Caribou feeds, even in summer, upon Lichens (paper mosses) in a great measure, treading down and never tasting the Convallarias and grasses which are eagerly eaten by Cows. The cows will, when hungry, eat Lichens, but the Horse will not, yet he will eat the large Swamp Fern *(Osmunda Cinnamomea,)* which the cow will not. The Moose will not grow lean in winter, if he can find a thicket of young Moosewood, *(Acer Pennsylvanicum)* which he will browse upon, eating twigs an inch in diameter. In summer he feeds not at all upon herbs that grow on the ground, living upon leaves of trees and shrubs. The great length of his legs enables him to bear down with his breast young trees of a considerable size, and his enormous lips are well formed for stripping off their leaves. The Bear, like the Hog, eats every kind of grain and nuts; flesh, fish, fruit, insects and roots of various kinds; and it is well that he sleeps in winter, when cattle must have fed him had he been awake. The Fox is eager for fruit, flesh, and fish, but does not eat grain or roots. The squirrel lives on seeds and nuts where he can find them in abundance, but in colder regions makes dreadful havoc of the young birds, and feeds greedily upon eggs. Did all animals live upon exactly the same kinds of food, the strong would starve the weak in a time of scarcity; and did all vegetables require the same kind of food, many weak plants of slow growth would cease to exist. There are two causes which prevent most of the crops which we cultivate from continuing to thrive for a long time on the same ground. Insects collect about many plants in such numbers that they materially injure the crop by the second or third year. The roots of Red Clover are always injured in this way, by a minute worm, resembling that which attacks the roots of peas. The Swedish Turnip and Cabbage attract the small bug that causes the clubfoot, and most or all of the vegetables we cultivate are more or less injured in their roots by similar vermin, which are often so small that we can hardly see them. A naked fallow, when the ground is so frequently stirred that no vegetables are allowed to grow upon it, must destroy a great part of these animals as well as the seeds of weeds, and it is undoubtedly to the benefit derived from the destruction of these nuisances that the introduction of this expensive process is to be ascribed, for it certainly impoverishes a shallow soil more than any crop whatever. Another cause of the failure of crops continued for a long time on the same ground, is, that there are few soils that contain inexhaustible quantities of *all* the constituents of a vegetable, and of those substances which are necessary for preparing its food. Thus if an old pasture be broken up and well manured, it will in a favourable season, give a large crop of potatoes of the best quality; but if the same crop should be raised on this land for seven years in succession, it will be found to fail somewhat in quantity, and much in quality, although it should be constantly well manured; but should it now be sowed with grass, it will give a better crop than it would have done had it been sowed when first broke up. A rotation of crops prevents, in a considerable degree, the loss arising from these sources, and has probably been practised for time immemorial in those countries that were highly cultivated. We learn from Virgil, that it was well known to the Romans; but by rotations of crops we find we cannot wholly prevent the depredations of insects and worms; their eggs will remain in a dormant state for years without loosing their vitality, and it is necessary that cultivated land should occasionally be laid down to pasture and permitted to rest for some years. Chemistry has pointed out a considerable part of the elements of the food of plants, and we may so far safely trust to it. It is certain that neither animal nor vegetable possesses the power of *creating* any portion of them; they must be furnished to them. If therefore we find that the soil lacks, an ingredient which is necessary to the crop we sow, we should add that to it in the form of manure, but Chemists and Physiologists give us, together with facts that are demonstrated, a great many hypotheses, founded upon reasoning which might be trusted to, if all the data upon which it is founded were certain, but there is still much that is unknown upon these subjects; the principle of life performs its chemical operations in a peculiar way of its own. Seashore plants which are exposed to salt water contain a large proportion of the soda, and but a little of the acid of the salt. The Evergreen Fumitory contains a very large proportion of Potash, and is constantly (in summer) emitting the acid of nitre, in a gaseous state from its roots. It would then perhaps be possible for plants that needed nitrogen to take it from the common air, of which it forms the greatest part, if no ammonia were within their reach. Among the unknown things that may believe may be discovered by Chemistry we will mention the difference between the dark mould formed from decayed vegetables which grew on the richest soils, and peat earth formed from the productions of the most barren. These will be both called Humus, but they differ as much as day and night. When Chemistry can discover in what the difference consists, we may be to form a good manure from peat.—Again, we observe that generally vegetables are said to be decomposed by putrefaction without paying any attention to the operations of the Fungi which prepare the dead vegetables for putrefaction, and do the great part of the work. *All dead vegetables, in situations exposed* to the weather, are attacked by the Fungi, under whose operation far the greater part disappears. When a quantity of stable manure mixed with straw is thrown into a heap, it soon grows hot, and when this heat has continued for a week, if it is opened, a white substance with a peculiar smell of the Mushroom will be found branching through it in every direction, and forming no inconsiderable part of the whole heap. The straw in contact with this substance is brown, brittle, and appears to have lost two thirds of its weight: a small black watery mushroom often springs from the decaying. In general, leaves and herbaceous plants are attacked by the soft mushrooms, and wood by the harder toadstools; the bark of large trees at the same time being consumed by the leaves or leather like Fungi, and the twigs by the gelatinous Tremellæ. We have seen a large spruce spar left in the woods till it became dry rotted, it had lost more than half its original weight, upon splitting it open it was found to be full of fissures both transverse and longitudinal, dividing it into smaller pieces, that would have been produced by burning it to coal. Every fissure was occupied by a layer of fungus resembling white glove leather, this fungus apparently forming not less than a fourth of the whole mass. In this state some of these trees continue many years before putrefaction really commences, the fungus still remaining in a living state, as is proved by the touchwoods of a large size that are formed in one night upon a tree that had been long dry-rotten, that had never put out one before. There is another species which is remarkable for holding a great quantity of water, which quickly reduces a tree to a state resembling a heap of wet half rotten bark, soon followed by complete decomposition. In warm wet weather when wood, and also the fungus which partly decomposed it, are in a putrefying state, they frequently show phosphoric light. We are inclined to believe that the Fungi are formed from vegetable materials by animalcules akin to those which form the corals from carbonate of lime. [We are aware that this is heretical doctrine, but it is a lapse to which we have found ourselves exposed in more than one instance, *from believing* the evidence of our own senses.] Unlike most vegetables the Fu-