

THE FARMERS DEPARTMENT.

ADAPTING PLANTS TO SOILS.

The following valuable remarks, from the pen of Mrs. Agnes Ibbotson a lady celebrated for her agricultural and economical skill are extracted from the Bath and West of England Society's papers.

I have been lately much employed in endeavouring to show that all plants should be divided, disposed or placed according to the different soils, congenial to their habits, from which they originally proceed, and that it is to the total inattention to this circumstance, that we probably owe the very strange and contradictory results constantly to be found in all agricultural reports. No person can read with attention the late accounts delivered to the House of Commons, respecting the growth of corn throughout this kingdom, without being struck with the contradictory returns transmitted of the whole; and without being convinced that there must be some hidden cause for such a strange diversity in the gains of the farmer; as there are many instances adduced in those reports of the same excellent management, where the same seed has been sown, an equal degree of labor performed, with the same season, *time and measure* employed, and one farmer has gained three times as much again as was expended for putting in the crop, while another has scarcely exonerated and repaid himself for the labor and seed; what then could be the cause of the loss of the latter, and the gain of the former? It must be chiefly I am convinced, owing to the agreement or disagreement of the plant with the soil in which it is placed, its situation and aspect; three things of which the farmer knows but little, or ever takes into his calculation. He has but one way of putting plants, *loading the earth with manure*. But to adapt the plant to the soil from which it originally came, to *cult* also the manure to both that they may exactly agree, and not injure the vegetable; that the situation of the plant may be consulted, with respect to humidity and dryness; and that to complete the whole, the aspect also may be fitted, so that the plant that grows in the open exposure of the soil, which prefers shade may receive the same attentions truly wanting to our agricultural system, as I hope to show.

It has been a subject of considerable inquiry among agriculturists, as in what consists the food of plants. Some have attributed it to water, some to earth, and others to air. To all these sources vegetation is indebted; the fertilizing principle of all manures is referable to the extractive matter arising from decomposed animal and vegetable recrements, and in its state soluble in water, which is the carrying medium into the vegetable substances. Vegetables in general will not grow in pure earth, or pure water; some plants are so organized as to require only mechanical support from the soil, abstracting their nourishment from the atmosphere by means of their leaves; whilst others from their roots depend upon the soil for their support. Although many plants will grow in different soils, yet they are all their favourite ground; and it is more easy to accommodate the plant to the soil than to adapt the soil to the plant. By knowing therefore, what sort of plant the farmer is desirous to put in, he may of course be regulated with respect to the quantity and species of manure required, the aspect wanted, and the degree of humidity and dryness requisite for the soil. All plants came originally from a pe-

culiar earth; either from clay, sand, gravel, chalk, or loams formed from a mixture of some of these, or from a very wet or dry soil; and though many plants will grow indifferently in several species of earth, yet the have all their favourite ground, *that which they evidently prefer*, is certainly a very expensive thing; but to adapt the plant to the soil, is not only an easy and expeditious mode, but one which requires labor, infinite less assistance in dressing, seed, and care of every kind. It is true that all cultivated plants demand some manure, because nature gives not salt and oil enough in any earth, to do without some assistance of this kind; but the plant that is peculiar to the soil requires infinitely less than that which is adverse to it, and may therefore be cultivated at a quarter of the expense. Now nature is so bountiful, that there is scarcely a plant necessary to the food of man and animals, that, if we choose with care, has not one peculiar sort, calculated for every soil.

Nature has been bountiful in plants peculiarly adapted to agriculture in which there are quite as many species fitted for poor land, as for rich land; and if planted in their natural soils, give an infinitely greater return, than if subjected to those dreadful disorders, but too common to plants placed in improper ground. I have repeatedly traced maladies arising from this source, that tainted the means of life in a vegetable; and being constantly accustomed, when I heard of any extraordinary crop, to proceed to the place, and inquire thoroughly into the causes and management made use of by the farmer, I have generally found the same result, from an account of putting the plant into that ground from which it originally issued, and manuring it according to the quantum of juices it received from the earth and with that matter likely to form a proper compound, adapted to its wants, in short, attending to the right rules of vegetable economy, and the common process of nature.

But I am sorry to say, that in manuring the innumerable farms, diversely situated, I have but too often found this order reversed; the chalk plant put in sand, the sand plant in clay and so on; and what is still more, the watery plant put in dry ground, and the dry vegetable in a wet soil; and in all these cases they cannot fail of making a very bad crop. A plant accustomed to a poor soil, placed in a good one, rots; while the one which prefers a rich loam, is starved in a poor one. A clayey plant put in sand, is blown out of the earth, and by while the soil and plant are in clay, decays at the root from the smaller moisture, which it cannot bear. The chalk plant, also placed in gravel, is destroyed by its own acidity, which is no longer subdued, for most plants, if the farmer do not grudge the making of the soil, he may certainly do it, but it can never answer in point of expense, it is a strange mistake, and a most fatal one, that almost all, give some of our best gentlemen a farmers fall into, when they are ignorant of the nature of things. Now this is so completely the case in our day, that I am most anxious to censure the practice. It always remains in the account given by Miller, of what was done in the West Indies, when some botanists were desirous of bringing over some fine plants of the exotic species. They inquired not what the plants were, but wholly inattentive to their being rock plants, they put them into tubs of rich mud, but this was looked upon as an accident, and the same process again followed when other exotics breaking they concluded that the plants

must die, as the earth had left them; and flinging on them some dry sand which happened to be in the way, ordered the casks down to the hold, when to their great astonishment the plants so treated lived, while those in the other cases died as usual. This opened the eyes of the gardeners with respect to rock plants; but to this day sand plants, instead of having a poor soil, generally receives a rich one. There is not a more ruinous effect than that produced on the plant of a poor soil placed in rich ground.

From the Philadelphia Album.

A GENERAL DESCRIPTION OF THE DISEASES OF CATTLE.

The internal disorders of cattle may with propriety, be divided into two classes.

First, those of the organs subservient to digestion and chylification; secondly, those of the sanguiferous system, or blood vessels. The former may be cured by means of the simple prescriptions I have alluded to; the latter by the steam. In both, however, the animal's diet is an object of the greatest importance; for to what purpose would it be to remove the accumulated matter which occasions the disordered state of the digestive organs, were the animal still kept on the same diet which produced it, or what benefit could be expected from relieving the vital organs when oppressed by a redundancy of blood, if the animal were afterwards allowed to feed at pleasure, and form as much blood again, in a short time, as that which had been drawn off?

In the treatment of the disorders of cattle, attention to feeding is an essential object, and is equally, or more important, as a means of prevention; for it is not too much to assert, that nearly all their disorders originate in improper management as to feeding. A morbid susceptibility, or a predisposition to disease, may be propagated by negligence in breeding, and may be produced by taking animals from their native climate, and placing them in colder situations; for cold and moisture are often powerful agents in lessening the vital power, and especially that of the digestive organs. Still the principle, and often the immediate cause of their disorder, is improper feeding. The most fruitful source of disease in cattle, and especially milch cows, is bad hay,* and even such as is by many considered tolerably good. The fibrous parts of such hay gradually accumulate between the leaves of the compressed or stowed hay, and become matted together, and being detained by numerous papillae, with which the surface of the leaves is covered, produce at length a morbid condition of the fourth stomach, and often of the bowels also. The most common symptom of this state of the digestive organs is named the *yellow*; from the milk in one of the quarters of the udder, becoming of a yellow color, and stringy, as it is termed, thin, mixed with small filamentous coagula, or curd, often offensive in smell and taste, and sometimes streaked with blood. The acidity of the milk causes a swelling and hardening of the quarter; and unless it is drawn off several times a day, it often so inflames the cellular texture of the udder, as to terminate in suppuration, and an obiteration of the receptacle, or quarter, as it is commonly named. The ongoing drench never fails of curing this disorder, if given in season, and one dose is sufficient; after taking it the animal must be kept at grass, as that food, and the exercise

* Unwholesome water is often a cause of disease in cattle, especially milch cows.