dividing asunder of the joints and marrow. Tension itself Cleanthes defined as a fiery flash (*πληγὴ* *πvρός).* Take the fundamental pro­perties of body—extension and resistance. The former results from distance; but distances, or dimensions, are straight lines, *i.e.,* lines of greatest tension (*εἴς* ἄ*κρον τετaμέvὴ).* Tension produces dila­tation, or increase in distance. Resistance, again, is explained by cohesion, which implies binding force. Again, the primary substance has rectilinear motion in two directions, backwards and forwards, at once a condensation, which produces cohesion and substance, and a dilatation, the cause of extension and qualities. How near this comes to the scientific truth of attraction and repulsion need hardly be noted. From the astronomers the Stoics borrowed their picture of the universe,—a *plenum* in the form of a series of layers or con­centric rings, first the elements, then the planetary and stellar spheres, massed round the earth as centre,—a picture which dominated the imagination of men from the days of Eudoxus down to those of Dante or even Copernicus. As to the physical consti­tution of bodies, they were content to reproduce the Peripatetic doctrine with slight modifications in detail, of hardly any import­ance when compared with the change of spirit in tho doctrine taught. But they rarely prosecuted researches in physics or astronomy, and the newly created sciences of biology and compara­tive anatomy received no adequate recognition from them.

If, however, in the science of nature the Stoics can lay claim to no striking originality, the case is different when we come to the science of man. In the rational creatures—man and the gods—Pneuma is manifested in a high degree of purity and intensity as an emanation from the world-soul, itself an emanation from the primary substance of purest ether,—a spark of the celestial fire, or, more accurately, fiery breath, which is a mean between fire and air, characterized by vital warmth more than by dryness. The physical basis of Stoic psychology deserves the closest attention. On the one hand, soul is corporeal, else it would have no real existence, would be incapable of extension in three dimensions (and therefore of equable diffusion all over the body), incapable of holding the body together, as the Stoics contended that it does, herein pre­senting a sharp contrast to the Epicurean tenet that it is the body which confines and shelters the light vagrant atoms of soul. On the other hand, this corporeal thing is veritably and identically reason, mind, and ruling principle (λόγος, *vovς, ηγεμονικόν)* ; in virtue of its divine origin Cleanthes can say to Zeus, “ We too are thy offspring,” and a Seneca can calmly insist that, if man and God are not on perfect equality, the superiority rests rather on our side. What God is for the world that the soul is for man. The Cosmos must be conceived as a single whole, its variety being referred to varying stages of condensation in Pneuma. So, too, the human soul must possess absolute simplicity, its varying functions being conditioned by the degrees or species of its tension. It follows that of “ parts ” of the soul, as previous thinkers imagined, there can be no question ; all that can consistently be main­tained is that from the centre of the body—the heart—seven distinct air-currents are discharged to various organs, which are so many modes of the one soul’s activity.@@1 The ethical consequences of this position will be seen at a later stage. With this psychology is intimately connected the Stoic theory of knowledge. From the unity of soul it follows that all psychical processes,—sensation, assent, impulse,— proceed from reason, the ruling part ; that is to say, there is no strife or division : the one rational soul alone has sensations, assents to judgments, is impelled towards objects of desire just as much as it thinks or reasons. Not that all these powers at once reach full maturity. The soul at first is void of content ; in the embryo it has not developed beyond the nutritive principle of a plant *(φύσις)* : at birth the “ ruling part ” is a blank tablet,

although ready prepared to receive writing. This excludes all possibility of innate ideas or any faculty akin to intuitive reason. The source of all our knowledge is experience and discursive thought, which manipulates the materials of sense. Our ideas are copied from stored-up sensations. No other theory was possible upon the found­ation of the Stoic physics.

Note the parallel between the macrocosm and the microcosm. The soul of the world fills and penetrates it : in like manner, the human soul pervades and breathes through all the body, informing and guiding it, stamping the man with his essential character of rational. There is in both alike a ruling part, though this is situate in the human heart at the centre,—not in the brain, as the analogy of the celestial ether would suggest. Finally, the same cause, a relaxation of tension, accounts for sleep, decay, and death of man and for the dissolution of the world ; after death the dis­embodied soul can only maintain its separate existence, even for a limited time, by mounting to that region of the universe which is akin to its nature. It was a moot point whether all souls so sur­vive, as Cleanthes thought, or the souls of the wise and good alone, which was the opinion of Chrysippus ; in any case, sooner or later individual souls are merged in the soul of the universe, from which they proceeded. The relation of the soul of the universe to God is quite clear : it is an inherent property, a mode of His activity, an effluence or emanation from the fiery ether which surrounds the universe, penetrating and permeating it. A Stoic might consist­ently maintain that World-Soul, Providence, Destiny, and Germinal Reason are not mere synonyms, for they express different aspects of God, different relations of God to things. We find ourselves on the verge of a system of abstractions, or “attributes turned into entities,” as barren as any excogitated in mediæval times. In a certain sense, Scholasticism began with Chrysippus. To postulate different substances as underlying the different forces of nature would have been to surrender the fundamental thought of the system. What really *is—*the Pneuma—neither increases nor diminishes ; but its modes of working, its different currents, can be conveniently distinguished and enumerated as evidence of so many distinct attributes.

One inevitable consequence of materialism is that subject and object can no longer be regarded as one in the act of perception, as Plato and Aristotle tended to assume, however imperfectly the assumption was carried out. The presumption of some merely external connexion, as between any other two corporeal things, is alone admissible, and some form of the representative hypothesis is most easily called in to account for perception. The Stoics explained it as a transmission of the perceived quality of the object, by means of the sense organ, into the percipient’s mind, the quality transmitted appearing as a disturbance or impression upon the corporeal surface of that “thinking thing,” the soul. Sight is taken as the typical sense. A conical pencil of rays diverges from the pupil of the eye, so that its base covers the object seen. In sensation a presentation is conveyed, by an air-current, from the sense organ, here the eye, to the mind, *i.e.,* the soul’s “ruling part ” in the breast ; the presentation, besides attesting its own existence, gives further information of its object,—visible colour or size, or whatever be the quality in the thing seen. That Zeno and Cleanthes crudely compared this presentation to the impres­sion which a seal bears upon wax, with protuberances and inden­tations, while Chrysippus more prudently determined it vaguely as an occult modification or “mode” of mind, is an interesting but not intrinsically important detail. But the mind is no mere passive recipient of impressions from without, in the view of the Stoics. Their analysis of sensation supposes it to react, by a variation in tension, against the current from the sense-organ ; and this is the mind’s assent or dissent, which is inseparable from the sense presentation. The contents of experience are not all alike true or valid : hallucination is possible ; here the Stoics join issue with Epicurus. It is necessary, therefore, that assent should not be given indiscriminately ; we must determine a criterion of truth, a special formal test whereby reason may recognize the merely plausible and hold fast the true. In an earlier age such an inquiry would have seemed superfluous. To Plato and Aristotle the nature and operation of thought and reason constitute a sufficient criterion. Since their day not only had the opposition between sense and reason broken down, but the reasoned scepticism of Pyrrho and Arcesilaus had made the impossibility of attaining truth the primary condition of wellbeing. Yet the standard which ultimately found acceptance in the Stoic school was not put for­ward, in that form, by its founder. Zeno, we have reason to believe, adopted the Cynic Logos for his guidance to truth as well as to morality. As a disciple of the Cynics he must have started with a theory of knowledge somewhat like that developed in the third part of Plato’s *Theætetus* (201 C *sq.),—* that simple ideas are given by sense, whereas “opinion,” which is a complex of simple ideas, only becomes knowledge when joined with Logos. We may

@@@1 These derivative powers include the five senses, speech, and the reproductive faculty, and they bear to the soul the relation of qualities to a substance. The ingenious essay of Mr R. D. Archer Hind on the Platonic psychology *(Jour, of Phil.,* vol. x. p. 120) aims at establishing a parallel unification on the spiritualistic side ; comp. *Rep., x.* 612 A.