that approaches had been made to such a doctrine, aud Diogenes of Apollonia in particular was led to oppose Anaxagoras, who distinguished Nous or Thought from every other agent within the cosmos which is its work, by postulating as his first principle something which should be at once physical substratum and thinking being. But until dualism had been thought out, as in the Peripatetic school, it was impossible that monism (or at any rate materialistic monism) should be definitely and consciously maintained. One thing is certain : the Stoics provided no loophole of escape by entrenching upon the “ purely material ” nature of matter ; they laid down with rigid accuracy its two chief properties,—extension in three dimensions, and resistance, both being traced back to force. There were, it is true, certain inconsistent concep­tions, creations of thought to which nothing real and external corresponded, namely, time, space, void, and the idea expressed in language (*λεκτόv*). But this inconsist­ency was covered by another : though each of these might be said to be something, they could not be said to exist.

The distinction of force and matter is then something transitory and relative. Its history will serve as a sketch of the cosmogony of the Stoics, for they too, like earlier philosophers, have their “fairy tale of science.” Before there was heaven or earth, there was primitive substance or Pneuma, the everlasting presupposition of particular things. This is the totality of all existence ; out of it the whole visible universe proceeds, hereafter to be again resolved into it. Not the less is it the creative force, or deity, which develops and shapes this universal order or cosmos. To the question, What is God ? Stoicism rejoins, What is God not ? In this original state of Pneuma God and the world are absolutely identical. But even then tension, the essential attribute of matter, is at work. Though the force working everywhere is one, there are diversities of its operation, corresponding to various degrees of tension. In this primitive Pneuma there must reside the utmost tension and heat ; for it is a fact of observation that most bodies expand when heated, whence we infer that there is a pressure in heat, an expansive and dispersive tendency. The Pneuma cannot long withstand this intense pressure. Motion backwards and forwards once set up goes to cool the glowing mass of fiery vapour and to weaken the tension. Hereupon follows the first differentia­tion of primitive substance,—the separation of force from matter, the emanation of the world from God. The germinal world-making powers *(σπερματικοὶ λόyoι),* which, in virtue of its tension, slumbered in Pneuma, now proceed upon their creative task. The primitive substance, be it remembered, is not Heraclitus’s fire (though Cleanthes also called it flame of fire, *φλόξ)* any more than it is the air or “ breath ” of Anaximenes or Diogenes of Apollonia. Chrysippus determined it, following Zeno, to be fiery breath or ether, a spiritualized sublimed intermediate element. The cycle of its transformations and successive condensations constitutes the life of the universe, the mode of existence proper to finite and particular being. For the universe and all its parts are only different embodiments and stages in that metamorphosis of primi­tive being which Heraclitus had called a progress up and down (*δδὸς* *ἄνω κάτω).* Out of it is separated, first, elemental fire, the fire which we know, which burns and destroys ; and this, again, condenses into air or aerial vapour ; a further step in the downward path derives water and earth from the solidification of air. At every stage the degree of tension requisite for existence is slackened, and the resulting element approaches more and more to “ inert ” matter. But, just as one element does not wholly pass over into another *(e.g.,* only a part of air is transmuted into water or earth), so the Pneuma itself does not wholly pass over into the elements. The residue that remains in original purity with its tension yet undiminished is the ether in the highest sphere of the visible heavens, encircling the world of which it is lord and head. From the elements the one substance is transformed into the multitude of individual things in the orderly universe, which again is itself a living thing or being, and the Pneuma pervading it, and con­ditioning life and growth everywhere, is its soul. But this pro­cess of differentiation is not eternal ; it continues only until the times of the restoration of all things. For the world which has grown up will in turn decay. The tension which has been relaxed will again be tightened ; there will be a gradual resolution of things into elements, and of elements into the primary substance, to be consummated in a general conflagration when once more the world will be absorbed in God. Then in due order a new cycle of development begins, reproducing the last in every minutest detail, and so on for ever.

The doctrine of Pneuma, vital breath or “spirit,” arose in the medical schools. The simplest reflexion among savages and half­

civilized men connects vitality with the air inhaled in respira­tion ; the disciples of Hippocrates, without much modifying this primitive belief, explained the maintenance of vital warmth to be the function of the breath within the organism. In the time of Alexander the Great Praxagoras discovered the distinction between the arteries and the veins. Now in the corpse the former are empty; hence in the light of these preconceptions they were declared to be vessels for conveying Pneuma to the different parts of the body. A generation afterwards Erasistratus made this the basis of a new theory of diseases and their treatment. Vital spirit, inhaled from the outside air, rushes through the arteries till it reaches the various centres, especially the brain and the heart, and there causes thought and organic movement. But long before this the peculiar character of air had been recognized as something intermediate to the corporeal and the incorporeal : when Diogenes of Apollonia revived the old Ionian hylozoism in opposition to the dualism of Anaxagoras, he made this, the typical example of matter in the gaseous state, his one element. In Stoicism, for the moment, the two conceptions are united, soon, however, to diverge, —the medical conception to receive its final development under Galen, while the philosophical conception, passing over to Philo and others, was shaped and modified at Alexandria under the influence of Judaism, whence it played a great part in the develop­ments of Jewish and Christian theology.

The influence upon Stoicism of Heraclitus has been differently conceived. Siebeck would reduce it within very small dimensions, but this is not borne out by the concise history found at Hercula­neum *(Index Here.,* ed. Comparetti, col. 4 *sq.).* They substituted primitive Pneuma for his primitive fire, but so far as they are hylo- zoists at all they stand upon the same ground with him. Moreover, the commentaries of Cleanthes, Aristo, and Sphærus on Heraclitean writings (Diog. L., vii. 174, ix. 5, 15) point to common study of these writings under Zeno. Others again *(e.g.,* Lassalle) represent the Stoics as merely diluting and distorting Heracliteanism. But this is altogether wrong, and the proofs offered, when rightly sifted, are often seen to rest upon the distortion of Heraclitean doctrine in the reports of later writers, to assimilate it to the better known but essentially distinct innovations of the Stoics. In Heraclitus the constant flux is a metaphysical notion replaced by the inter­change of material elements which Chrysippus stated as a simple proposition of physics. Heraclitus offers no analogy to the doctrine of four (not three) elements as different grades of tension ; to the conception of fire and air as the “form,” in Aristotelian terminology, of particulars ; nor to the function of organizing fire which works by methodic plan to produce and preserve the world *(πυρ τεχνικὸν δδω βαbίζov ἐπ'ὶ yέvεσιv κόσμου).* Nor, again, is there any analogy to the peculiar Stoic doctrine of universal intermingling *(κpασιs δι λoυ).* The two active elements interpenetrate the two lower or more relaxed, winding through all parts of matter and so pervading the greater masses that there is no mechanical mixture, nor yet a chemical combination, since both “force” and “matter” retain their relative characters as before. Even the distinction between “force” aud “matter”—so alien to the spirit of Heraclitus—is seen to be a necessary consequence. Once assume that every character and property of a particular thing is determined solely by the tension in it of a current of Pneuma, and (since that which causes currents in the thing cannot be absolutely the same with the thing itself) Pneuma, though present in all things, must be asserted to vary indefinitely in quantity and intensity. So condensed and coarsened is the indwelling air-current of inorganic bodies that no trace of elasticity or life remains ; it cannot even afford them the power of motion ; all it can do is to hold them together *(συνεκτική δivaμιs),* and, in technical language, Pneuma is present in stone or metal as a retaining principle (ἕξις=hold), explaining the attri­butes of continuity and numerical identity *(συνεχή καϊ ηνωμένα)* which even these natural substances possess. In plants again and all the vegetable kingdom it is manifest as something far purer and possessing greater tension, called a “nature,” or principle of growth *(φυσιs).* Further, a distinction was drawn between irra­tional animals, or the brute creation, and the rational, *i.e.,* gods and men, leaving room for a divergence, or rather development, of Stoic opinion. The older authorities conceded a vital principle, but denied a soul, to the brutes: animals, they say, are *ζφa* but not *έμψυχα.* Later on much evidence goes to show that (by a divergence from the orthodox standard perhaps due to Platonic influence) it was a Stoic tenet to concede a soul, though not a rational soul, throughout the animal kingdom. To this higher manifestation of Pneuma can be traced back the ‘ ‘ esprits animaux ” of Descartes and Leibnitz, which continue to play so great a part even in Locke. The universal presence of Pneuma was confirmed by observation. A certain warmth, akin to the vital heat of organic being, seems to be found in inorganic nature: vapours from the earth, hot springs, sparks from the flint, were claimed as the last remnant of Pneuma not yet utterly slackened and cold. They appealed also to the velocity and dilatation of aeriform bodies, to whirlwinds and inflated balloons. The Logos is quick and power­ful, and sharper than any two-edged sword, piercing even to the