

Start not at the assertion, but plants and animals, so far as their truly *organic elements* are concerned, are the *offspring of the air*; they are but condensed or consolidated air.

It is in the vegetable kingdom, therefore, that the great elaboratory of organic life is found; it is there that both vegetable and animal substances are compounded, and they are all alike formed at the cost of the atmosphere.

From vegetables these substances pass ready formed into the bodies of herbivorous animals, which destroy one portion of them, and store up another in their tissues.

From herbivorous animals they pass ready formed, into the bodies of carnivorous animals, which destroy or lay them up according to their wants.

Finally, during the life of these animals, or after their death, the organic substances in question return to the atmosphere from whence they originally came in proportion as they are destroyed.

Thus is the mysterious circle of organic life upon the surface of the globe completed and maintained. The air contains or engenders the oxidised substances required: carbonic acid, water, nitric acid and ammonia. Vegetables, true reducing apparatus, seize upon the radicals of these, carbon, hydrogen, azote, and ammonia, and with them they fashion all the varieties of organic or organisable matters which they supply to animals. Animals, again, true apparatuses of combustion, reproduce from them carbonic acid, water, oxide of ammonia, and azotic or nitric acid, which return to the air to reproduce the same phenomena to the end of time. And if to this picture, already so striking by its simplicity and grandeur, we add the indubitable part performed by the solar light which is alone possessed of power to bring into play this immense, this unparalleled apparatus, constituted by the vegetable kingdom, in which the oxidised products of the atmosphere are subjected to reduction, the picture is complete.

Thus we see that it is impossible to apply inorganic matter, let it be in whatever shape it may, wrong. It matters not whether it be the decayed straw of wheat alone, or the straw used as litter which has absorbed the *fecæ* of animals, or the bodies of animals themselves—from the tiny sprat to the gigantic whale careering through the ocean, or the patient sheep and noble horse. The whole of their bodies are valuable for manure, bones, skin, flesh, and blood, when in a state of decomposition.

If the Farmer will think for himself, he will always find that science will assist him; for although practical experience possesses unquestionable value, it is like a vessel to which, in the form of science, the compass is wanting; it is a treasure which cannot be inherited. Science enables us to bequeath this treasure to our children, and it enables our children to increase the store. Science teaches us to recognise the food of plants, and the source from which it is derived. This knowledge alone makes us true masters of the soil and lords of our capital.

3rd. *By the land being left a certain time under pasture.* It is well known that if land is properly laid down in grass, and well stocked with sheep, it reacquires a considerable portion of the fertility which it has lost by continued cropping. Much also depends on the kind of stock employed to eat the grass. Stock which has come to maturity is the best; milk cows and young growing stock the worst, the latter from not having the whole of their frame fully developed, require a larger portion of salts for the formation of bone and muscle, and milk cows for the formation of milk; consequently, having assimilated so much for themselves, less is passed off in urine and dung.

If any person has the curiosity to examine an old grass pasture that has never received any manure, except left by stock, they will find two or three inches of the surface quite free from stones, the soil being of a rich soapy consistency; the whole of this soil is formed from the decayed roots and leaves of the grass, and the dung of the stock employed, so that a supply of manure for the following crops has been gradually accumulating during the time it has been pasture.

No general rule can be laid down as the period in which

the soil will be able to regain its former fertility; this depends principally on the number and quality of the stock.

In some counties, the slovenly and injurious practice exists of taking two, three, or four corn crops in succession, and then laying it down in grass to rest.

This is now confined principally to the south-eastern counties. The manner in which land is often laid down appears to be left in a great measure to chance, as the soil is often in a very foul state, and the seeds sown are not those best adapted to the soil, but such as the Farmer fancies are the best. By this system the grasses indigenous to the soil soon become master, and long before the land is broken up for the next crop, the principal part of the grasses sown have disappeared, and nothing but a bed of weeds left.

Again, the whole of the produce of grass must be consumed on the land—none carried off for the purpose of soiling or for hay. The pastures should be well stocked, and as few seed stalks allowed to rise as possible.

In some instances the subsoil is considerably richer in salts (that percolate rapidly) than the surface. When this is the case a crop of buck wheat is very useful; it being a deep-rooted plant, it brings many of the salts again to the surface which are contained in the stem and leaves. This crop should be ploughed in when in flower, which is found a good preparation for wheat.

After all, the soil, as Mr. Milburn observes, 'is never so utterly impoverished by cropping as not to be still capable of producing something.' The productive faculty composes what may be termed its natural fecundity, which, although existing in various proportions according to its original fertility, yet when capable of producing five bushels of rye per acre, besides the seed may be supposed equal to forty degrees; its full value being estimated at a hundred. Now, from various experiments which have been made on a large scale, it is supposed that the application of about eight tons per acre of well-fermented farm-yard manure, of average quality, is equal in its effects to fifty degrees of nutritive matter, and that a bare summer fallow, not only by the influence of its working on the land, but also by producing the decomposition of the weeds which it destroys, is equivalent to 10 degrees, thus bringing the soil round to its former state, and rendering it again fit for the production of further crops.—*Thomas Kier Short, Martin Hall, Notts, in Farmers' Herald.*

*To the Editor of the Mark Lane Express.*

SIR,—In your paper of last Monday you allude to the current report "that the late Anti-Corn-Law League were about to recommence their labours under the former leaders, for the purpose of effecting further reform;" or, in other words, subverting the constitution of the country, as their previous agitation has the credit and well-being of the people generally.—I looked for some other mad scheme from that source after reading a copy of Mr. Cobden's letter, wherein he states "the Testimonial Fund" had placed him in a position to devote himself entirely to public business," alias mischief, for what else has his free trade theory proved in practice? Are not the very people by whom the league was got up, for their own exclusive benefit at the expense and ruin of agricultural interests, in a worse state now, than before the alteration of the law? Look at the reports from Manchester and others of the manufacturing districts; and let me ask the question, supposing the subscription for the Cobden Fund was now to be commenced, would Manchester give upwards of £25,000, and other towns in proportion? or, query, would they give as many shillings? with the result of free trade now proved in reality, viz, nearly a total stop to their foreign, and a great falling off in their home trade; the natural consequences of their own acts. For what said the *Times* a few weeks back? why, that foreigners were building mills and factories with money procured here in exchange for their corn, and now manufacturing for themselves: of course they are; and the manufacturing league, assisted by a weak ministry, furnished them with the means of doing so; and also of competing with them as they will do on all the continental markets. Who, then, it may