(Read March. 16 1815
Spence 8c.)

Concluding Lecture

Aug.st 3d. 1807 —

As the present lecture concludes our course for this season, it will not I hope be unpleasant to cast our eyes back on the space we have passed over.

We began by saying that Philosophy had three objects — God, Nature and Man; that it had moreover three rays; for that God strikes the human intellect by a refracted ray, from the inequality of the medium between us and Him. 2dly, man is exhibited to himself by a reflected ray, but that Nature strikes the human intellect by a direct ray.

We S.d, after Lord Bacon, that the sciences were like pyramids, erected upon the basis of natural history & ex-perience; that the first stratum from the basis was physica and that next the apex was metaphysica; but for the vertex itself, the manner in which the Deity worketh from the begining to the end, the summary of the law of nature that, that was higher than human eye could reach, and therefore a vain & useless pursuit.

We S.d moreover, that the science of Nature had three degrees that the 1.st fixed our attention to the outside merely, teaching us to remark external characters, in order to enable us to dis-criminate the various natural bodies of which this world is com-posed, and that this was Natural history. But that if 3.dly we penetrate the intimate parts, so as to examine the material

elements

elements, their mixtures & proportions to one another, & the operations of fire upon them, that it was then chemistry. The recapitulation of this figurative doctrine was, — that N.P.Y taught us the elements, the alphabet of the great book of Nature; that physics or Natural philosophy instructed us in the Spelling, or putting these elements together: and that when these were joined with chemistry they taught us to read the volume of Nature distinctly.

We next spoke of the three kingdoms of Nature, 1st the Fossil w.h constitutes the crust of the earth; 2d the Vegetable which covers the face of it, and 3rd the animal, w.h animates the whole. We then endeavoured to inculcate the doctrine of one universal or primary matter; we said that the various objects of the three kingdoms of Nature were all made out of one matter, one simple, primary or universal matter w.h was constantly changing out of & into all the various bodies & substances perceivable by our senses: that the sum total of matter in the Universe remains the same now as at the first creation; that as it was the work of Omnipotence to create something out of nothing, so that same omnipotence is required to reduce any thing back to nothing. Here we shewed you that every birth, every recent production, that every moment occurs in the animal or vegetable Kingdom is not an absolute

new, or fresh creation, an evocation, or calling of something out of nothing, but only a change or mutation from something which before existed. We reminded you that no terrestrial thing was stationary; that substances of every kind either immediately, or mediately pass one into another, and reciprocal deaths, dissolutions and digestions support by turns all such substances out of each other.—

After speaking of "immortal matter", we discanted on the moving, or effecient cause, or that motive something wc associates the material elements, & which employs them when associated according to their various & peculiar characters. Then we spoke of the smallest conceivable organized bodies, or organic molicula. Then we give you the minute anatomy of a seed, and shewed you that it contained, under divers membranes, the miniature, or epitome of the future plant. We then spoke of water, heat and oxygen, in develloping the infant plant. We then traced the seed put into the ground to its formation of the root, the stem, the leaf, the flower, to the seed again. We then gave you the outlines of the Linnean system of Botany—the general anatomy & oeconomy of a plant; the

principle

principles of Agriculture, because Agriculture is the great Art, w.ch every government ought to protect, every proprietor of land to practise, and every inquirer into nature to study & improve.

We then gave you the anatomy of an hen's egg, and shewed you how exactly it corresponded with a seed: we said that all eggs & all seeds were essentially the same; and that as every plant arose from a seed, so every animal originated from an egg. We traced the process of incubation and applied its principles to the generation of all animated nature

After speaking of the Animal Kingdom in general we discanted on the Scale of beings, or that beautiful system of subordination, w.ch rises by insensible degrees from the senseless clod up to the human race. Here it was that Man, who stands at the head of this scale, offered himself to our view! We saw & admired his curious structure & wonderful oeconomy! We contemplated the towering faculties of his mind; and saw with gratitude the honorable station allotted him in the Scale of beings, as filling the middle space, between the animal & intellectual nature, the visible & invisible world, constituting that link in the chain of beings so emphatically termed

the "Nexus utriusque Mundi." — We S. that contem-
-plation was the peculiar attribute & ornament of
man, by which sublime faculty he could survey
the universe & familiarize himself with the Stars:
— to illustrate this faculty we gave you a view of
the Solar System, and endeavored to convince you
that every thing in these great outlines of our world
was systematic, that all was combination, affinity
and connection. We ~~quitted~~ descended from
the general contemplation of these wonders of our system
to the particular examination of one of the bodies
w.ch circulate in it, viz this globe w. we inhabit.
We gave a general description of it, together with
Bishop Burnets, Dr Woodward's, Mr Whiston's, &
Count Buffon's theory or the original formation of the
earth. We distinguished the mountains of the earth
into the primoval & alluvial. It was here that we
contemplated that never ceasing circulation sub-
-sisting between the salt ocean & the mountains, through
the instrumentality of the air, and by the course of rivers
to the ocean again. Here we labored to show you the
dependencies, relationship & reciprocal uses of the
remote parts of our system, demonstrating an unity
of design throughout the vast fabric of the world.

Then

Then we spoke of the contents of the earth & gave you several lectures on Mineralogy. We told you that our country was rich in Mines; and that it was a disgrace that we Americans should be dependent on foreign countries for riches that lay under our feet.

Having invited you to turn your eyes a second time to the great outlines of Nature, - to that system of which this earth makes but an inconsiderable part; and having exhorted you to employ the mental telescope until you saw our Sun, but as a Star - nay - the Solar System itself as a point! in order to impress on your minds some faint idea of the awful magnificence of the world above us; we then desired you to reverse the Telescope, and to convert it into a Microscope in order to discern the world beneath us, or those objects which from their extreme minuteness cannot be discerned without the help of microscopes. Here we viewed with astonishment those outworks of the creation Insects, constituting what Cicero calls the "insatiable variety of nature": and this naturally leads

led us to speak of instinct, or that principle (w.c is not reason) that guides such diminutive creatures in the execution of such wonderful art, as we see in the Bee-hive – the Ants-nest, and many other insects. This led us in our last lecture to a very serious discussion respecting Nature, and certain atheistical doctrines promulgated by some of the Ancients, and revived of late years by a junto of learned men in France; but this copious subject is I presume too fresh in your memory to need recapitulation – and now we are going to shew you another use to which the subject of these lectures may & ought to be put by every wise man, viz that this world is a mirror reflecting the the sublimest moral truths, or in other words – in every page of the great book of Nature moral & political truths are written for our instruction.