fluid of the earth: first, fishes and other lower animals—next, in process of time man, when circumstances permitted his development.^o We learn farther respecting the doctrines of Anaximander, that he proposed physical explanations of thunder, lightning, and other meteorological phenomena: ^p memorable as the earliest attempt of speculation in that department, at a time when such events inspired the strongest religious awe, and were regarded as the most especial manifestations of purposes of the Gods. He is said also to have been the first who tried to represent the surface and divisions of the earth on a brazen plate, the earliest rudiment of a map or chart.^q

The third physical philosopher produced by Miletus, seemingly before the time of her terrible disasters suffered from the Persians after the Ionic revolt between 500–494 B.C., was Anaximenes, who struck out a third hypothesis. He assumed, as the primordial substance, and as the source of all generation or transmutation, Air, eternal in duration, infinite in extent. He thus returned to the principle of the Thaletian theory, selecting for his beginning a known substance, though not the same substance as Thales. To explain how generation of new products was possible (as Anaximander had tried to explain by his theory of evolution of latent contraries), Anaximenes adverted to the facts of condensation and rarefaction, which he connected respectively with cold and heat.^r The Infinite

Anaximenes
—adopted
Air as ἀρχή
—rise of substances out of it, by condensation and rarefaction.

^o Plutarch, *Placit. Philos.* v. 19.

^p Plutarch, *Placit. Philos.* iii. 3; Seneca, *Quaest. Nat.* ii. 18-19.

^q Strabo, i. p. 7. Diogenes Laertius (ii. 1) states that Anaximander affirmed the figure of the earth to be spherical; and Dr. Whewell, in his *History of the Inductive Sciences*, follows his statement. But Schleiermacher (*Ueber Anaximandros*, vol. ii. p. 204 of his *Sämmtliche Werke*) and Gruppe (*Die Kosmischen Systeme der Griechen*, p. 38) contest this assertion, and prefer that of Plutarch (*ap. Eusebium Præp. Evang.* i. 8, *Placit. Philos.* iii. 10), which I have adopted in the text. It is to be remembered that Diogenes

himself, in another place (ix. 21), affirms Parmenides to have been the first who propounded the spherical figure of the earth. See the facts upon this subject collected and discussed in the instructive dissertation of L. Oettinger, *Die Vorstellungen der Griechen und Römer ueber die Erde als Himmelskörper*, p. 38; Freiburg, 1850.

^r Origen, *Philosophumen.* c. 7; Simplicius in *Aristot. Physic.* f. 32; Brandis, *Gesch. Phil.* p. 145.

Cicero, *Academic.* ii. 37, 118. "Anaximenes infinitum aera, sed ea, quae ex eo orientur, definita."

The comic poet Philemon introduced in one of his dramas, of which a short

Air, possessing and exercising an inherent generative and developing power, perpetually in motion, passing from dense to rare or from rare to dense, became in its utmost rarefaction, Fire and Æther; when passing through successive stages of increased condensation it became first cloud, next water, then earth, and, lastly, in its utmost density, stone.⁸ Surrounding, embracing, and pervading the Kosmos, it also embodied and carried with it a vital principle, which animals obtained from it by inspiration, and which they lost as soon as they ceased to breathe.⁹ Anaximenes included in his treatise (which was written in a clear Ionic dialect) many speculations on astronomy and meteorology, differing widely from those of Anaximander. He conceived the Earth as a broad, flat, round plate, resting on the air.¹⁰ Earth, Sun, and Moon were in his view condensed air, the Sun acquiring heat by the extreme and incessant velocity with which he moved. The Heaven was not an entire hollow sphere encompassing the Earth below as well as above, but a hemisphere covering the Earth above, and revolving laterally round it like a cap round the head.¹¹

The general principle of cosmogony, involved in the hypothesis of these three Milesians—one primordial substance or Something endued with motive and transmutative force, so as to generate all the variety of products, each successive and transient, which our senses witness—was taken up with more or less modification by others, especially by Diogenes of Apollonia, of whom I shall speak presently. But there were three other men who struck out different veins of thought—Pythagoras, Xenophanes, and Herakleitus: the two former seemingly contemporary with Anaximenes (550–490 B.C.) the latter somewhat later.

Of Pythagoras I have spoken at some length in the thirty-seventh chapter of my History of Greece. Speculative ori-

fragment is preserved (Frag. 2, Meineke), the omnipresent and omniscient Air, to deliver the prologue :

— οὗτος, εἴμ' ἐγὼ
 Ἄηρ, ὃν ἂν τις ὀνομάσσειε καὶ Δία.
 ἐγὼ δ', ὃ θεοῦ ἴστιν ἔργον, εἴμ' πανταχοῦ—
 πάντ' ἐξ ἀνάγκης οἶδα, πανταχοῦ παρών.

⁸ Plutarch, *De Primo Frigido*, p.

947; Plutarch, *ap. Euseb. P. E. i. 8.*

⁹ Plutarch, *Placit. Philosophor. i. 3,* p. 878.

¹⁰ Aristotel. *De Cœlo*, ii. 13; Plutarch, *Placit. Philosoph. iii. 10*, p. 895.

¹¹ Origen. *Philosophum. p. 12*, ed. Miller: ὡς περὶ περὶ τὴν ἡμετέραν κεφαλὴν στρέφεται τὸ πιλίον.

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ginality was only one among many remarkable features in his character. He was an inquisitive traveller, a religious reformer or innovator, and the founder of a powerful and active brotherhood, partly ascetic, partly political, which stands without parallel in Grecian history. The immortality of the soul, with its transmigration (metempsychosis) after death into other bodies, either of men or of other animals—the universal kindred thus recognised between men and other animals, and the prohibition which he founded thereupon against the use of animals for food or sacrifice—are among his most remarkable doctrines: said to have been borrowed (together with various ceremonial observances) from the Egyptians.¹ After acquiring much celebrity in his native island of Samos and throughout Ionia, Pythagoras emigrated (seemingly about 530 B.C.) to Kroton and Metapontum in Lower Italy, where the Pythagorean brotherhood gradually acquired great political ascendancy: and from whence it even extended itself in like manner over the neighbouring Greco-Italian cities. At length it excited so much political antipathy among the body of the citizens,² that its rule was violently put down, and its members dispersed about 509 B.C. Pythagoras died at Metapontum.

Pythagoras—his life and career—
Pythagorean brotherhood, great political influence which it acquired among the Greco-Italian cities—incurred great enmity, and was violently put down.

Though thus stripped of power, however, the Pythagoreans still maintained themselves for several generations as a social, religious, and philosophical brotherhood. They continued and extended the vein of speculation first opened by the founder himself. So little of proclaimed individuality was there among them, that Aristotle, in criticising their doctrine, alludes to them usually under the collective name Pythagoreans. Epicharmus, in his comedies at Syracuse (470 B.C.) gave occasional utterance to various doctrines of the sect; but the earliest of them who is known to have composed a book, was Philolaus,³ the con-

The Pythagoreans continue as a recluse sect, without political power.

¹ Herodot. ii. 81; Isokrates, Busirid. Encom. s. 28.

² Polybius, ii. 39; Porphyry, Vit. Pythag. 54 seq.

³ Diogen. Laert. viii. 7-15-78-85.

Some passages of Aristotle, however,

indicate divergences of doctrine among the Pythagoreans themselves (Metaphys. A. 5, p. 986. a. 22). He probably speaks of the Pythagoreans of his own time, when dialectical discussion had modified the original orthodoxy of the

temporary of Sokrates. Most of the opinions ascribed to the Pythagoreans originated probably among the successors of Pythagoras; but the basis and principle upon which they proceed seems undoubtedly his.

The problem of physical philosophy, as then conceived, was to find some primordial and fundamental nature, by and out of which the sensible universe was built up and produced; something which co-existed always underlying it, supplying fresh matter and force for generation of successive products. The hypotheses of Thales, Anaximander, and Anaximenes, to solve this problem, have been already noticed: Pythagoras solved it by saying, That the essence of things consisted in Number. By this he did not mean simply that all things were numerable, or that number belonged to them as a predicate. Numbers were not merely predicates inseparable from subjects, but subjects in themselves: substances or magnitudes, endowed with active force, and establishing the fundamental essences or types according to which things were constituted. About water,^b air, or fire, Pythagoras said nothing.^c He conceived that sensible phenomena had greater resemblance to numbers than to any one of these substrata assigned by the Ionic philosophers. Number was (in his doctrine) the self-existent reality—the fundamental material and in-dwelling force pervading the universe. Numbers were not separate from things^d (like the Platonic Ideas), but *fundamenta* of things—their essences or determining principles: they were moreover conceived as having magnitude and active force.^e In the move-

Doctrine of
the Pytha-
goreans—
Number the
Essence of
Things.

order. Compare Gruppe, Ueber die Fragmente des Archytas, cap. 5, p. 61-63. About the gradual development of the Pythagorean doctrine, see Brandis, Handbuch der Gr.-R. Philos. s. 71, 75.

^b Aristotel. Metaphys. A. 5, p. 985, b. 27. N. 3, p. 1090, a. 21. Ἐν δὲ τοῖς ἀριθμοῖς, ἐδόκουν θεωρεῖν ὁμοιώματα πολλὰ τοῖς οὐσί καὶ γιγνομένοις, μᾶλλον ἢ ἐν πυρὶ καὶ γῆ καὶ ὕδατι, &c.

^c Aristotel. Metaph. i. p. 990, a. 18. Δὲ περὶ πυρὸς ἢ γῆς ἢ τῶν ἄλλων τῶν τοιούτων σαμάτων οὐδ' ὀτιοῦν εἰρήκασιν, &c. (the Pythagoreans); also N. 3.

^d Physic. iii. 4, p. 203 a. 6. Οὐ γὰρ χαριστὸν ποιῶσι (the Pythagoreans) τὸν ἀριθμὸν, &c., Metaphys. M. 6, p. 1080, b. 18; τὰς μονάδας ὑπολαμβάνουσιν ἔχειν μέγεθος, M. 8, p. 1083, b. 17—ἐκείνοι (the Pythagoreans) τὸν ἀριθμὸν τὰ ὄντα λέγουσιν τὰ γούνη θεωρήματα προσάπτουσι τοῖς σώμασιν ὡς ἐξ ἐκείνων ὄντων τῶν ἀριθμῶν.

^e To illustrate the Pythagorean principle (Number as the fundamental substance and universal primary agent), I transcribe a passage from an eminent physical philosopher of the nineteenth century, Oken's Elements of Phy-