

We spoke in our Lecture of the Chain of Beings, w^{ch} extends from the lowest to the highest order of terrestrial existences, by links so nicely adapted, that the beginning, & the end of each were invisible to the nicest eye. We s^d that the two extremes of this chain, were out of sight, from the grandeur of one, & the subtilty of the other; and that when we attempted to investigate them, our baffled reason, was frequently compelled to seek a solution of its difficulties in Omnipotence!

We s^d that ^{not} only the qualities & faculties of beings, but their production or birth rose pretty ^{much} in the same regular gradation, or order of dignity: — thus that animal w^{ch} is produced by a cutting, as in the Polypus, is but one degree above a vegetable; — that produced by an egg, is a step higher; that class of animals w^{ch} is brought forth alive is still more exalted; and of these, such as bring forth one at a time, is the most complete; — the formost of w^{ch} stands the great Master of them all MAN, whose general nature and faculties compose the subject of our present contemplations.

When we s^d in our last Lecture that there was but one rational animal on earth, & that was man; we by the term man meant woman likewise: for we are here speaking of the human species, & not of sex. Were we to speak merely, & discriminatively of the masculine animal, man, it w^d be treating our subject by the halves. We might as well describe only one shell of this oyster; or in giving a

description of a pair of scissors, speak only of one blade; a thing by itself imperfect & useless.

" In everything that does not discriminate the sex woman is man, says Rousseau. She has the same organs, wants & faculties. The machine is constructed in the very same manner. They move by the same spring. Their figure is very like; and under what so ever relation we consider them, there is no other difference between them, but that of plus & minus. To be convinced of this you need only to attend to a pair of twins, brother & sister, in the infantile period of their lives.

" In every thing that distinguishes the sex, man & woman have relations & differences: the difficulty of comparing them, arises from the difficulty of determining in the frame & make of each, what belongs to the sex, and what does not, for these are frequently imperceptible to our eyes. The only thing we can tell with any certainty, is, that whatever they have in common, belongs to the species; and whatever they differ in, depends on the sex. In this two fold view, we observe such a number of relations (affinities) & contrasts between them, that it is one of the wonders of creation, says the Philosopher of Geneva, to have been able to form two beings so much alike, with such different constitutions."

In that w. they have in common, they are equal, e.g. in mental faculties. Realms have been as well governed under women as under men; & history gives innumerable instances

instances of heroism, or strength of mind in women. [soldiers or sailors] [not formed for]

It is remarkable that of all the animals in creation man alone sheds tears, w^{ch} spring from an emotion of sensibility unknown to any other animal. If shedding tears be a mark of our humanity, & of our high rank in the scale of beings, it will remain a question, whether in this respect, the women will not take the right hand of the men.

It is also remarked that man alone expresses the gladness of his soul by laughter.

In man there is not an instinct, common to the whole species, as in brutes; but a mind belonging to every individual, w^{ch} not only prompts him to action, but instigates him to all the various exertions of invention, & the diversified operations of genius.

When we subject the human body to dissection, in order to find in the structure of its brain & other organs something, w^{ch} we do not observe in other animals to account for this superior operation of the mind, we are obliged to confess the futility of our researches: We must \therefore necessarily ascribe this privilege of reason to something altogether immaterial, & therefore immortal, i. e. incapable of death.

If that species of monkey w^{ch} approaches nearest to man, the Orang Outang, be examined anatomically, we perceive a surprising similarity to man in its conformation: in so much that it is wonderful, that this conformation is productive of so few advantages. The tongue, & all the organs of the voice, & the ear, & the organs of hearing, are the same as in men, and yet the animal is dumb. The Brain is formed in the same

same manner with that of man, & yet the creature wants reason: An evident proof, says Goldf. that no disposition of matter will give mind; & that the living body, how nicely so ever formed, is formed in vain, when there is not infused a Soul to direct its operations." see Vol. IV. p. 193.

If we submit the human body to a chemical analysis, by fire, we shall find it will afford the same elements, as that of a horse, dog, or bird. The only sure method of attaining to a knowledge of the human body is to examine it anatomically. (i. e. by cutting into it by our instruments).

By anatomizing it, we discover that the greatest part of it consists of a conical, elastic, inflected tube, or canal, w.^{ch} arises from the heart, & dividing infinitely into similar lesser ones, goes to each & every part of the body, conveying a red, & apparently homogeneous fluid called Blood.

In the centre of the Chest, between & c. v.

Magnesia. Genus. V.

Of the first order, Earths, the 3. & 4. Genera have viz. Sil. & Argil. been already particularly described. The Magnesian is the 5. and is composed of such species as have their principle constituent part magnesia, but the other component parts collectively always have been found to exceed the portion of pure magnesia. The magnesia seems not to be intimately combined with the others, but merely mixed; for after pulverization, nitric acid will take up its part. Fossils of this genus contain generally silica, calcareous E. and the oxide of iron, which colours them.

The characteristics of this Genus are a greasy feel, a greenish colour, do not adhere to the tongue, hard, so as not to give fire with steel, opaque, sometimes translucent at the edges, do not burn to brick so easy as clays, enters but partially into animal bodies, hence "petrifications (so called) nor animal exuvia are found with any of the species. They melt with borax, and do not like quick lime, become hot upon being moistened, after calcination. Their Specific gravity is between 3.560 and .805.

Steatite. The first species of this genus is steatite or Soap stone, which I believe is generally known on account of its capability for enduring the most intense heat without fusion or decrepitation, making and flying to pieces in the fire. Black logs and furnace hearths are generally made of this very useful mineral.

It is greasy to the touch, soft, so as to be readily cut with a knife or scratched with the nail, & may frequently be crumbled between the fingers. Its colour is white, greenish, white, yellowish white, green, in severall shades, olive green, or two, more or severally in the same specimen. That common among us is white and olive green.

Characteristics.

Use

Hardness.

Colour

and sometimes yellow, in irregular lamina having something
the appearance of talc, hence sometimes called Talcose. It is
generally found in compact layers, interspersed, kidney shaped,
seldom of regular forms, Crystallized very seldom in hexagonal
prisms with an hexagonal pyramid. The best is from China and
is used to absorb oils from cloathing, as we use French
chalk which is likewise a variety. Some of the harder varieties
of from China take fine polish. That found near Portsmouth
is a silvery green, and white, appearing like asbestos. This
species is generally translucent at the edges and is of various
degrees of compactness, passing in Serpentine.

Colour.

Talc is greasy to the touch, and is of various colours. yellowish
white, silvery white, greenish &c. It is brilliant in various
degrees, and transparent only when thin. Its most obvious

Lamina

quality is lamellar, ^{& foliated} being infinitely divisible, for ought known
into lamina. Take ^{the thinnest} lamina you can, and hold in
the flame, the heat will so far expand it, that each of the

Divisibility

many lamina into which they are divided will appear
as thick as the first. It has been used as a paint, which has, I under-
stand, been successfully tried at Springfield in America, ~~at~~
In and near Springfield, Conn. and on Connecticut river,
shistis micaceous abounds, in irregular wance like lamina
frequently imbedding garnets, colored with the carbonate of
iron. This mineral is composed mostly of talc, and is fre-
quently crystallized in lenticular plates. It is found in
Granite, Siarite, Gneiss, and many primordial aggre-
gates in this town and all over the continent, I dare say.
It is almost always conformed with mica, to which it has

great resemblance, and is probably of the same formation, In mica, silex predominates, which gives it elasticity, in Talc, magnesia, without elasticity. It is frequently crystallized in thin hexagonal plates in granules, and in lenticular plates.

Indurated Talc, Chlorite, Chlorite Shist, I am not acquainted with. Next to these follows Serpentine, which is frequently cut into seals, mantle tree pieces, snuff boxes, and is of considerable value and demand in Europe. In Newbury port, or rather Byfield, there is a place called Devil's Den, which by the description and its productions will be worth the attention of any of you who should have an opportunity of visiting it. Serpentine is divided by Jameson in ^{to} common and precious, that from this place is of the first quality, precious, and very beautiful. Its colour is white through various shades to a pretty bright yellow; pearly, from white through various beautiful shades to green, pearly blue and black. Some times interspersed with red of different shades, which is supposed by Schimper to be the variolate of many other authors. Its fracture is conchoidal, angular, lamellate and determinate. Translucent at the edges and frequently contains micaceous particles, not very seldom crystallized. Iron pyrites, and sometimes iron glances, have been found imbedded in it. Some specimens when exposed to the air indicate a mixture of a portion of iron, because ^{they} turn red. viz. rust colour, and decomposed in the course of a few years. Its matrix of asbestos, found at this place.

Colour

Fracture

at Newport, Rhode Island there is a Serpentine, which goes by the name of marble, perhaps more beautiful than that from Newbury Port. Its fracture is much the same with that above mentioned, except sometimes more fibrous, and generally more lamellar undulating. Both are veined with amianthus, but not with asbestos, as I have observed.

Fracture

Colour.

Its colour is from yellow through many shades of pearly blue, to dark olive, green but never of a dark green. Its usual appearance is that a serpents skin, upon which its name is derived. There is no specimen, in the cabinet presented this, by D. Lettome, to be compared to these now described. I have found serpentine frequently on some of the adjacent hills, in the crannies of ~~sand~~ trap, and on Basalt. It has likewise been found in many parts of our country, but much inferior to that from Newport, & Newbury Port. It is to be met with in all countries in all the states, colours, ^{varieties} before recited, but this cannot particularly interest us Yankees.

Nephrite. This stone has its name the ridiculous idea of its curing pain in the kidneys. It is the hardest of the genus and will sometimes give fire with the steel. Its fracture is splintery, ~~conchoidal~~ ^{granular}, ~~and sometimes wavy~~. Its colour is greenish yellow, bluish green and looks as if it had absorbed oil, which is the best distinguishing characteristic. Jade, the usual name for this species, is translucent but never transparent. ~~It is found in veins near Gulic & Judding stone on the Hills in Brooklyn Brighton & New Haven.~~

Variety 1. Is of the colour already mentioned and blackish green and redish grey, It is crystallized in long 4 sided truncated prisms, generally laying parallel, diverging and irregularly crossing in another. The fracture is radial and granulated. The crystals, translucent, longitudinally striated and rigid. Is frequently confounded with pyrite.

Is found in quartz felspar, mica, and many of the species of this genus. On trap in Charlestown. Likewise found in Chelsea.

Var. 2d is in more compact crystals of a silvery white and many of the various colours of the 1st Var. Its fracture is conchoidal, and the crystals are longitudinally striated and has a vitreous lustre. The third Var. is I believe rare and resembles mother of pearl. Actinost is found in amygdaloid in Brighton Brook.

Tremolite, ~~if I do not mistake it for a species of small quantity~~ ^{has its name from being first discovered at} ~~but one other place~~ ^{It is abundant} ~~and that is at the Devils Den Newbury Port~~
I believe I found something at least very like in Charlestown, but it was too brittle and in too small particles to be accurately examined. It is white and might be mistaken for lime stone, and is there called marble, a name which is given by the ignorant to any extraordinary stone. Fracture, conchoidal and fibrous, the fibrous of a silky lustre, rigid, diverging and crossing each other. It is gritty and easily crumbled, and readily decomposed on exposure to the air. It phosphoresces when scratched in the dark, and does not effervesce with acids a little and scratches glass. I do not know that it has been applied to any use yet.

Spuma Maris is the last, ~~which~~ of this genus, which I suppose you are glad to hear. By the Germans it is called Meer-schaum. It has according to authors a white, yellowish colour, an aoid appearance, smooth to the touch, adheres to the tongue, and look like clay, ~~into~~ which genus it has been ~~usually~~ usually placed. It is found by analysis to contain more magnesia than any of the genus — I believe I never have seen it, ~~and I did not see it.~~

I have omitted several species but not any of importance.

Note. The green serpentine of the higher Palatinates is of the finest description of the species, and altho' its external appearance does not indicate iron, and its analysis ^{detected} ~~is~~ ^{is} but little, yet it is so magnetic as to possess polarity much superior to most common load stones, affecting the needle at the distance of 22 feet.

Almshausen

Mineralogy -

~~Waterhouse~~

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