

Agriculture.

Fall Plowing and Drainage.

The value of fall plowing has generally come to be recognized in the West, and yet a large majority of farmers imagine that the later the land is turned over the better. Consequently this important work is left so late that the ground freezes up, leaving much land unplowed that should have been turned over. Again, many otherwise good farmers think that land may be plowed in the fall when wet, without detriment to its texture. It is true the injury is not so great as would have happened if plowed wet in the spring, since the action of frost during the winter mellow and breaks up the soil to a large extent. All that the observing farmer need do to satisfy himself as between land plowed wet in the fall and that plowed dry, or when in a friable state, is to make the experiment on contiguous lands and note the result.

We should never hesitate to plow land when very dry in the fall. It is only a question of power. The land plowed when very dry will come out in the spring in the nicest and most friable condition, and, as a rule, such land plowed early in the season will be in better condition than that plowed later. The reason is obvious. The very dry soil is turned up often in lumps, and thus a greater surface is exposed to the combined action of air, water and frost. Even for corn following a crop of small grain, we have had excellent success upon deep fall plowing—say 8 inches, even when not re-plowed in the spring. Nevertheless, the easiest and cheapest way to fit such land is to lightly re-plow it just before planting, since the labor necessary to fit it for the seed, with cultivators, is about equal to a light plowing. All that is needed in the spring following is to move the soil to a depth of three or four inches.

The chief value of fall plowing is when small grain is to be sown. For spring wheat and grass seed, it is absolutely necessary to success; and for barley, oats and flax, we consider fall plowing to be of fully as much value as for wheat.

In fall plowing there will be a number of very important points gained. 1. The labor is accomplished at a season when the press of work is not severe, and the teams are comparatively idle. 2. The soil is generally in the best condition for plowing. 3. A crop of stubble and weeds is turned under, which, if well done, gives no trouble in spring. 4. The soil is thoroughly aerated and broken down during the winter, and if not disturbed until dry enough for working in the spring, will come out in a most friable state. 5. A tilth being brought at the surface, the bottom remains in that firm state necessary to the best success with small grain. 6. It enables the farmer to open water-ways and drain-furrows to carry off surplus water, thus often enabling him to get in his crops while his neighbors are waiting on the weather. 7. It causes the land to soon become warm in the spring, thus forwarding the season fully a week, and in the case of untoward weather, sometimes ten days. 8. It enhances the productiveness of the crop by allowing its roots to take hold of the soil while yet other land is sodden with water. 9. This advantage is carried all through the season, when it happens to be wet, since instead of the surplus water soaking into the soil, and therefore only cast off by the slow process of evaporation at the surface, the soil loses its heat, and often becomes so chilled from this cause as to occasion the crop to turn yellow.

We have lately taken up this question of surface drainage, and it is not necessary to refer to it again here, except to remark that it is the most important problem with which the Western farmer has to deal. It must always precede thorough drainage, from the simple fact that the average Western farm will not bear the cost of underdraining. The time, however, will come when our lands will bear this expense. Until this time we must use the means which we have cheaply at hand. These are fall plowing during the dry season, followed by a system of furrowing to such natural out-falls as will enable the surplus water to be carried easily and quickly away.—*Prairie Farmer.*

Mr. Hallett, of Bristol, England, well known for his successful experiments in improving the quality and yield of seed grains through careful selection, in relation to this question says: "Very close observation during many years has led me to the discovery that the variations in the cereals which nature presents to us are not only heredi-

tary, but that they proceed upon a fixed principle, and from them I have deduced the following law of development of cereals: 1. Every fully-developed plant, whether of wheat, oats or barley, presents an ear superior in productive power to any of the rest on that plant. 2. Every such plant contains one grain, which, upon trial, proves more productive than any other. 3. The best grain in a given plant is found in its best ear. 4. The superior vigor of this grain is transmissible in different degrees in its progeny. 5. By repeated careful selection the superiority is accumulated. 6. The improvement, which is at first rapid, gradually, after a long series of years, is diminished in amount, and evidently so far arrested that, practically speaking, a limit to improvement in the desired quality is reached. 7. By still continuing to select, the improvement is maintained, and practically a fixed type is the result."

Talking recently to a Northwestern farmer upon the difference between farming in his country and in the South, he asked: "Do you use wind-mills in the South?" When we assured him we had never seen such a thing in the cotton states, he expressed great astonishment, and assured us they were indispensable in his prairie country; for, said he: "Where streams are lacking we sink a well, place a wind-mill over it, and by its power draw all the water for our stock, and occasionally irrigate a piece of land." We thought much of this subject during the month of May last. Not a shower of rain fell from May 5 till June 10, and every day the wind blew steadily for at least ten hours during the day. Had our farmers erected wind-mills near the water courses they could have been made to pay for themselves during that time in irrigating the low lands, which in most cases became too hard to work, and upon which the crops seemed to grow not an inch in six weeks. Wind mills can be erected for less than seventy-five dollars each. Why do not our farmers use them.—*Charleston News.*

The *North British Agriculturist* says: The potato disease is still spreading. The wholesome portion of the crop in many a field, will we fear, scarcely pay lifting. That potatoes will be very dear eating before the next crop is obtainable is generally believed, and some go the length of expecting them to be nearly as dear as eggs. Store cattle are a stiff sale at reduced prices. Of the fleecy tribe ewes are dearest, which is attributable to the fact that they can be wintered on fewer turnips than hogs or wethers.

To keep roots sound and plump, Mr. Benjamin P. Ware, of Marblehead, a successful gardener, cuts off the fine roots close to the body, and pares away the crown of the turnip or beet sufficiently to destroy all buds or rudiments of buds. The thus doctored roots are then placed in barrels of sand or covered with earth in the cellar to prevent wilting. Removing the buds and rootlets prevents that corkiness so common with these roots when kept till late in winter, which is caused by the support of sprouts and rootlets using up much of the more tender and edible substance of the roots. Turnips and beets thus treated are as nice for the table in late winter or early spring as when first harvested.

Johnson says of millet that its grain is quite equal in nutritive value to the average of English wheats. No one can doubt its value after seeing a field of German millet ripe and ready for the sickle. It contains 9 per cent. of nitrogenous matter, 74 of starch and sugar, 2.6 of fat, with 2.3 of mineral matter.

Decaying vegetable matter about the houses, around the walls, and in the cellar, are prolific causes of diseases in the farm house. Ill treatment of cows, getting them excited and then feeding the milk to children, is a practice liable to be attended with fatal results. Bad ventilation, attended with impure air, causes catarrhal and skin diseases of our animals, especially when obliged to breathe the impurities of decaying manure. Better ventilation of sleeping rooms is urged, and more outdoor exercise for the farmer's wife.

Analyses of leaves and wood show that of earthy matter or ashes, the mature foliage of the elm contains 11 per cent.; the solid wood less than 2; the leaves of the willow more than 8 per cent., its wood only 0.44; those of the beech 6.67 per cent., the wood only 0.35; those of the European oak 4.06 per cent., the wood only 0.22; those of the pitch pine 3.13 per cent., the wood only 0.37.

Clawson Wheat and Flour.

The real quality of Clawson wheat is now a subject of great importance to Canadian farmers. Of no other variety of white wheat has there been so much sown this season. This, in itself, is proof sufficient that its yield, at least in the past season, has given satisfaction to those who had sown it, and our recommendation of it to our readers for trial was well warranted. Its yield has been very large; so far, good—but there has arisen a prejudice against it; it has been said that its flour is not equal to that of some other varieties and that its market value is consequently less than that of other wheat. Of this we have no sufficient proof. There is very strong testimony that Clawson wheat is not only a good wheat for yield, but also that it makes good flour and gives the miller a large return. To this purport is the following letter from a correspondent of the *Country Gentleman*, which we here give somewhat abridged:—

Having grown this new wheat for the first time the past season, I have watched with much interest and some anxiety the varied reports concerning it which have appeared in your columns, and in various other portions of the agricultural press. Although much pleased with its appearance and growth, I confess to a deal of uncertainty as to its general flouring capacity, which, however, was entirely due to the few unfavorable reports emanating, as I then supposed, from reliable sources. Since the harvest, however, the subject has been definitely settled in my own mind, and all further solicitude in regard to the Clawson wheat is happily dispelled.

Last autumn I obtained 3½ bushels from one of your advertisers in New Jersey, it being the best sample received, and the finest seed grain I ever saw—white, clean and plump. I entrusted three bushels thereof to the care of a clay oat stubble, newly drained, and exposed to the elements; and, although the latter proved quite inauspicious, owing to a most unprecedented lack of moisture throughout, it wintered well, grew nicely and produced a fair crop, yielding better than the Treadwell, Deihl or Mediterranean, commonly grown here; and I think I can now show the finest wheat in the county. It is very white, plump, clean and hard, weighing 63 pounds to the measured bushel; straw very bright, standing up well; was fully ripe July 6th, and, contrary to the experience of many of your correspondents, I did not find it to shell any more than other varieties in the process of harvesting. It threshes nicely, being awnless, and having very little chaff, easy to handle, except that the sheaves were very heavy. Living within a few miles of a good custom flouring mill, I repaired thither with four measured bushels of this doubtful grain, half expecting to be told they could not grind that kind for the want of proper machinery. Well, I found the miller in charge to be a green German, just from Castle Garden. This fact was certainly not specially in favor of my test. In a few days I obtained from this grain—which I will assume to have been 252 pounds, not having weighed it—159 pounds of fine flour and 63 pounds of bran and middlings, there being a very small portion of the latter. The toll, 25½ pounds, had, of course, been taken out previous to grinding, thus leaving, if my assumed weight be correct, 4 4-5 pounds as waste in the process.

Although in truth the flour received was very beautiful indeed in every respect, and the miller pronounced it of the finest description, it was not yet ready for the table, and might prove treacherous on the kneading-board. It thus remained for my wife to fully complete the cereal test, which, of course, was to be in the form of bread, as all will doubtless admit that good bread flour is good flour, and good for anything else. Not to make any exorbitant claim for my wife as a bread-maker, however—they are so modest, you know—I was still quite satisfied to trust the Clawson reputation to her care. But she nearly failed to fully establish it at the first trial, by using a new variety of much puffed yeast, which proved entirely inflated with printer's ink, and quite spoiled our Clawson bread. The next trial, however, by the usual method, was entirely successful in producing most excellent bread, very white, light, tender, sweet and delicious, and since then our Clawson flour has made the very best of bread, cake, biscuit and whatever else was required of it; hence we regard it of the very first quality in every respect.

Whether or not this wheat be deficient in gluten,