

We make the following selection from an Essay on the Manufactures of Manures, for which a prize was awarded to the author, Mr. Foote, by an Agricultural Society in New England. The Essay was given to us by a gentleman in Boston, and as it contains much useful information we shall occasionally make selections from it. We think the publication of such Essays highly instructive, and regret there is not more of public spirit in Canada to encourage Essays on useful subjects. Much good have been effected in England by this means. There may be some theories advanced in Essays not easy to prove, but there will also be much information given that can be made practically useful. We have not in Canada at present, we believe, any society which offers encouragement to write Essays on useful subjects—and certainly it is not because we do not require them. We are not so far advanced in useful and practical knowledge on all subjects, that we do not need any further instruction. No state is so hopeless as that is, when we imagine our knowledge so perfect that we require no further instruction—it is the best educated men only, who are aware how much they have yet to learn.

PRELIMINARY PROPOSITIONS.—That vegetation annually appropriates to itself, and thus removes from the soil, a certain amount of nutritive principles; and that the removal of a succession of crops, without some compensation in the shape of manures, will gradually impoverish, and, if carried far enough, ultimately exhaust the soil, are propositions so manifestly true, as to require no illustration. We every where see that the process last indicated is sure to be followed by a gradual change in the color and texture of the soil, and by a proportionate diminution of its vegetable products, until, if not arrested, the final result is absolute sterility.

The truth of the converse of these propositions is equally evident. Take an old field which has been reduced to barrenness by an unrelenting system of cropping without compensation, and restore to it a portion of those vegetable matters by the abstraction of which its poverty has been occasioned, and amendment is at once the consequence. Repeat the operation, and a further progress towards fertility is made; extend it sufficiently far, and the face of nature is entirely renewed, and every symptom of a full recovery exhibited.

From these and kindred considerations, readily suggested to the reflecting mind, we draw the following

INFERENCES.—1. That the appropriate food of vegetation is, for the most part neither more nor less than the ultimate results of vegetation itself, modified by the action of the animal organism, and the several processes of fermentation.

2. That a limited amount only of the food of vegetation is contained in any given quantity of soil.

3. That a single crop cannot be removed from the soil, without diminishing, to a certain extent, its capabilities for supporting vegetable life.

4. That an uninterrupted cropping of any given portion of soil, without remuneration, will at length infallibly reduce it to sterility.

5. That the original fertility of any given portion of soil, can only be maintained by faithfully restoring to it, in the shape of manures, an amount of vegetable matter equal to that which is annually abstracted from it.

6. That an impoverished soil can only be restored to its original fertility, by the application to it, of an amount of vegetable matter, greater than that which is annually taken from it.

7. That the most exhausted lands can not only be regenerated, by sufficiently increasing the proportion of vegetable matter in the soil, but raised above the highest point of their original fertility.

8. That the deteriorated condition of the major part of our cultivated soil, is proof conclusive, that all the resources of the farmer have not, in general, been put in requisition.

9. That the secret of all good farming, lies in the skillful management, and judicious application of the common home-made manures.

10. That it is of the highest importance to the agriculturist, to study more carefully the nature of soil, the wants of vegetable life, and the mutual relations and dependencies of the soil and vegetation; and above all, to cast about him and explore the sources of those animal, vegetable, and mineral substances, the proper application of which to his cultivated fields, is not only an indispensable prerequisite to their increased fertility, but the certain harbinger, if coupled with economy, of competence at least, if not of affluence.

DEFINITION OF MANURE.—Manure is a term of almost unlimited application—embracing an immense number and variety of substances—including, indeed, whatever can be named in the animal, vegetable, and mineral kingdoms, capable of improving and fertilizing the soil. Says the author of British husbandry, 'Any thing whatever may be called manure, which, when applied to the soil, rectifies its defects, corrects any bad quality, or either stimulates it to yield, or stores it with nutriment.' Any classification of so heterogeneous a mass of substances, which should at once prove satisfactory to the agricultural chemist, and intelligible to the merely practical farmer, cannot, in the present state of agricultural science, be attempted with any prospect of success. A practical classification alone, however, would seem to be called for on the present occasion, and that which is regarded as the simplest will be chosen.

CLASSIFICATION OF MANURES.—'From the earliest speculations on the nature of manures, down to a very recent period, manures have been divided into two classes, nutritive and stimulative, or such as furnish the direct food of plants, and those which act as stimulants, or excite plants to take up and assimilate such kinds of food as is presented to them. In the first class have been placed all decayed vegetable matter, farm-yard manures, animal excrements, night-soil, and such other matters, as having been derived from plants, are considered as capable of being reconverted into vegetable matter. In the second class, it has been the custom to place gypsum, lime, such salts as are found to produce a favorable effect on vegetation, as the phosphates of lime in bones, and the nitrates existing in saltpetre, soda, &c.' [*Albany Cultivator*, Vol. 8, p. 95.] To these may be added a third class, consisting of variable mixtures from the two former, with several kinds of earth, and denominated composts. Thus we have the simple classification of all the manures into, 1st, *Nutritive Manures*; 2d, *Stimulative Manures*; and, 3d, *Composts*.

NUTRITIVE MANURES.—The great depositories of the manures of this class are the *barn-yard*, the *piggery*, and the *privy vault*. Each of which will claim our attention, for a moment, in relation to the causes which operate to diminish the amount and value of their contents.

CAUSES OF WASTE.—How, then, are the contents of these depositories chiefly liable to waste? We answer, 1st. By *infiltration*, or soaking away into the earth; 2d. By *evaporation*, or being taken up by the sun and winds; 3d. By *excessive fermentation*, in which the heaps accumulate so great a degree of heat, as to dissolve the salts which they contain, and dissipate them in the form of gaseous exhalations; and, 4th, by *drainage*, or flowing away in the currents of water, which are suffered, but too often, to despoil our barn-yards of their richest treasures, and to defile our highways, and clog up our ditches, with that which might otherwise fatten our corn-fields.

REMEDY FOR DRAINAGE.—To close effectually the last-named waste-gate, it is only necessary so to excavate the central portions of the yard, as to form a sufficient reservoir for the liquids that will naturally find their way into it, and carefully convey away the droppings from the roofs of the buildings, by good conductors, and to turn the