

likely that in England, at least, there will be less wheat sown than in previous years. In reference to this, the English agriculturists reason in this wise:—"The addition of so large an importation, as nearly 45 millions cwt., to our very large crop has hardly been fully appreciated as yet." With the competition of the whole world against the English growth, it is a question if the cultivation of wheat is likely to be overborne by the foreign producers, and whether an alteration is not necessary in the course of cropping so as to direct the attention of practical men to the cultivation of some other produce that is more required in the consumption and less available to the foreign growers. If the English act in accordance with this reasoning, they will raise fewer acres of wheat, and hence there may be a greater demand for this, the most important of bread stuffs. But the demands of English purchasers depend less on the area of the wheat than on the favorable or unfavorable weather for its growth, and the prospects of the crop for 1875, as far as yet known, are very favorable. The seed bed was well prepared; the seed sown in the best condition, and the early growth gave great promise. If the season, be anything resembling that of 1874, England will again depend less on continental and American supplies than is generally the case. Looking at the coming season in the light of the one we have passed through, we cannot, we think, wisely make wheat our great spring crop as we have been in the habit of doing, but rather direct attention to the cultivation of some other grain.

Barley next to wheat, first demands our consideration; and there is much to be said in favor of our growing it, instead of spring wheat, more at least than we have been in the habit of doing. There is always a ready market for it, with remunerative prices. Throughout the past year, the prices, especially if compared with those of wheat, have been exceptionally high. The proportion of price between the two years was formerly as two to three, that is, barley brought two-thirds the price of wheat; this year the price is about the same for 100 lbs. The latest quotations from the English markets are, wheat, 41s. 6d. per quarter, barley, 43s. 3d. The prices in this market at present are; spring wheat \$1.45 per 100 lbs. to \$1.53, barley \$1.50 to \$1.75. This may be in part owing to deficiency in the barley crop in England. But this is not the only cause of high price, it is still owing to the inadequacy of the supply from other sources. It is the opinion of the best authorities in England, that the importation of malting barley cannot be sufficiently increased, because such a quality, with few exceptions, cannot be grown elsewhere. Of wheat, they can at any time import what will be wanted to meet a deficiency. The supplies from the Continent of Europe and from America are sufficient to supply the demands for breadstuffs; but the United States, the principal wheat and corn exporter, cannot grow enough malting barley for their own consumption. The area for the growth of good malting barley is limited—it is so in Great Britain—it is so in North America. In the United States the barley is not at all equal to that of Canada; so that in America the Canadian barley always brings the highest remuneration with American malsters; and of the barley grown in Nova Scotia, Prince Edwards Island and British Columbia we have most favorable reports.

In our consideration of this subject we have ourselves come to the conclusion, that barley sown in spring would in all probability be more profitable than wheat. We see there is a good demand for it, with remunerative prices, and that this is a prospect of the continuance of the demand, and that Canada produces barley of better quality the more southern part of North America, so that it

will always command good prices. There is besides another source of profit in grain, instead of spring wheat; it is a less scouring crop, less exhaustive of the fertility of the soil; it does not drain from it, in the same degree, those elements that other cereals do. Its roots do not strike so deep into the soil, but seem to need more of the nutriment derived from the immediate surface and through it from the atmosphere. It also arrives earlier at maturity. —S.

Plant Food.

THE PLOW AND THE CULTIVATOR.

We have in an American paper an article headed "The Cultivator vs. the Plow." The writer says:

"The conflict between the advocates of deep and shallow plowing is now joined by a third party, those who think that no plowing at all is best. The new theory that the surface should only be scratched is a formidable rival to both theories of plowing, and is supported by plausible arguments."

What are these arguments?

"All the produce from the soil, the food that supplies the myriads of men and animals on the surface of the earth is grown upon a crust of a few inches—usually three or four inches in depth."

"Manure on the surface, or barely covered in, is much more advantageous for plant life than the same manure buried deeper, and in like manner the fertilized soil of the surface, if turned down a few inches, will not be half as available for plant life as if left where it is. The shallowest plowing, therefore, is likely to do harm in this respect, unless it be the kind practised in the East with a crooked-stick."

In examining these plausible arguments, we must bear in mind that for the sustenance of plant life there must be an adequate supply of plant food, and that supply given with no niggard hand, if we are to obtain a good yield from our fields.—Whence plants obtain that food is a question of first consideration. A portion of it is derived immediately from the atmosphere, but the great storehouse of plant food is the soil. Its constituent parts are the elements of that food. All farmers know that if there be not a good depth of soil to give an adequate supply of plant food for our crops, whether cereals or roots, they must be light. We might, with as good reason, expect our horses to do well if we only put a handful of provender in their mangers, or cows on a bare pasture to make a good return to the dairy. The fertility of the three or four inches on the surface is, it is true, advantageous for plant life, and more so than if that fertility were buried deeper. But this applies merely to the germination and early growth of the plant. Where fertility as the result of cultivation is limited to a few inches, the plants soon exchange their dark green color for a sickly yellow, the promise given in their first growth is never realized. The good seed bed had given them a good start, but cannot give the needed sustenance to the roots now passed beyond its depth, and they soon seem sere and wilted.

It is true that a farmer in some instances cannot, unless after years of labor, have a deep soil, but he can in all cases make it deeper than the few inches—deepen gradually and continuously, knowing that there is a store of wealth in the greater depth of soil, only requiring cultivation to make it as available for the plant food as the mere surface. The plow and the cultivator have each their place and work—not the cultivator vs. the plow. On fallowed land, when the surface at seed time had become too compact to be a good seed bed, and yet was more fertile than that beneath, we have had

the cultivator used; and, after a manuring the previous year, we would, if we were to sow the seed broadcast, and cover it by harrowing, cultivate the land in preference to plowing. In such instances the cultivator is used as supplementary to the plow, and would make the requisite preparations for a good crop—a rich, mellow seed bed and a deep, well-plowed soil, into which the roots would easily penetrate and from which they could absorb the nutriment needed in every state of their growing and maturing. There was consequently no premature fading of the leaf in a time of excessive drought or moisture, no return of only twelve or fifteen bushels of grain as the yield. The more thorough cultivation, the deeper plowing and heavier manuring in England account, at least in part, for the fact that while the average returns of wheat in England are almost thirty bushels, the average in America is under half that number. —S.

Prize Essay on Manuring.

The question, When is the most suitable time for the application of manure, naturally resolves itself into the two following questions:—First, what season of the year can manure be applied with the least waste, and greatest benefit to the following crop. Second, what season of the year can it be cheapest and most conveniently hauled out, and spread on the land. To unite these two desiderata, would be an answer to the question.

Before proceeding any further, I shall take a cursory glance at the different modes, and times of applying manure, as I have practised and observed, embracing an experience of thirty years, two-thirds of which, was spent in the old County of York. The fact is well known, that, until twenty years ago, raising wheat was the *summum bonum* of Canadian farming. With few exceptions, not more than one or two acres of turnips, and perhaps an acre of potatoes, half a dozen drills of carrots and mangolds, a few hills of corn, constituted the green crop on a hundred acre farm. The principal part of the summer tillage was therefore devoted to the fallow, which was (by good farmers,) ploughed in the fall, twice cross ploughed, and then ridged up previous to sowing. The manure was applied as soon as convenient after spring seeding, and before the first cross ploughing. The repeated ploughing and harrowing thoroughly incorporated the manure with the soil, and its soluble parts made immediately available for plant food. Seeds of noxious weeds already in the soil, or contained in the manure, germinated and were killed by the working of the land. If the growth of fall wheat in summer fallow be the principal object to be obtained, I am convinced from practical experience, this is at once the cheapest, most convenient time, and most beneficial method of applying manure. I had known farmers, whose greed overcame their judgment, take a crop of peas or barley, then apply the manure as soon as possible after the crop was removed, plow it down and sow wheat. I have seen a paying crop follow this, but seldom saw the land left in good order for the ensuing crops. This plan of applying manure to fall wheat is not to be recommended. The wheat crop does not receive the full benefit of the manure, the land is not properly cleaned, and if the harvest be somewhat late, it causes an excess of labor at seeding time, often retarding the sowing for a week or ten days. Another way of applying manure to fall wheat, and practised largely some years ago north of Toronto, was to spread the manure evenly on the surface of the land immediately after sowing. When the manure was well composted, in so far as its utility to the soil, benefit to the crop, and its acting as a mulch to the young wheat, was concerned, no objections can be raised, but if there were seeds of

weeds in the manure, they would flourish in the thunder shower, and be a practical impossibility.

As the mode of manuring governed to a great extent the rotation of crops, many years ago, in lieu thereof, a green crop, tall, leafy, after mowing, was sown. When I come to crowded with manure, seed to accomplish the same purposes I manure for corn in the stubble, on the round furrows, tended for turnips, manured in the opening of the closing time, more than fifty. From this mode the land well corn and tur and clover. ploughed do the fall, lay face, its soil the bottom tent washed therefore, it quired. The manuring in if the manure the plant is but its benefit. I growing in ing so much distributed.

For the field light manure, so of the crop to assist in marked it into square heap of manure, which immediately to prepare and plan connection brother farmer system of advantages early after the seeds and the accelerators have seen considerable harvest matter retained food. does not farm operation enough used for weeds, hoeing the manure