Boston Octr. 22d. 1840

Recapt.n of 4th. & Introduction to 5th. Lecture.

After discussing the subject of inert, dead & sluggish mr. we treated, in our last Lecture, of that Spirit, or if you dislike that term, that effecient cause or anonymous something wc. causes the dead to move. Difficult as it is to obtain an idea of the primary mr. it is no less difficult to obtain an idea of the primary Life or that primum mobile, or original motion, wc. throws into shape, & actuates that lifeless mr. wc. without it could never move itself. But we were puzzled to know by what allusion, metaphor or allegory we should convey to you an idea of that all powerful agent wc. moves the world, actuates organized bodies & sustains Nature. The best allusion we have ever met with, is that which compares the material or organic body to a pipe, or flute, & the flatus or breath wc. gives it sound, to that motion, or life wc. sustains this organized body, and wc. causes it to grow, & to continue its kind for ever. We P. that this vivifying something was not the organization, or mere material part of us; for deprive a man of that "vital spark of heavenly flame" wc. resides in the air, by stop-ping his breath, & he dies! and yet his organization is not destroyed:—the fine structure of his lungs is just the same; & so is his heart; The delicate fabric of his brain & nervous system is unaltered. There is nothing wanted but a portion of that celestial fire wc. we

we draw in with every breath. This power, or vital spark is, like the primary mr., not an object of our senses. We know it only by its effects; for when it departs the body ceases to live; and the members soon pass into putrefaction & decay. The ancient Stoics endeavoured to explain this by supposing that beside this great body of the material world, there is belonging to it a Soul, or anima Mundi, wc. principally resides in the air, & aërial regions; and into which, when any organized body was immersed, that body whether animal or vegetable progressed & acted according to the mechanical arrangement of the matter, or structure of that body. Thus a spider, having the material part of his body arranged in a certain way, would & must, when immersed in this common Soul of the world, spin cob-webs; and man, whose structure, & organization is so various & so refined, when immersed in this universal soul, would & must of necessity talk, dispute, reason, and spin philosophical theories. The poet Lucretius maintained this doctrine, & gave it a currency among the Roman people.

After all, there is something plausible in the doctrine that the powers of an animal are according to the organization, or structure of his body, & so of the vegetable; for in

viewing the scale of beings, we see it stretching in uniform gradation from human excellency downwards, till it disappears, in a shade of ambiguity with the living state of vegetables. But the chain of life ends not with the plant. It goes still lower. That is not the place where vitality has marked her degree of 0.

The Sun appears to be the source whence this vital energy proceeds. That there was a vivifying spirit, or vital something in the atmosphere, was known in the earliest ages of the world. This vital something, has, of late years obtained the name of Oxygen, w.ch we shall speak of hereafter.

We gave you, in our last Lecture, a sketch of the opinions of several antient Philosophers respecting the birth of the world. We related that of Thales, who maintained that water was the Element out of which all things were created; and then the opinion of Heraclitus, who taught that fire was the origin of every thing in our system, for that it held such a sway in Nature that water itself could not exist without it; but looses its fluidity and turns into a chrystal, called ice, when fire leaves it.

Then we gave you the opinion of Anaximenes, who contradicted both Thales & Heraclitus, & maintained air to be the sole principle of all things, seeing fire itself cannot exist without ~~air~~ it.

We then give you Democritus' system of atoms; or the corpuscular system, w.ch by the help of Sir I. Newton & others since his time ~~ha~~ will probably stand firm & immoveable, like a rock amidst the waste of ages. This doctrine now flourishes under the name of "the Mechanical philosophy". The foundation of it was laid 22,00 years ago by Democritus, on w.ch foundation Newton constructed his Edifice, w.ch becomes firmer the higher it is raised, while the fanciful structure of Des Cartes has fallen to ruin, because it was built without any foundation.

We closed our Lecture with a Specimen of the sublime philosophy of the eloquent & amiable Plato. It is said of him, that when an infant, in his cradle, Bees hovered round him, & lit upon his lips; an omen, s.d the Soothsayers of that day, that honied sentences w.d flow from his eloquent tongue. Plato, beside being a profound ~~Scholar~~ philosopher, and deep scholar, was an accomplished gentleman. He was the beloved pupil of Socrates, & the Preceptor of Aristotle. He, in imitation of his great master Socrates, stript Philosophy of her coarse garb; & dressed her out in the elegant robes of a tasteful & accomplished Lady; & by so doing he captivated the world with her charms. Plato was well acquainted with the art of recommending science by elegance of language, & of embellishing philosophy with polite literature. He knew that those authors who w.d find readers, and those Teachers, who w.d secure attentive hearers, must

please while they instruct. He was not one of those austere teachers, who think obscurity contributes to the dignity of learning; and that to be admired it is necessary not to be understood! —

The first fathers of the christian church were almost all Platonics. They found something in the writings of Plato congenial with the christian system; & this will not appear strange to those who recollect that Plato was constantly repeating the words & doctrines of his master Socrates, that great Light of the Heathen world! who proclaimed in the streets, & in the high ways that the Supreme Wisdom preserves the Universe in eternal youth, & tho' invisible in himself, is resplendently manifested in the wonders of Creation!

From the specimen of the philosophy of Plato w. we gave you in our last lecture, it does appear that he had some knowledge of the writings of Moses; for, from the account we gave you, you must have been struck with the similarity between some parts of it, & the account given of the creation in the Book of Genesis. As he resided some time in Egypt, it is probable that he had seen, among the Jews, the five books of Moses. Plato lived at the same time with the Prophet Jeremiah. St. Austin tells us that Jeremiah died 60 years before Plato went into Egypt —

The Philosophy of antient times was not like that w.c has, in latter days made so much noise in the world with its disputes and passion. That love of wisdom, w.c is the original meaning of the word "philosophy;" & w.c Socrates & Plato professed, fixed itself solely upon truth. The universal principles upon which it formed its precepts was good sense: It alone traced things up to their proper fountains: it taught reason itself to be subject to certain rules, by w.c it might confirm & strengthen itself against all doubt, error or false opinion, & continue constant & unshaken in its idea of things, at the same time & calm that natural inquietude that so often torments the mind. Plato was a man of the first rank & quality: he was descended ~~from~~ on the father's side from royal ancestors, & by his mother's from the famous lawgiver Solon. The ~~famous~~ celebrated Xenophon studied under Socrates at the same time with Plato; they altogether formed a bright constellation of Grecian Philosophy; in w.c Socrates shown a star of the first magnitude, for he taught that Philosophy, or the Love of Wisdom, w.c is a better term for it, was a sublimer kind of skill in the oeconomy of human life; and that virtue was a science, w.c has for its object the amelioration of the human heart; and that it can be extended by exercise & meditation. Socrates who ~~was~~ lived several centuries before our Saviour, was not "altogether", but "almost a christian" His language to those who followed him was — "Adore the Deity

"Love your country. Honor your Parents; and do good to all who do good to you". He inculcated prayer, & sacrifices, in wc. says he, the purity of the heart is more essential yn the magnificence of the offerings". He taught also that to "please the Deity, we must be benevolent to our fellow men". Such was Socrates, the Preceptor & parental friend of the all accomplished Plato, whose theory of Cosmogony & birth of the world was given in our last lecture. — We make no apology for introducing these biographical sketches and narratives, into our course entitled "Natural History". Should they appear to naturally grow out of the subject & not bear the aspect of unseemly excrescences, we shall be gratified. You should bear in mind, that we have intentionally, & with the best ~~intention~~ views interwoven such observations into our course for more yn. 20 years past, for the benefit of your sons & your brothers at the University. Mere verbal descriptions of detatched & insulated objects, & specimens of Nat. His.y is the dryest of studies. The study of Algebra is poetry to it. Our plan is peculiar. We have aimed to bring it as nearly as possible to the idea recommended by Lord Kaims, viz illustrations of the Oeconomy of Nature, mixed with reasonings, & interspersed with moral reflections. I beg you always to bear in mind that this course was contrived and prepared for the mere youth at our college. This will account for some part of it being a sort of milk diet adapted to for young people, rather yn. meat for older ones.

Aspasia

Let us now

Let us now return to our favourite Plato. After speaking of the Deity, or Great First cause, in a strain of sublimity equal to any thing in any book we have, he says — "Matter equally eternal, subsisted in fearful fermentation, containing within itself the germs, or seeds of all things, & agitated by impetuous motions wc sought to unite its parts viz. attraction, & a destructive principle wc instantly seperated them, viz repulsion: susceptible of every form, but incapable of retaining any; horror & discord wandered over its tumultuous waves!

When the moment decreed for this great work arrived, [viz the creation of the world] the Eternal Wisdom, says Plato, issued His commands to Chaos, & instantly the whole mass was agitated by an exuberant, or fructifying, & hitherto unknown motion. Its parts wc had before been seperated by an implacable hatred, discordance [or repulsion] hasten to unite, to enchain each other (attraction) Fire now, for the first time shone in the midst of darkness; & the Air seperated itself from the Earth, & from the Waters; and these Four newly created Elements were destined to form, or enter the composition of all bodies."

Now by the term Elements is meant the first principles of wc all bodies (in the system of Nature) is composed. An element is the last term of our analitical results. It is the ne plus ultra

of our investigations; hence what is considered as an element by one chemist, or Secretary of Nature, is not allowed to be an element by another. These elements are supposed to be few in number, not to exceed four; & to be unchangeable in their nature, & by their combinations to produce that endless variety, wch every where & incessantly meet the observers eye.

The antient Philosophers fixed the number of elements to four viz fire - air - earth, and water; a fifth essence has been added by more modern philosophers; & in this 5th essence the partenlar, or medicine qualities of the body was supposed to reside; & hence called the 5th element or quintessence.

Some think that Light ought to be admitted as an element, since organization, sensation, and spontaneous motion exist only in places exposed to the influence of light. But when speaking of elements, we mean to express by that term, the last point wch analysis is capable of reaching. But what shall we say, if we should hereafter find that water could be decomposed; air analyzed, Light dispected, & Earth reduced to a substance much more simple yn we now find it. We shall then say that Fire is the only reputed Element that maintains its ground. To the honor of Heraclitus be it spoken, Fire, or calloric, seems the only agent in Nature that maintains its sovereign reign & independence as an Element —

If it be asked what & where is the source of this all powerful agent Fire? I answer the Sun is the efficient cause of the motions of this subtle fluid, & the various phenomena of our system are the effects of these motions. — But this is anticipating our subject —

Another source of Fire is in the bowels of the Earth. There is a an ever burning fiery Furnace in the subterranian recesses of the globe, w.ch seems to have little or no connection w.th the great fountain of heat & light the Sun